



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

August 10, 2021

Mr. David 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 – INTEGRATED INSPECTION
REPORT 05000220/2021002 AND 05000410/2021002 AND INDEPENDENT
SPENT FUEL STORAGE INSTALLATION REPORT 07201036/2021002**

Dear Mr. Rhoades:

On June 30, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Nine Mile Point Nuclear Station. On July 26, 2021, the NRC inspectors discussed the results of this inspection with Mr. Peter Orphanos, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

Four findings of very low safety significance (Green) are documented in this report. Two of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations 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.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; and the NRC Resident Inspector at Nine Mile Point Nuclear Station.

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, 05000410 and 07201036
License Nos. DPR-63 and NPF-69

Enclosure:
As stated

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SUBJECT: NINE MILE POINT NUCLEAR STATION – INTEGRATED INSPECTION REPORT 05000220/2021002 AND 05000410/2021002 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION REPORT 07201036/2021002 DATED AUGUST 10, 2021

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

Docket Numbers: 05000220, 05000410, and 07201036

License Numbers: DPR-63 and NPF-69

Report Numbers: 05000220/2021002, 05000410/2021002, and 07201036/2021002

Enterprise Identifier: I-2021-002-0044
I-2021-001-0059

Licensee: Exelon Nuclear

Facility: Nine Mile Point Nuclear Station

Location: Oswego, NY

Inspection Dates: April 01, 2021 to June 30, 2021

Inspectors: G. Stock, Senior Resident Inspector
J. Dolecki, Resident Inspector
B. Sienel, Resident Inspector
E. Andrews, Health Physicist
S. Haney, Resident Inspector
J. Kulp, Senior Reactor Inspector
O. Masnyk Bailey, Health Physicist
J. Nicholson, Senior Health Physicist
K. Warner, Senior Health Physicist

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, 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

ASME Section XI Subsection IWE Inservice Inspection Examination of Wetted Surfaces of Containment Not Performed in First Inspection Interval			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000220/2021002-01 Open/Closed	None (NPP)	71111.08G
<p>The inspectors identified a Green finding and associated non-cited violation (NCV) of ASME Section XI Subparagraph IWE-2412(a), “Inspection Program B” when Nine Mile Point did not perform an inspection for wetted surfaces of submerged areas (ASME Item E1.12) at Unit 1 in the first containment inservice inspection interval which spanned between December 26, 1999 and Aug 22, 2009. Specifically, in 2003, Nine Mile Point (Constellation Energy) credited an April 1999 expedited examination (performed by Niagara Mohawk) to satisfy the first interval examination requirement which was not allowed by a condition in Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50.55a(g)(6)(ii)(B)(3), which stated that the expedited examinations could only be used for satisfying routine first interval examination requirements if they were performed during the first interval.</p>			

Inadequate Structural Evaluation of Effect of Corrosion on Interior Surface of Suppression Pool (Torus)			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000220/2021002-02 Open/Closed	[H.6] - Design Margins	71111.08G
<p>The inspectors identified a Green finding and associated non-cited violation (NCV) of ASME Section XI, paragraph IWE-3122.3, “Acceptance by Engineering Evaluation,” when Exelon performed an engineering evaluation that did not meet the applicable requirements in ASME Section XI, subsection IWE as required by 10 CFR Part 50.55a(g)(4)(v). Specifically, the engineering evaluation did not demonstrate that the torus wall thickness satisfied the minimum wall thickness requirements in their design specification through the period the evaluation applied which ends in 2023.</p>			

Failure to Maintain Radiation Exposure ALARA during N2R17			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	Green FIN 05000220,05000410/2021002-03 Open/Closed	[H.4] - Teamwork	71124.02
<p>The inspectors identified a finding of very low safety significance (Green) for the licensee having unplanned and unintended occupational collective radiation dose because of deficiencies in the licensee's work planning and work control program. Specifically, the licensee failed to appropriately follow RP-AA-401, "ALARA Planning and Controls," and did not follow their work-in-progress review process when tasks were not proceeding as planned with a greater than anticipated dose accrual. The resultant accumulated dose for several ALARA plans exceeded 5 person-rem and exceeded the original estimates by 50 percent because of deficiencies in the licensee's work planning and work control program.</p>			

Failure to Follow Complex Troubleshooting Process			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green FIN 05000220,05000410/2021002-04 Open/Closed	[P.5] - Operating Experience	71152
<p>The inspectors identified a finding of very low safety significance (Green) because Exelon did not follow their complex troubleshooting process in procedure MA-AA-716-004, "Conduct of Troubleshooting," following the failure of emergency diesel generator (EDG) 103 output circuit breaker, R1032, to close on April 2 and 5, 2021. Specifically, Exelon failed to both perform a thorough as-found investigation related to the breaker malfunction and incorporate industry operating experience in their failure mode causal tree (FMCT) process to adequately identify and refute all failure modes in the breaker closing circuit logic.</p>			

Additional Tracking Items

None.

PLANT STATUS

Unit 1 began the inspection period shut down for a scheduled refueling outage (N1R26). On April 9, 2021, operators began startup. On April 13, 2021, Unit 1 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 June 18, 2021, reactor power was reduced to approximately 65 percent to perform control rod channel interference testing, control rod scram time testing, and control rod line adjustments. On June 19, 2021, reactor power returned to rated thermal power. Unit 2 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 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.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident and regional inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time, the resident inspectors performed periodic site visits each week, increasing the amount of time on site as local COVID-19 conditions permitted. As part of their onsite activities, resident inspectors conducted plant status activities as described in IMC 2515, Appendix D; observed risk significant activities; and completed on site portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or a portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

External Flooding Sample (IP Section 03.03) (1 Sample)

- (1) The inspectors verified flood protection barriers, mitigation plans, procedures, and equipment are consistent with the licensee's design requirements and risk analysis assumptions for coping with external flooding on May 18, 2021.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (3 Samples)

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

- (1) Unit 1 spent fuel pool cooling system on April 1, 2021
- (2) Unit 1 core spray train 111 on April 1, 2021
- (3) Unit 1 high pressure coolant injection 12 function of the feedwater system on May 17, 2021

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (4 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 1 reactor building southwest 198'/218' (111 and 112 core spray), fire area R1B, on April 1, 2021
- (2) Unit 1 reactor building northeast 198'/218' (112 and 122 containment spray), fire area R1A, on June 29, 2021
- (3) Unit 1 reactor building northwest 198'/218' (111 and 121 containment spray), fire area R1B, on June 29, 2021
- (4) Unit 1 turbine building 261', diesel generator 102 room, fire area 22, on June 29, 2021

Fire Brigade Drill Performance Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated fire brigade performance during an unannounced fire brigade drill on June 8, 2021.

71111.07A - Heat Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Unit 2 Division III diesel generator jacket water heat exchanger

71111.08G - Inservice Inspection Activities (BWR)

BWR Inservice Inspection Activities Sample - Nondestructive Examination and Welding Activities (IP Section 03.01) (1 Sample)

- (1) The inspectors verified that the reactor coolant system boundary, reactor vessel internals, risk-significant piping system boundaries, and containment boundary are appropriately monitored for degradation and that repairs and replacements were appropriately fabricated, examined and accepted by reviewing the following activities from March 28, 2021, to June 29, 2021:

- Phased Array Ultrasonic Examination (PAUT) of the N1D Nozzle to Safe End Dissimilar Weld (Component ID: 32-WD-125) (N1R26-VEN-003)
- Manual Ultrasonic Examination (UT) of the N1D Nozzle to Vessel Weld (Component ID: 32-WD-124) (N1R26-APR-02)
- Dye Penetrant (PT) Examination of Core Spray system Welded Pipe Stanchion (Component ID: 40.H52-WD-001), (N1R26-PT-001)
- Magnetic Particle (MT) Examination of Reactor Vessel Stabilizer Integral Welded Lug @22.5 degrees (Component ID: RV-SB1-IA-371/372), (N1R26-MT-005)
- Dye Penetrant (PT) Examination of Field Weld 2 of Emergency Condenser Condensate Return Line Drain Valve (Component ID: VLV-39-73), (BOP-PT-21-010)
- Visual Examination (VT-1) of N1D Nozzle Inner Radius (Component ID: 32-WD-124-IR) (NMP1-RPV N1D)
- Enhanced Visual Examination (EVT-1) of Steam Dryer Lifting Lug Assembly Collar Lock Weld @225 Degrees (Component ID: SD OD LL 225 Rod to Collar Lock Weld), (NMP1-SD OD LL 225 Rod to Collar Lock Weld)
- Review of Relevant Condition Accepted by Evaluation During Previous Outage:
 - NMP1 Steam Dryer Lifting Lug 225 Degrees Cracked Lock Weld (IR 4235301 and IR 4234492)
 - IWE ID Torus Inspection Identify Corrosion and Rust (IR 04235565)
- Repair/Replacement Activity:
 - Cut Out and Replace Emergency Condenser Condensate Return Line Drain Line Isolation Valves VLV-39-72 and VLV-39-073 (C93734478)

71111.11Q - Licensed Operator Regualification 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 the reactor startup from refueling outage N1R26 on April 9, 2021.
- (2) The inspectors observed Unit 2 operations personnel during a downpower to 75 percent for a rod pattern adjustment on June 18, 2021.

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

- (1) The inspectors observed a Unit 1 simulator evaluation that included a loss of power to the feedwater level control setpoint controller, loss of the 12 circulating water pump, loss of offsite power, and steam leak in the drywell on April 23, 2021.
- (2) The inspectors observed a Unit 2 simulator evaluation that included trips of reactor building closed loop cooling, pressure maintenance, and recirculation pumps and a loss of coolant accident inside containment on April 23, 2021.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (2 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 4160-volt circuit breakers
- (2) Unit 1 primary containment (drywell) structural monitoring

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (7 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 1 elevated risk during planned emergency diesel generator output breaker confirmatory measurements on April 20, 2021
- (2) Unit 1 elevated risk during 11 feedwater pump maintenance on May 17, 2021
- (3) Unit 2 elevated risk during planned maintenance on the Division I emergency diesel generator fuel pump on May 19, 2021
- (4) Unit 1 elevated risk during planned core spray 111 maintenance on May 25, 2021
- (5) Unit 2 elevated risk during emergent work on the Division III diesel generator jacket water heat exchanger on June 1, 2021
- (6) Unit 2 elevated risk during emergent work on a Division I relay room air conditioning unit on June 4, 2021
- (7) Unit 1 elevated risk during planned 111 containment spray maintenance the week of June 28, 2021

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (3 Samples)

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

- (1) Unit 1 battery 12 following potential reversal on two cells on April 2, 2021
- (2) Unit 1 reactor vessel water level instrumentation following level deviation between instruments on April 11, 2021
- (3) Unit 1 containment spray raw water system due to configuration change with manual block valve 93-65 closed on May 11, 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-18-000559, Replace Unit 1 PB [power board] 102/PB103 Loss of Voltage Relays

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (10 Samples)

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

- (1) Unit 1 reactor pressure vessel and ASME Class 1 system leakage test on April 1, 2021
- (2) Unit 1 power board 103 loss of voltage relays following replacement on April 2, 2021
- (3) Unit 1 containment spray 122 discharge isolation valve 80-35 failed to stroke open, on April 3, 2021
- (4) Unit 1 electromatic relief valve 111 maintenance on April 4, 2021
- (5) Unit 1 emergency condenser 112 heat exchanger aging management inspection on April 10, 2021
- (6) Unit 1 electronic pressure regulator following MOOG valve replacement on April 13, 2021
- (7) Unit 1 electromatic relief valve 113 installed out of plumb on April 28, 2021
- (8) Unit 1 core spray topping pump 111 preventive maintenance on May 26, 2021
- (9) Unit 2 'B' instrument air compressor emergent ventilation fan motor replacement on June 3, 2021
- (10) Unit 1 emergency diesel generator 102 circulating lube oil pump motor brushes repair on June 6, 2021

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated Unit 1 refueling outage N1R26 activities from April 1 - 11, 2021.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (IP Section 03.01) (4 Samples)

- (1) N1-ISP-066-003, Auto-Depressurization System Operability Test, on April 5, 2021
- (2) N1-ST-R12, Initiation of ECS from RSP 11 and 12 Operability Test, on April 7, 2021
- (3) N1-ST-M4B, Emergency Diesel Generator 103 and PB 103 Operability Test, on May 10, 2021

- (4) N2-OSP-CSL-Q@002, LPCS Pump and Valve Operability and System Integrity Test, on June 24, 2021

Inservice Testing (IP Section 03.01) (3 Samples)

- (1) N1-ST-R2B, LOCA and EDG 103 Simulated Auto Initiation Test, on April 8, 2021
- (2) N2-OSP-CSH-Q@002, HPCS Pump and Valve Operability and System Integrity Test, on April 28, 2021
- (3) N1-ST-C1B, Liquid Poison System 12 Functional Test Using Demineralized Water with Squib Valve Plugs Removed, on April 30, 2021

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

- (1) N1-ST-TYC-001, MSIV Type C Leak Rate Tests, Attachment 15, on April 5, 2021

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated how the licensee identifies the magnitude and extent of radiation levels and the concentrations and quantities of radioactive materials and how the licensee assesses radiological hazards.

Instructions to Workers (IP Section 03.02) (1 Sample)

The inspectors evaluated instructions to workers including radiation work permits used to access high radiation areas.

- (1) The inspectors reviewed the following:

Radiation Work Packages

- NM-1-21-00503, DW Inspections, Tours, Department Minor Maintenance in Proximity to High Dose Rate Components
- NM-1-21-00601, RB Outage Reactor Water Cleanup (RWCU) Area Activities
- NM-1-21-00612, RB Outage RAC/NDE/ISI
- NM-2-20-00511, DW Valve Maintenance and Support Activities

Electronic Alarming Dosimeter Alarms

- Accumulated dose alarm on March 28, 2021 (IR 04412136)
- No dose rate alarms occurred during the period of this inspection

Labeling of Containers in Unit 1 Drywell

Contamination and Radioactive Material Control (IP Section 03.03) (2 Samples)

The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material.

- (1) The inspectors observed workers exiting the radiation control area at Unit 1 during a refueling outage.
- (2) The inspectors walked down and evaluated locations of contamination monitoring equipment, including friskers used by personnel exiting the Unit 1 drywell during a refueling outage.

Radiological Hazards Control and Work Coverage (IP Section 03.04) (4 Samples)

The inspectors evaluated in-plant radiological conditions during facility walkdowns and observation of radiological work activities.

- (1) The inspectors monitored pre-job briefings and observed work associated with a reactor water cleanup valve replacement in the reactor water cleanup heat exchanger room.
- (2) The inspectors reviewed radiological surveys and documentation associated with reactor water cleanup room flow accelerated corrosion testing.
- (3) The inspectors observed radiation technicians perform periodic surveys on the recirculation motors in the Unit 1 drywell.
- (4) The inspectors also reviewed the personnel contamination event log and associated issue reports from the 2020 Unit 2 refueling outage N2R17.

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (3 Samples)

The inspectors evaluated licensee controls of the following High Radiation Areas and Very High Radiation Areas:

- (1) Unit 1 drywell
- (2) Unit 1 reactor water cleanup system heat exchanger room
- (3) Procedures and procedure changes for adequacy of access controls

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 03.06) (1 Sample)

- (1) The inspectors evaluated radiation worker and radiation protection technician performance as it pertains to radiation protection requirements.

71124.02 - Occupational ALARA Planning and Controls

Radiological Work Planning (IP Section 03.01) (4 Samples)

The inspectors evaluated the licensee's radiological work planning. The inspectors reviewed the following activities:

- (1) Radiation Work Permit 510; ALARA Plan 2020-2-010
- (2) Radiation Work Permit 520; ALARA Plan 2020-2-020
- (3) Radiation Work Permit 501; ALARA Plan 2020-2-001
- (4) Radiation Work Permit 511; ALARA Plan 2020-2-011

Verification of Dose Estimates and Exposure Tracking Systems (IP Section 03.02) (4 Samples)

The inspectors evaluated dose estimates and exposure tracking. The inspectors reviewed the following ALARA (as low as reasonably achievable) planning documents and associated post-job reviews:

- (1) ALARA Plan 2020-2-001
- (2) ALARA Plan 2020-2-010
- (3) ALARA Plan 2020-2-011
- (4) ALARA Plan 2020-2-020

Additionally, the inspectors reviewed the corrective action program evaluation associated with IR 04335119.

Implementation of ALARA and Radiological Work Controls (IP Section 03.03) (2 Samples)

The inspectors reviewed as low as reasonably achievable practices and radiological work controls. The inspectors reviewed the following activities:

- (1) NM-1-21-00601, RB Outage Reactor Water Clean Up (RWCU) Area Activities
- (2) NM-1-21-00612, RWCU System FAC/NDE/ISI Radiological High Risk Activities

Radiation Worker Performance (IP Section 03.04) (1 Sample)

The inspectors evaluated radiation worker and radiation protection technician performance during:

- (1) Reactor water cleanup room work activities during a refueling outage

71124.08 - Radioactive Solid Waste Processing & Radioactive Material Handling, Storage, & Transportation

Radioactive Material Storage (IP Section 03.01) (2 Samples)

- (1) The inspectors evaluated the licensee's performance in controlling, labeling and securing radioactive materials.
- (2) The inspectors evaluated the licensee's performance in securing Part 37 radioactive materials and selected sealed sources.

Radioactive Waste System Walkdown (IP Section 03.02) (2 Samples)

- (1) The inspectors walked down accessible portions of the solid radioactive waste systems and evaluated system configuration and functionality.
- (2) The inspectors observed a Unit 2 resin transfer and evaluated whether the process was performed per site procedures and whether tank recirculation provided sufficient mixing.

Waste Characterization and Classification (IP Section 03.03) (2 Samples)

- (1) The inspectors evaluated the licensee's characterization and classification of radioactive waste associated with waste manifest number 19-2007.

- (2) The inspectors evaluated the licensee's characterization and classification of radioactive waste associated with waste manifest number 19-1050.

Shipment Preparation (IP Section 03.04) (1 Sample)

- (1) The sample was not able to be completed due to a radioactive shipment not being available at the time of the inspection.

Shipping Records (IP Section 03.05) (3 Samples)

The inspectors evaluated the following non-excepted radioactive material shipments through a record review:

- (1) Unit 1 Shipment Number 19-1050, UN 3321, LSA II, Class AU condensate bead resin waste.
- (2) Unit 2 Shipment Number 19-2007, UN 2916, Type B(U) container, Class B Powdex resin waste
- (3) Unit 2 Shipment Number 19-2010, UN 3321, LSA II, Class AU condensate bead resin waste

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (2 Samples)

- (1) Unit 1 (April 1, 2020 through March 31, 2021)
- (2) Unit 2 (April 1, 2020 through March 31, 2021)

BI02: RCS Leak Rate Sample (IP Section 02.11) (2 Samples)

- (1) Unit 1 (April 1, 2020 through March 31, 2021)
- (2) Unit 2 (April 1, 2020 through March 31, 2021)

71152 - Problem Identification and Resolution

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

- (1) The inspectors reviewed Exelon'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) (1 Sample)

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

- (1) IR 04413822 - Emergency Diesel Generator Output Breaker, R1032, Did Not Close During LOCA and EDG 103 Simulator Auto Initiation Surveillance Tests, on April 2 and 5, 2021

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60854 - Preoperational Testing Of An ISFSI

Preoperational Testing of an ISFSI (1 Sample)

- (1) The inspectors remotely evaluated the licensee's preoperational dry run activities involving dry cask transportation to the ISFSI pad on May 26-27, 2021, that were performed to fulfill requirements in the Certificate of Compliance (CoC) No. 1032, Amendment 3. Specifically, the inspectors remotely observed the following activities:
- Self-propelled motorized transport (SPMT) travel with the HI-TRAC transfer cask
 - HI-TRAC pick-up by the vertical cask transporter (VCT)
 - Multi-purpose canister (MPC) stack-up and transfer to the HI-STORM with the mating device
 - MPC unloading from the HI-STORM
 - HI-STORM lid installation
 - HI-STORM removal from the cask transfer pit (CTP) with the VCT
 - Placement of the HI-STORM FW MPC Storage System at the ISFSI
 - Pre-job briefings to assess the licensee's ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors
 - Simulated radiological field surveys and radiation protection coverage of transportation activities

The inspectors evaluated the licensee's preoperational dry run activities involving dry cask loading spent fuel pool (SFP) operations on June 15-16, 2021, that were performed to fulfill requirements in the Certificate of Compliance (CoC) No. 1032, Amendment 3. Specifically, the inspectors observed the following activities:

- Movement of the MPC and the HI-TRAC transfer cask into the SFP
- Fuel selection and fuel loading (using dummy fuel assemblies)
- MPC lid installation and removal of MPC/HI-TRAC from the SFP
- Pre-job briefings to assess the licensee's ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors
- Simulated radiological field surveys and radiation protection coverage of canister processing activities

INSPECTION RESULTS

ASME Section XI Subsection IWE Inservice Inspection Examination of Wetted Surfaces of Containment Not Performed in First Inspection Interval			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000220/2021002-01 Open/Closed	None (NPP)	71111.08G
<p>The inspectors identified a Green finding and associated non-cited violation (NCV) of ASME Section XI Subparagraph IWE-2412(a), "Inspection Program B" when Nine Mile Point did not perform an inspection for wetted surfaces of submerged areas (ASME Item E.1.12) at Unit 1 in the first containment inservice inspection interval which spanned between December 26, 1999, and August 22, 2009. Specifically, in 2003, Nine Mile Point (Constellation Energy) credited an April 1999 expedited examination (performed by Niagara Mohawk) to satisfy the first interval examination requirement which was not allowed by a condition in Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50.55a(g)(6)(ii)(B)(3), which stated that the expedited examinations could only be used for satisfying routine first interval examination requirements if they were performed during the first interval.</p>			
<p><u>Description:</u> As part of the 2021 NRC Inservice Inspection Activities Inspection (IP 71111.08), the inspectors reviewed the 2019 engineering evaluation for Unit 1 which dispositioned the results of the ASME Section XI IWE surface examination of the wetted surfaces of submerged areas of the torus performed during the 2019 Unit 1 refueling outage. The 2019 refueling outage was the last outage of the Unit 1 second Containment Inservice Inspection (CISI) interval, which started on August 23, 2009 and ended August 22, 2019. The results of the Unit 1 2019 examination identified relevant conditions requiring performance of an engineering evaluation, which concluded that the torus was acceptable for continued service. The inspectors determined that Nine Mile Point did not perform a required Section XI IWE examination of the wetted surfaces of submerged areas of the torus during their first CISI interval, which spanned December 26, 1999 to August 22, 2009.</p> <p>In 1996, the NRC incorporated the requirements of ASME Section XI, Subsection IWE, "Requirements for Class MC and Metallic Liners of Class CC Components of Light-Water Cooled Plants," by reference into regulations. ASME Section XI, Subsection IWE, Article 2310 directs that visual inspections shall be performed in accordance with Table IWE-2500-1. Table IWE-2500-1, item E.1.12 is "Wetted Surfaces of Submerged Areas," which encompasses the below water areas of the torus interior. ASME Section XI, Subsection IWE, Article 2412(a) states that the required inspections shall be completed during each inspection interval. Additionally, 10 CFR Part 50.55a(g)(6)(ii)(B), "Expedited Examination of Containment," required licensees to perform an expedited examination by September 9, 2001.</p> <p>Nine Mile Point (Niagara Mohawk) performed this expedited examination in April 1999 during the RFO-15 refueling outage and started the first interval of the CISI on December 26, 1999.</p> <p>In 2001, Constellation Energy acquired Nine Mile Point Units 1 and 2 from Niagara Mohawk.</p> <p>In a letter dated July 23, 2003, Nine Mile Point (Constellation Energy) informed the NRC that they were including the April 1999 RFO-15 refueling outage in the first CISI interval which</p>			

started on December 26, 1999. ASME Section XI, paragraph IWA-2420, "Inspection Plans and Schedules" contains guidance for adjusting dates for inservice intervals and periods and allows end dates for intervals and periods to be extended or reduced by as much as a year. Starting an interval early is not addressed as an option.

Title 10 CFR Part 50.55a(g)(6)(ii)(B)(3) provided guidance on how to credit expedited examinations for regularly scheduled IWE inspections. The guidance states that an expedited examination may be used to satisfy the requirement for a regularly scheduled examination if it occurred during the CISI interval. In this case, the expedited examination took place 8 months prior to the interval start date and was not allowed to be credited for the regularly scheduled examination. As a result, no examination occurred during the first CISI interval. Alternatively, an exemption request was not submitted for NRC approval to present the results of the first examination from April 1999 and the technical basis for the next proposed scheduled exam, which in this instance turned out to be more than 20 years later in August 2019.

Corrective Actions: The licensee entered this issue into the corrective action program.

Corrective Action References: IR 04433959

Performance Assessment:

Performance Deficiency: Nine Mile Point Unit 1 (Constellation Energy) did not perform an inspection for wetted surfaces of containment (ASME Item E1.12) as required by ASME Section XI Subparagraph IWE-2412(a), "Inspection Program B" in the first containment inservice inspection interval which spanned December 26, 1999 and August 22, 2009. Specifically, in July 2003, Nine Mile Point (Constellation Energy) took credit for an April 1999 expedited examination (performed by Niagara Mohawk) to satisfy the first interval examination requirement which was not allowed by a condition in 10 CFR Part 50.55a(g)(6)(ii)(B)(3), that specifically stated that the expedited examinations could only be used for satisfying routine first interval examination requirements if they were performed during the first interval.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Configuration Control attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The performance deficiency is associated with the Configuration Control attribute of the Barrier Integrity cornerstone and adversely affected the objective of providing reasonable assurance that the physical design barriers protect the public from radionuclide releases caused by accidents or events because required examinations that ensure the reliability and availability of safety related structures were not performed. Specifically, the performance deficiency resulted in no examination during the first CISI interval or as an alternative, seeking NRC approval for the next proposed examination date. As a result, the second containment inservice inspection interval examination results identified corrosion damage with remaining wall thickness in localized areas below the required minimum wall values, which were later determined to be acceptable after supplemental engineering analysis.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power" and Exhibit 3, "Barrier Integrity Screening Questions," since the finding was associated with the Barrier Integrity

cornerstone (reactor containment) and did not represent an actual open pathway in the physical integrity of reactor containment, was not a failure of containment isolation system logic or instrumentation, was not a failure of containment pressure control equipment, was not a failure of containment heat removal components, and did not involve an actual reduction in function of hydrogen igniters. Specifically, Unit 1 staff re-evaluated the examination results and showed the wetted portions of the torus were acceptable for continued service until the next scheduled examination in 2023. Therefore, the finding was determined to be of very low safety significance (Green).

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. The performance deficiency was over three years old and not indicative of current licensee performance.

Enforcement:

Violation: Title 10 CFR Part 50.55a(a)(1)(ii) states, in part, that *ASME Boiler and Pressure Vessel Code*, Section XI is incorporated by reference. ASME Section XI, paragraph IWE-2412(a) states, in part, that with the exception of the examinations that may be deferred until the end of an inspection interval, as specified in Table IWE-2500-1, the required examinations shall be completed during each successive inspection interval, in accordance with Table IWE-2412-1. ASME Section XI, Table IWE-2500-1, Item E1.12, lists wetted surfaces of submerged areas as a required examination.

Title 10 CFR Part 50.55a(g)(6)(ii)(B)(3) [2003] stated, in part, that the expedited examination for Class MC components may be used to satisfy the requirements of routinely scheduled examinations of Subsection IWE subject to IWA-2430(d) when the expedited examination occurs during the first containment inspection interval.

Contrary to the above, as of August 22, 2009, the licensee did not complete a required examination of the wetted surfaces of submerged areas during the first inspection interval that spanned December 1999 through August 22, 2009. Specifically, in 2003, the licensee credited an expedited examination of the wetted surfaces of submerged areas to satisfy the examination requirement for the first inspection interval. However, the expedited examination was completed in April 1999, which is outside of the first containment inspection interval.

Enforcement Action: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Inadequate Structural Evaluation of Effect of Corrosion on Interior Surface of Suppression Pool (Torus)			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000220/2021002-02 Open/Closed	[H.6] - Design Margins	71111.08G
The inspectors identified a Green finding and associated NCV of ASME Section XI, paragraph IWE-3122.3, "Acceptance by Engineering Evaluation," when Exelon performed an engineering evaluation that did not meet the applicable requirements in ASME Section XI, subsection IWE as required by 10 CFR Part 50.55a(g)(4)(v). Specifically, the engineering evaluation did not demonstrate that the torus wall thickness satisfied the minimum wall			

thickness requirements in their design specification through the period the evaluation applied which ends in 2023.

Description: Exelon staff performed inservice inspection examinations of wetted surfaces of containment as required by ASME Section XI, Subsection IWE during the Unit 1 2019 refueling outage (1RFO25). During underwater examination of the Unit 1 torus, divers identified a band of corrosion, described as “tiger stripe”-like corrosion on the interior surface of the wetted areas that started just below the torus water surface and extended an additional 4-6 feet down. The corrosion consisted of alternating vertical ridges of black oxide and valleys of bare metal. Divers measured the metal loss in the tiger stripe valleys using a dial depth gauge and found metal thickness losses between 10 and 70 mils. As a result, the remaining wall thickness was less than minimum wall thickness requirements in multiple localized areas. Exelon staff entered this information into their corrective action program as IR 04235565 and performed an engineering evaluation to determine if the torus was acceptable for continued service.

The inspectors determined that Exelon staff monitor general corrosion of the torus by performing annual ultrasonic thickness measurements of grids located at the bottom of seven torus bays in accordance with their torus corrosion monitoring program (TCMP). The data is evaluated annually to identify an average remaining wall thickness value for each torus bay bottom location.

The inspectors determined Exelon staff used TCMP remaining wall thickness values as an input to their engineering evaluation that accepted the torus for continued service in April 2019. The inspectors determined the engineering evaluation was qualitative and calculated an average remaining wall thickness for the torus surface areas with visual tiger stripe degradation. The evaluation used TCMP results from 2017 to be representative of the thickness at the “ridges.” The evaluation then calculated the wall thickness of the “tiger stripe valleys” by subtracting the greatest depth, 70 mils, from the ridge area thickness. Finally, the evaluation averaged the ridge and valley thicknesses to develop an overall average thickness. This average assumed the valley surface area was twice the ridge surface area. This average wall thickness was found to be 4 mils greater than the minimum wall thickness required by the torus design specification of record for side wall location. Exelon staff concluded the torus remained capable of performing its design function as the as left wall thickness was greater than the minimum wall thickness required and that sufficient design margin was available to account for decreasing wall thickness.

The inspectors identified the following inadequacies:

- Exelon staff used TCMP data from 2017 when data from 2018 and 2019 was available to calculate the “ridge” thickness in the tiger stripe surface areas. Substitution of updated data reduced the remaining calculated wall thickness margin from 4 mils to 1 mil.
- A corrosion mechanism and corrosion rate for the tiger stripe degraded surface areas was not determined to show that the remaining wall thickness remained above minimum wall requirements through the next required inspection in 2023.
- Exelon staff did not update their evaluation and validate its conclusions as annual data from the TCMP became available. The inspectors determined TCMP data taken in 2020 showed Nine Mile Point at minimum wall requirements using their evaluation method.

- The torus bay 8 intermediate area, an area described by the examiners (divers) as “*Intermediate Band or zone of corrosion exposing bare metal with rough surface texture; zone is approx. 50” high. Metal loss could not be measured due to rough, angular, surface but appears visually consistent with the tiger stripe zone*” was considered by Exelon staff to be bounded by the 2019 evaluation. The inspectors questioned this conclusion as the degree of metal loss in this area could not be quantified as there was no reference surface to perform a depth measurement.

In response, Exelon staff performed a supplemental engineering evaluation comprised of several additional calculations. The first calculation used inputs from the 2019 TCMP thickness results for the ridge surface area thicknesses. The thickness for each tiger stripe valley area was based on the “deepest” tiger stripe depth measured in 2019 for each torus bay. Exelon staff then considered the specific widths of ridges and valley areas to calculate an average remaining wall thickness torus bay by bay. The calculation showed margin to the minimum required wall thickness in 2019. Exelon staff also completed a calculation using “typical” tiger stripe valley depths verses maximum measured depth to show margin. Additionally, Exelon staff completed a forward looking calculation that applied a maximum tiger stripe surface corrosion rate for each bay to the average bay thickness and showed the wall thickness would remain above the required minimum wall thickness requirements through the next scheduled examination in 2023. Finally, Exelon staff performed ultrasonic thickness measurements in the torus bay 8 intermediate zone which showed that the remaining thickness remained close to the as built thickness and did not challenge minimum wall thickness requirements. Finally, at the end of the inspection, Exelon staff were considering corrective actions to gain thickness margin in the torus tiger stripe degraded surface areas because of the very low margin projected beyond the 2023 scheduled examination.

Corrective Actions: The licensee entered this issue into the corrective action program as IR 04435291.

Exelon staff performed a supplemental engineering evaluation based upon the 2019 IWE examination results which determined that the remaining wall thickness in the vicinity of the tiger stripe affected region would remain greater than minimum wall thickness requirements through the next required inspection during the 2023 refueling outage.

Exelon staff performed UT thickness measurements of the bay 8 intermediate zone and calculated an average remaining wall thickness value for this area.

Corrective Action References: IR 04435291, IR 04235565 (Original Evaluation), and IR 04234455 (Bay 4 Pitting Evaluation)

Performance Assessment:

Performance Deficiency: Engineering evaluation “Torus Shell 'Tiger Striping' Corrosion” (IR 04235565), dated April 4, 2019, did not meet the requirements of ASME Section XI, Subsection IWE-3122.3 to show satisfaction of thickness requirements in their design specification of record for the duration the evaluation was applicable, which is the next required exam in 2023.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control attribute of the Barrier Integrity

cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding is more than minor because it adversely affected the design control attribute of the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers of the containment to protect the public from radionuclide releases caused by accidents or events, because the evaluation of the tiger stripe corrosion observed in the torus did not show that design specification requirements related to wall thickness and the corresponding ASME Code allowable stress intensity would be met at the next required examination.

The inspectors concluded this performance deficiency resulted in a meaningful and substantive reduction of margin because the engineering evaluation of record applied outdated thickness data as an input from their TCMP as an input and the trend in TCMP data when considered, showed no available thickness margin for a large area of the torus containment barrier to the next scheduled examination. Additionally, the performance deficiency involves not addressing the rate of the tiger stripe degradation when information was available to suggest the rate was higher than the general corrosion rate developed from the licensee's TCMP. This had an adverse effect on available margin that had to be addressed in the supplemental engineering evaluation.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Exhibit 3, "Barrier Integrity Screening Questions," since the finding was associated with the Barrier Integrity cornerstone (reactor containment). The finding did not represent an actual open pathway in the physical integrity of reactor containment, was not a failure of containment isolation system logic or instrumentation, was not a failure of containment pressure control equipment, was not a failure of containment heat removal components, and did not involve an actual reduction in function of hydrogen igniters. Therefore, the finding was determined to be of very low safety significance (Green).

Cross-Cutting Aspect: H.6 - Design Margins: The organization operates and maintains equipment within design margins. Margins are carefully guarded and changed only through a systematic and rigorous process. Special attention is placed on maintaining fission product barriers, defense-in-depth, and safety related equipment. The finding had a cross-cutting aspect in the area of Human Performance, Design Margins because Exelon's engineering evaluation did not demonstrate that the margin required by the design specification of record for required wall thickness would be maintained through the next required examination in 2023.

Enforcement:

Violation: Title 10 CFR Part 50.55a(g)(4) requires, in part, that components that are classified as Class MC pressure retaining components and their integral attachments must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of the ASME BPV Code and addenda that are incorporated by reference in paragraph (a)(1)(ii) of this section. 10 CFR 50.55a(a)(1)(ii)(C)(45) references ASME BPV Code, 2004 Edition.

The Nine Mile Point Unit 1 pressure suppression chamber, or torus, is classified as ASME Code Class MC. The design specification for the torus is specified in NMP1 Calculation S0TORUSM013, "Mark I Torus Shell and Vent System Thickness Requirements." This

document specifies a torus minimum design wall thickness of 0.397 inches in the vicinity below the water line.

Contrary to the above, from April 4, 2019, until May 10, 2021, a component at Unit 1 that is classified as a Class MC pressure retaining component did not meet the requirements set forth in Section XI of ASME BPV Code, 2004 Edition, in that a component whose examination detected areas of degradation that exceeded 10 percent of the nominal wall thickness was accepted for continued service without a repair/replacement activity, and the engineering evaluation did not indicate that the areas of degradation will have no unacceptable effect on the structural integrity of the containment. Specifically, examinations of the Unit 1 torus identified areas of degradation involving tiger stripes below the water line with greater than 10 percent degradation of the torus nominal plate thickness. The torus was accepted for continued service by engineering evaluation IR 04235565 dated April 4, 2019. However, the engineering evaluation used as an input annual wall thickness data from the NMP1 Torus Corrosion Monitoring Program in 2017, which, when subsequent annual data is considered from 2018 to present, shows the thickness will not be maintained greater than the torus minimum design wall thickness of 0.397 inches for the duration the evaluation covers, which is to the next scheduled exam in Spring 2023. Additionally, the engineering evaluation did not address the rate of degradation in the tiger stripe areas to show the resulting margin in their evaluation of 4 mils (0.0004) in 2019 satisfies the minimum design thicknesses requirements in the design specification prior to the next scheduled exam in 2023.

Enforcement Action: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Maintain Radiation Exposure ALARA During N2R17			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	Green FIN 05000220,05000410/2021002-03 Open/Closed	[H.4] - Teamwork	71124.02
<p>The inspectors identified a finding of very low safety significance (Green) for the licensee having unplanned and unintended occupational collective radiation dose because of deficiencies in the licensee’s work planning and work control program. Specifically, the licensee failed to appropriately follow RP-AA-401, “ALARA Planning and Controls,” and did not follow their work-in-progress review process when tasks were not proceeding as planned with a greater than anticipated dose accrual. The resultant accumulated dose for several ALARA plans exceeded 5 person-rem and exceeded the original estimates by 50 percent because of deficiencies in the licensee’s work planning and work control program.</p>			
<p><u>Description:</u> Radiation Work Permits (RWPs) 501, 510, 511, and 520 were written to perform outage activities in the drywell during refuel outage N2R17, including operations department activities, valve maintenance and support activities, main steam safety relief valve activities, and snubber activities. The initial dose estimates for this work were 4.287 person-rem, 4.984 person-rem, 3.531 person-rem, and 4.940 person-rem respectively, but the work resulted in 7.164 person-rem, 8.178 person-rem, 7.694 person-rem, and 10.316 person-rem respectively. During 80 percent work-in-progress reviews, the dose estimates for RWPs 511 and 520 were increased to 4.502 person-rem and 6.910 person-rem respectively. Exelon identified job weaknesses in their post-job reviews and corrective action program evaluation including failure to fill main steam lines with low activity water for work around RWP 510 as described in the ALARA plan, gaps in planning and scheduling leading to longer</p>			

than expected times to perform work activities, dose estimate exceeded for RWP 501 and partially for RWP 511 due to emergent work scope, new workers unfamiliar with Nine Mile Point, poor communication between the workers and the ALARA work group, the early shutdown of Unit 2 causing mockups to not be done, poor lighting, powered air-purifying respirator (PAPR) respiratory protection requirements on the 240' elevation increased execution times, and impacted vision for work under RWP 520 and higher than estimated dose rates for several RWPs.

Based on the review, the inspectors identified that several of the above mentioned issues, including increased time due to workers being unfamiliar with the site and use of a respiratory protection are concepts that should have been fully evaluated during the planning phase. Many of these issues could have been avoided or minimized with better communication and appropriately following site procedures, including RP-AA-401-1002 and RP-AA-401. Exelon stated that higher than expected dose rates is cited as one of the reasons for increased dose, however, contrary to RP-AA-401-1002 step 4.2.4, the inspectors identified that the site did not ensure prior to the start of work that conditions and hazards were within planning assumptions in the ALARA plan and adjust accordingly. Further, contrary to RP-AA-401, "Operational ALARA Planning and Controls," the inspectors identified that the site did not enter into step 4.2.4 after the 80 percent work-in-progress reviews when tasks were not proceeding as planned with a greater than anticipated dose accrual and/or there was expanded scope not accounted for in contingent dose and could not be accommodated in the existing estimate.

Corrective Actions: Exelon's immediate corrective actions included reviewing the lessons learned in the post-job reviews following the work, and performing a corrective action program evaluation to review the N2R17 accrued dose.

Corrective Action References: 04335119

Performance Assessment:

Performance Deficiency: The inspectors determined the failure to appropriately plan and execute work in the drywell together with the failure to perform adequate and further work-in-progress reviews during refueling outage N2R17, is a performance deficiency because it was within the licensee's ability to foresee and correct and should have been prevented.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Program & Process attribute of the Occupational Radiation Safety Cornerstone and adversely affected the cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Additionally, the finding is similar to IMC 0612, Appendix E, dated December 10, 2020, Example 6.i. Specifically, the actual collective dose exceeded 5 person-rem and exceeded the planned, intended dose by more than 50 percent.

Significance: The inspectors assessed the significance of the finding using Appendix C, "Occupational Radiation Safety SDP." The inspectors determined that this finding was of very low safety significance (Green) because the performance deficiency did not result in Exelon's current 3-year average collective dose exceeding 240 person-rem.

Cross-Cutting Aspect: H.4 - Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. The work process was not effective at including input from the workers

and the ALARA group during work-in-progress reviews and did not initiate further work-in-progress reviews when accumulated dose was to go beyond the dose estimate. This mismatch between the planned, intended dose and the actual dose that resulted from completing the work activity is an indication of a possible program weakness.

Enforcement: Inspectors did not identify a violation of regulatory requirements associated with this finding.

Failure to Follow Complex Troubleshooting Process

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green FIN 05000220,05000410/2021002-04 Open/Closed	[P.5] - Operating Experience	71152

The inspectors identified a finding of very low safety significance (Green) because Exelon did not follow their complex troubleshooting process in procedure MA-AA-716-004, "Conduct of Troubleshooting," following the failure of EDG 103 output circuit breaker, R1032, to close on April 2 and 5, 2021. Specifically, Exelon failed to both perform a thorough as-found investigation related to the breaker malfunction and incorporate industry operating experience in their failure mode causal tree (FMCT) process to adequately identify and refute all failure modes in the breaker closing circuit logic.

Description: Safety-related circuit breakers are relied upon to provide reasonable assurance that emergency equipment will operate when called upon to respond to an accident. Nine Mile Point Unit 1 utilizes safety-related 4160-volt General Electric (GE) Magne-Blast breakers (breakers) to supply power to safety-related equipment including emergency buses (103 and 102). These breakers rely upon multiple components to perform their safety functions. During maintenance activities, the breakers can be removed from their cubicles (racked out) for safety. At the completion of maintenance activities, the breakers are installed in their cubicles (racked in).

Exelon uses procedure MA-AA-716-004 to determine the direct cause of a plant system, component, or sub-component failure or degradation. Procedure MA-AA-716-004 defines troubleshooting as a systematic approach to test and/or measurement planning and data collection that results in high confidence that the cause of a system, component, and/or sub-component failure or degradation has been determined and normal operation will be restored upon resolution of the failure/degradation cause. Exelon uses the procedure to identify and preserve initial conditions (as-found data), determine a problem statement describing the details, timing, and effects, and then identify and assess the potential cause(s) of the failure using a developed plan. The procedure provides graduated guidance, based on the complexity and operational risk involved, and details the process for simple, focused, and complex troubleshooting.

Exelon performed complex troubleshooting in accordance with MA-AA-716-004 to determine the cause of the R1032 breaker failure to close on April 2 and 5, 2021. Troubleshooting activities continued until the successful completion of N1-ST-R2B, LOCA and EDG 103 Simulated Auto Initiation Test, and the operators declaring the EDG 103 operable on April 8, 2021. Exelon developed plans to assess potential causes of the failures using an FMCT. At the time of the satisfactory April 8 surveillance, Exelon had evaluated and refuted all but two failure modes, the EDG 103 Field Flash Cutoff Relay (31D-X) and the R1032 secondary disconnect contacts. The 31D-X was later eliminated as a cause based on failure analysis testing. Although no confirmed cause was determined, the last remaining failure

mode of the FMCT focused on the secondary disconnect contacts and Exelon ultimately determined that the “probable cause” of the breaker failure to close was high resistance of the secondary disconnect contacts. Because Exelon failed to confirm a failed component per the complex troubleshooting process, a risk assessment was performed to identify and manage the associated risk.

The inspectors reviewed the troubleshooting activities and determined that Exelon did not perform an as-found investigation of the breaker prior to disturbing possible evidence pointing to the cause of the failure, as required by Step 4.2.1 which states, “A thorough, documented, visual inspection of the as-found conditions shall be made prior to disturbing installed equipment or components to ensure that evidence pointing to the cause of a failure is not destroyed or lost.” Steps 4.3.1, and 4.5.6.1 of the troubleshooting procedure also require the preservation and investigation of as-found conditions. Exelon’s evaluation determined that it was during the racking in of the breaker that the failure was introduced. However, the inspectors determined that on two instances, after each breaker failure-to-close event, the operators racked out the breaker without performing as-found testing (e.g., resistance readings). The inspectors concluded that this sequence of troubleshooting activities could mask breaker closing logic component degradation and prevent the identification of the cause of the breaker to fail to perform its safety function.

The inspectors also noted that Exelon did not consider all failure modes associated with racking the breaker in. They limited the potential cause of this failure mode to be associated with the secondary disconnect contacts and did not consider, for example, the GE microswitch interlock switch (52IS) as a potential cause. As a result, Exelon failed to perform troubleshooting to refute the 52IS as a potential cause in accordance with MA-AA-716-004, Step 4.5.3, which states to search operating experience to identify additional troubleshooting information applicable to current failure symptoms. This information is then to be included to determine potential failures and develop troubleshooting activities as stated in Step 4.6. Operating experience exists that demonstrates vulnerabilities with GE microswitches since the mid-1990’s. NRC Information Notice (IN) 1995-02, IN 1997-08, and GE Service Advise Letter (SAL) 361.1 Revision 1, for example, detail concerns with the GE microswitches. Additionally, in Fall 2014, Exelon performed an evaluation, in ECP-2014-00797, to allow the use of an alternate to the GE microswitches because documentation provided by the manufacturer (including GE SAL 361.1, Revision 1) stated the GE microswitches were obsolete and electrical control circuit problems due to these switches had become a major concern. The inspectors determined that Exelon did not adequately consider the above operating experience in accordance with Step 4.5.3 because the 52IS was not considered a potential cause, even though the equipment response would be the same for deficiencies with the secondary disconnect contacts and 52IS.

Based on the above, the inspectors determined that Exelon did not follow their complex troubleshooting procedure to both perform an as-found investigation and include industry operating experience in their FMCT process to refute the components in the breaker closing logic. The inspectors also determined that Exelon did not identify this failure to follow the troubleshooting process. As a result, if not evaluated, Exelon’s future investigation of degraded breakers could fail to identify a conclusive cause.

Corrective Actions: Issue Report 04413822 was generated to capture the issues with the EDG 103 R1032 breaker and to evaluate the cause. Within IR 04413822, Exelon did not identify an inadequacy with the troubleshooting process. However, IR 04419576 was generated to review and critique this troubleshooting, and gaps within troubleshooting were

identified associated with organizational effectiveness, knowledge transfer, and documentation. Additionally, as a result of the inspectors' review, IR 04434797 was generated because the EDG 103 was not quarantined as directed by the troubleshooting procedure.

Corrective Action References: IR 04413822, 04419576, and 04434797

Performance Assessment:

Performance Deficiency: The inspectors determined that Exelon did not follow their troubleshooting procedure, MA-AA-716-004, which is considered a performance deficiency because it was reasonably within Exelon's ability to foresee and correct and should have been prevented. Specifically, Exelon failed to both perform an as-found investigation to determine the cause of the failure and to include industry operating experience in their FMCT process to refute some of the components in the breaker closing logic as potential failure modes.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Human Performance 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, the failure to ensure as-found testing is performed adequately could lead to the failure to identify equipment deficiencies that could impact mitigating system reliability. The performance deficiency was evaluated against IMC 0612, Appendix E, "Examples of Minor Issues," dated December 10, 2020. The inspectors determined this issue is similar to examples 13.a and 5.a. Specifically, absent NRC's intervention, the licensee's failure to establish and perform as-found testing of failed circuit breakers can lead to the masking of component deterioration and potential failures of 4160-volt GE Magne-Blast breakers to perform their safety-related functions. The licensee did not identify the performance deficiency during testing or evaluation and did not initiate corrective actions to ensure the troubleshooting process as-found testing of failed breakers is performed in the future and industry operating experience is included to assess the failure.

Significance: The inspectors assessed the significance of the finding using Appendix G, "Shutdown Safety SDP." IMC 0609 Attachment 4, "Initial Characterization of Findings" screening routes the finding to IMC 0609 Appendix G, "Shutdown Operations Significance Determination Process." Inspectors used IMC 0609, Appendix G, Attachment 1, Exhibit 3 and determined the finding screened to Green because the EDG 103 was declared operable following a successful completion of the surveillance requirement.

Cross-Cutting Aspect: P.5 - Operating Experience: The organization systematically and effectively collects, evaluates, and implements relevant internal and external operating experience in a timely manner. Contrary to the above, the inspectors determined Exelon did not effectively involve internal and external operating experience to evaluate and resolve issues with the twice-failed EDG 103 surveillance. Inspectors noted that the initial, primary troubleshooting focus was on investigating potential diesel generator voltage regulator failure modes because EDG 103 only reached approximately 3,000 volts alternating current, but internal operating experience demonstrates that this is the expected response when the output breaker does not close. Also, inspectors determined that external operating experience demonstrates there are other potential causes for the breaker to fail to close that were not considered during the FMCT process.

Enforcement: Inspectors did not identify a violation of regulatory requirements associated

with this finding.

Minor Violation

71152

Minor Violation: Inspectors identified a minor violation against 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when the licensee failed to adequately prescribe activities affecting quality by documented procedures of a type appropriate to the circumstances and including quantitative or qualitative acceptance criteria. Specifically, the licensee failed to prescribe adequate acceptance criteria in procedure N1-OP-30, "4.16 KV, 600V AND 480V HOUSE SERVICE," Section F.8, "Racking In 4160 Volt Breakers," to ensure operators fully make up the secondary disconnect contacts during circuit breaker racking in.

Exelon uses N1-OP-30 for normal and off-normal activities pertaining to AC distribution operations. As part of the procedure, directions are provided for racking in and racking out a circuit breaker to ensure proper operation of the breaker. Step F.8.7 states, "Verify Aux contacts fully made up."

Operators racked in the breaker on April 2 and again on April 5 using N1-OP-30 in preparation for the performance of N1-ST-R2B. Based on Exelon's CAPE, the racking in of the breaker on both dates was unsuccessful. In accordance with the N1-OP-30 procedure, the breaker is to be fully made up. However, the inspectors identified that during racking in of the breaker no written instructions are provided to determine if the breaker is fully made up and can adequately cycle and perform its function. Additionally, the breaker is not subsequently cycled for post-maintenance test verification. The inspectors noted that the licensee relied on the performance of the N1-ST-R2B procedure to verify the breaker could cycle.

Issue Report 04413822 was generated to capture the issues with the EDG 103 R1032 breaker and to evaluate the cause. As shown in IR 04413822, Exelon did not identify that an inadequate procedure led to the failure. Exelon stated that there were "no HU [(human performance)] or O&P issues identified for this equipment failure." Instead, Exelon made changes to N1-OP-30 to include validating the secondary disconnect contacts are made up and to better align with the Nine Mile Point Unit 2 procedure, which Exelon only classified as an enhancement.

Screening: The inspectors determined the performance deficiency was minor because the issue did not adversely affect the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Inspectors noted that the EDG 103 remained inoperable throughout the maintenance window and technical specifications did not require the EDG 103 to be operable during cold shutdown conditions. The inspectors used examples in IMC 0612, Appendix E, effective January 1, 2021, to determine whether the performance deficiency was more than minor. Similar to Example 4.c, the performance deficiency was minor because the EDG 103 was not returned to service prior to retesting.

Enforcement: This failure to comply with 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

Observation: IR 04413822 - Emergency Diesel Generator Output Breaker, R1032, Did Not Close During LOCA and EDG 103 Simulator Auto Initiation Surveillance Tests, on April 2 and 5, 2021	71152
<p>In April 2021, during a scheduled refueling outage, Unit 1 failed two simulated loss of coolant accident and emergency diesel generator 103 auto initiation tests in accordance with N1-ST-R2B, "LOCA and EDG 103 Simulated Auto Initiation Test." Exelon generated IRs 04413822 and 04415412 to document the conditions adverse to quality. Exelon entered complex troubleshooting to identify and resolve the cause of the failures in accordance with MA-AA-716-004, "Conduct of Troubleshooting." Exelon also performed a corrective action program evaluation (CAPE) within IR 04413822. The inspectors reviewed the test work orders, troubleshooting activities, and CAPE to verify the actions were reasonable and commensurate with the safety significance.</p> <p>On April 2, 2021, while operators were performing N1-ST-R2B, EDG 103 output breaker R1032 did not close on emergency bus 103 as expected. Operators began troubleshooting in accordance with MA-AA-716-004. Due to the extensive investigation and engineering analysis needed, Exelon entered the most rigorous troubleshooting process, complex troubleshooting, which included compiling a failure mode causal tree (FMCT) to determine the cause of the failures. Following the replacement of parts identified during troubleshooting as potential contributors to the failure, on April 5, 2021, operators again performed N1-ST-R2B and EDG 103 output breaker R1032 did not close on emergency bus 103 as expected. Following further troubleshooting, on April 8, 2021, operators successfully performed N1-ST-R2B and declared EDG 103 operable. Due to the two failures, the EDG 103 remained inoperable and unavailable longer than planned and Exelon stated these failures resulted in a 68-hour extension to the refueling outage.</p> <p>Exelon performed a CAPE within their corrective action program to assess the failure and establish corrective actions. Within the CAPE, Exelon stated that the most probable cause is "high resistance of the EDG 103 Output Breaker secondary disconnects that first occurred during N1R26 maintenance window restoration breaker racking." However, the inspectors determined Exelon failed to identify a cause of the high resistance of the secondary disconnect contacts within the CAPE.</p> <p>As a result of the review, the inspectors concluded the evaluation and corrective actions to be inadequate. The inspectors identified two performance deficiencies, one of which involves an NRC regulation. The details are included in the Results section of this inspection report.</p>	

Observation: Semi-Annual Trend Review	71152
<p>The inspectors evaluated a sample of issues and events that occurred from January 2021 through June 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.</p> <p>The inspectors identified a minor performance deficiency when Exelon failed to classify an equipment deficiency as an Operator Work-Around (OWA) in accordance with procedure OP-AA-102-103, "Operator Work-Around Program." Normally open manual valve 93-65 in loop 11 of the containment spray raw water system was closed on March 16, 2021, following a failed reverse flow test of downstream check valve 93-58. The inspectors determined Exelon failed to follow Step 2.1 of OP-AA-102-103 because manual valve 93-65 would be required to be opened to respond to an event. Following an accident, this would require an</p>	

operator to enter an increased radiological area to perform a compensatory action to comply with emergency procedures. This meets the definition of an OWA, but the condition was not designated one. Check valve 93-58 was restored to operable status following corrective maintenance the week of June 28, 2021. Manual valve 93-65 was subsequently returned to its normally open position, removing the OWA. This issue is similar to an OWA observation the inspectors documented in Section 71152 of NRC Inspection Report 05000410/2020003. In that case, operators isolated an emergency service water to spent fuel pool inlet isolation valve, 2SWP*V245B, after a deficiency was identified with an in-line valve.

The inspectors did not identify any new trends that could indicate a more significant safety issue. The inspectors also noted potential adverse trends identified by Exelon staff in the areas of lowering reactor recirculation pump motor oil level, increasing service water strainer differential pressures, and diesel fuel quality. The inspectors independently evaluated the OWA and other reviewed deficiencies for significance in accordance with the guidance in IMC 0612, Appendix B, "Issue Screening," and Appendix E, "Examples of Minor Issues." These conditions were of minor significance and, therefore, are not subject to enforcement action in accordance with the NRC's Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

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

- On July 26, 2021, the inspectors presented the integrated inspection results to Mr. Peter Orphanos, Site Vice President, and other members of the licensee staff.
- On April 2, 2021, the inspectors presented the radiation hazard assessment and occupational ALARA controls (partial) inspection results to Mr. Peter Orphanos, Site Vice President, and other members of the licensee staff.
- On May 27, 2021, the inspectors presented the independent spent fuel storage installation dry run inspection results to Mr. Adam Schuerman, Plant Manager, and other members of the licensee staff.
- On June 16, 2021, the inspectors presented the independent spent fuel storage installation dry run inspection results to Mr. Chris Giambrone, Director Site Operations, and other members of the licensee staff.
- On June 25, 2021, the inspectors presented the radiation protection, and radwaste and transportation inspection results to Mr. Peter Orphanos, Site Vice President, and other members of the licensee staff.
- On June 29, 2021, the inspectors presented the inservice inspection results to Mr. Peter Orphanos, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
60854	Procedure	HPP-2846-200	MPC Loading	
60854	Procedures	HPP-2846-400	HI-TRAC Transfer Stack-up and MPC Download	F
60854	Procedures	HPP-2846-500	HI-STORM Movements	
71111.01	Corrective Action Documents	04005154		
71111.01	Corrective Action Documents	04148743		
71111.01	Corrective Action Documents	04244782		
71111.01	Corrective Action Documents	04344839		
71111.01	Corrective Action Documents	04423089		
71111.01	Procedures	N2-MPM-GEN-A016	Probable Maximum Precipitation (PMP) Flood Berm and 10,000 Year Culvert Inspection	00301
71111.04	Drawings	C-18005-C	Feed Water Flow High Pressure P & I Diagram	53
71111.04	Drawings	C-18007-C	Reactor Core Spray P&ID	64
71111.04	Drawings	C-18008-C	Spent Fuel Storage Pool Filtering and Cooling System P & I Diagram	45
71111.04	Drawings	C-18012-C, Sheet 1	Reactor Containment Spray Raw Water System	26
71111.04	Drawings	C-18012-C, Sheet 2	Reactor Containment Spray System	47
71111.04	Procedures	N1-OP-14	Containment Spray System	04800
71111.04	Procedures	N1-OP-16	Feedwater System Booster Pump to Reactor	07000
71111.04	Procedures	N1-OP-2	Core Spray System	03900
71111.04	Procedures	N1-OP-6	Fuel Pool Filtering and Cooling System	03100
71111.05	Miscellaneous	NMP Fire Drill Record	U2 Screenhouse motor driven fire pump room, FZ805N2	06/08/2021
71111.05	Miscellaneous	OP-AA-201-003, Attachment 3	Fire Drill Scenario, Unit 2 Screenhouse Electric Driven Fire Pump Room	06/08/2021
71111.05	Procedures	N1-FPM-FPE-M005	Fire Protection Monthly Inspection	00800
71111.05	Procedures	N1-PFP-0101	Unit 1 Pre-Fire Plans	00600
71111.05	Procedures	OP-AA-201-003	Fire Drill Performance	19

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.07A	Corrective Action Documents	02007473		
71111.07A	Corrective Action Documents	04426388		
71111.07A	Miscellaneous	NER-2M-029	Heat Exchanger Tube Information (Input to DER-2-97-2929)	03
71111.07A	Procedures	ER-AA-340-1002	Attachment 1, Division III Diesel Generator Jacket Water Cooler HX Inspection Report	06/01/2021
71111.07A	Work Orders	C93791725		
71111.08G	Calculations	S0TORUSM013	Mark I Torus Shell & Vent System Thickness Requirements - TR-6801-2	0
71111.08G	Corrective Action Documents	04235565		
71111.08G	Corrective Action Documents Resulting from Inspection	04433959		
71111.08G	Corrective Action Documents Resulting from Inspection	04435291		
71111.08G	Miscellaneous		American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components	2004 Edition with no addenda
71111.08G	Miscellaneous	NMP1L 1748	Submittal of Inservice Inspection Owners Activity Reports	07/23/2003
71111.08G	Procedures	CPR-N1-T-001	Torus Corrosion Monitoring Program	5
71111.08G	Procedures	S22.4WW198STAT04	Torus Wall Thinning Analysis	28.0
71111.11Q	Miscellaneous	Reactivity Maneuver Plan	NM1C25-SU	0
71111.11Q	Procedures	N1-OP-43A	Plant Startup	05100
71111.11Q	Procedures	N2-OP-29	Reactor Recirculation System	03200
71111.11Q	Procedures	N2-SOP-29	Sudden Reduction in Core Flow	01700
71111.12	Corrective Action Documents	04231506		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.12	Corrective Action Documents	04232472		
71111.12	Miscellaneous		Medium Voltage Circuit Breaker Performance-Centered Maintenance Preventive Maintenance Template	09/18/2018
71111.12	Miscellaneous	NER-IS-045	Coating Inspections of the Primary Containment (Drywell) Inside Surfaces and the Torus, Torus Vent Piping and Ring Header	7
71111.12	Miscellaneous	NRC Information Notice No. 95-02	Problems With General Electric CR2940 Contact Blocks in Medium-Voltage Circuit Breakers	01/17/1995
71111.12	Miscellaneous	NRC Information Notice No. 97-08	Potential Failures of General Electric Magne-Blast Circuit Breaker Subcomponents	03/12/1997
71111.12	Miscellaneous	NRC Information Notice No. 99-13	Insights from NRC Inspections of Low- and Medium-Voltage Circuit Breaker Maintenance Programs	04/29/1999
71111.12	Procedure	ER-AA-200	Preventive Maintenance Program	5
71111.12	Procedures	ER-AA-200-1004	PCM Templates	1
71111.12	Procedures	N1-EPM-GEN-150	4.16KV Breaker Inspection P.M.	01800
71111.12	Procedures	N2-EPM-GEN-550	GE 4.16KV Magne-Blast Breaker P.M.	00900
71111.15	Corrective Action Document	0440950 04413485		
71111.15	Corrective Action Documents	04415656		
71111.15	Corrective Action Documents	04413031		
71111.15	Corrective Action Documents	04413071		
71111.15	Corrective Action Documents	04415668		
71111.15	Corrective Action Documents Resulting from Inspection	04435353	Benchmark performed on Operator Work-Around Program	
71111.15	Miscellaneous	Operability Evaluation ENGDOC-21-000006	Reactor Vessel Instrumentation	0000
71111.15	Miscellaneous	SDBD-305	Reactor Vessel Level Instrumentation System Design	06

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Basis Document	
71111.15	Procedures			
71111.15	Procedures	EOP-RPV (1-2)	RPV Control for Modes 1 and 2	00000
71111.15	Procedures	N1-EOP-1	NMP1 EOP Support Procedure	01900
71111.15	Procedures	N1-OP-47A	125VDC Power System	03200
71111.15	Procedures	N1-ST-DO	Daily Checks	04700
71111.15	Procedures	OP-AA-102-103	Operator Work-Around Program	4
71111.15	Work Orders	C93702096		
71111.18	Work Orders	C93684059		
71111.19	Corrective Action Documents	04412290		
71111.19	Corrective Action Documents	04427784		
71111.19	Corrective Action Documents	04412290		
71111.19	Corrective Action Documents	04413017		
71111.19	Corrective Action Documents	04413156		
71111.19	Corrective Action Documents	04413938		
71111.19	Corrective Action Documents	04427161		
71111.19	NDE Reports	BOP-VT-21-025		
71111.19	Procedures	N1-EPM-GEN-124	Electromatic Solenoid Inspection	0088T1
71111.19	Procedures	N1-MFT-117	Electrical Pressure Regulator Transient Test	000400
71111.19	Procedures	N1-MFT-138	MOOG Valve Servo Amplifier Modification Acceptance Testing	00000
71111.19	Procedures	N1-RCSP-GEN-334	Operating Cycle Calibration for Loss and Degraded Voltage Relays on Emergency Switchgear	00600
71111.19	Procedures	N1-RCSP-GEN-335	Functional Test of 4.16KV Emergency Bus Loss and Degraded Voltage Relays	00100
71111.19	Procedures	N1-ST-Q1A	CS 111 Pump, Valve and SDC Water Seal Check Valve Operability Test	02200

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.19	Procedures	N1-ST-R11	Valve Remote Position Indicator Verification	02100
71111.19	Procedures	N1-ST-R30	Reactor Pressure Vessel and ASME Class 1 System Leakage Test	01800
71111.19	Work Orders	C93626301		
71111.19	Work Orders	C93705688		
71111.19	Work Orders	C93713089		
71111.19	Work Orders	C93713400		
71111.19	Work Orders	C93713979		
71111.19	Work Orders	C93766514		
71111.19	Work Orders	C93786127		
71111.19	Work Orders	C93792145		
71111.19	Work Orders	C93792501		
71111.20	Procedures	LS-AA-119	Fatigue Management and Work Hour Limits	15
71111.20	Procedures	N1-PM-34B	Reactor Cavity Drain Down	00000
71111.22	Corrective Action Document	04413323		
71111.22	Corrective Action Documents	04413822		
71111.22	Corrective Action Documents	04414708		
71111.22	Procedures	N1-ST-C1B	Liquid Poison System 12 Functional Test Using Demineralized Water with Squib Valve Plugs Removed	00000
71111.22	Procedures	N1-ST-M4B	Emergency Diesel Generator 103 and PB 103 Operability Test	02600
71111.22	Procedures	N1-ST-R12	Initiation of ECS [emergency condensers] from RSP [remote shutdown panel] 11 and 12 Operability Test	01000
71111.22	Procedures	N1-ST-R2B	LOCA and EDG 103 Simulated Auto Initiation Test	00400 and 00500
71111.22	Procedures	N1-ST-TYC-001	MSIV Type C Leak Rate Tests	00300
71111.22	Procedures	N2-OSP-CSH-Q@002	HPCS Pump and Valve Operability and System Integrity Test	01000
71111.22	Procedures	N2-OSP-CSL-Q@002	LPCS Pump and Valve Operability and System Integrity	01500
71111.22	Work Orders	C93713189		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.22	Work Orders	C93713269		
71111.22	Work Orders	C93748866		
71111.22	Work Orders	C93750939		
71111.22	Work Orders	C93751067		
71124.01	Procedures	RP-AA-460	Controls for High and Locked High Radiation Areas	38
71124.01	Radiation Work Permits (RWPs)	NM-1-21-00601	RB Outage Reactor Water Cleanup (RWCU) Area Activities	00
71124.01	Radiation Work Permits (RWPs)	NM-1-21-00612	RWCU System FAC/NDE/ISI Radiological High Risk Activities	00
71124.02	ALARA Plans	2020-2-001	N2R17 Drywell Operations Activities	27
71124.02	ALARA Plans	2020-2-010	DW Main Steam Safety Relief Valve	27
71124.02	ALARA Plans	2020-2-011	N2R17 DW Valve Maintenance and Support Activities	27
71124.02	ALARA Plans	2020-2-020	N2R17 Outage DW Snubber Activities	27
71124.02	ALARA Plans	2021-1-031	N1R26 - RWCU HTX Room Flow Accelerated Corrosion (FAC)	02/25/2021
71124.02	ALARA Plans	2021-1-032	N1R26 Rx BLDG Outage Reactor Water Clean Up (WCS) Area Activities	02/25/2021
71124.02	Procedures	RP-AA-401	Operational ALARA Planning and Controls	28
71124.02	Self-Assessments	04335119	N2R17 CRE failed to meet established goals	5
71124.08	Procedures	N2-WHP-4	Waste Transfer Procedure	02300
71124.08	Procedures	RW-AA-100	Process Control Program For Radioactive Waste	12
71124.08	Shipping Records	19-1050	Cask with Condensate Bead Resin Liner U1-19-001	01/27/2021
71124.08	Shipping Records	19-2007	Cask with Unit 2 Powdex Resin Liner U2-19-003	08/20/2019
71124.08	Shipping Records	19-2010	Cask with Unit 2 Condensate Bead Resin Liner	04/26/2021
71151	Miscellaneous	NEI 99-02	Regulatory Assessment Performance Indicator Guideline	7
71151	Procedures	LS-AA-2090	Monthly Data Elements for NRC ROP Indicator - Reactor Coolant System (RCS) Specific Activity	5
71151	Procedures	LS-AA-2100	Monthly Data Elements for NRC Reactor Coolant System (RCS) Leakage	6
71151	Procedures	N1-ST-DO	Daily Checks	04600
71151	Procedures	N1-ST-SO	Shift Checks	03000
71151	Procedures	N2-OSP-LOG-S001	Shift Checks - Mode 1	03800
71152	Corrective Action	04413822		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents			
71152	Corrective Action Documents	04414111		
71152		04415412		
71152	Corrective Action Documents Resulting from Inspection	04434797		
71152	Engineering Changes	ECP-14-000797		
71152	Procedures	MA-AA-716-004	Conduct of Troubleshooting	
71152	Procedures	N1-ARP-A5	Control Room Panel A5	01500
71152	Procedures	N1-OP-30	4.16 KV, 600V and 480V House Service	04900
71152	Procedures	N1-ST-R2B	LOCA and EDG 103 Simulated Auto Initiation Test	00500
71152	Procedures	N2-OP-71B	4.16KV AC Power Distribution	00500
71152	Procedures	OU-NM-103-101	Shutdown Safety Management Program	00400
71152	Work Orders	C93513186		