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

May 5, 2020

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000352/2020001 AND 05000353/2020001 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION INSPECTION REPORT 07200065/2020001

Dear Mr. Hanson:

On March 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Limerick Generating Station, Units 1 and 2. On April 17, 2020, the NRC inspectors discussed the results of this inspection with Mr. Frank Sturniolo, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

One Severity Level IV violation without an associated finding is documented in this report. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

No NRC-identified or self-revealing findings were identified during this inspection.

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 Limerick Generating 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,

X /RA/

Signed by: Jonathan E. Greives

Jonathan E. Greives, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Nos. 05000352, 05000353,
and 07200065
License Nos. NPF-39 and NPF-85

Enclosure:
As stated

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SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000352/2020001 AND 05000353/2020001 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION INSPECTION REPORT 07200065/2020001 DATED MAY 5, 2020

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000352, 05000353, and 07200065
License Numbers:	NPF-39 and NPF-85
Report Numbers:	05000352/2020001, 05000353/2020001, and 07200065/2020001
Enterprise Identifier:	I-2020-001-0056 I-2020-001-0131
Licensee:	Exelon Generation Company, LLC
Facility:	Limerick Generating Station, Units 1 and 2
Location:	Sanatoga, PA 19464
Inspection Dates:	January 1, 2020 to March 31, 2020
Inspectors:	H. Anagnostopoulos, Senior Health Physicist S. Haney, Resident Inspector J. Nicholson, Senior Health Physicist J. Patel, Senior Resident Inspector S. Rutenkroger, Senior Reactor Analyst J. Schoppy, Senior Reactor Inspector A. Turilin, Reactor Inspector
Approved By:	Jonathan E. Greives, Chief Reactor Projects Branch 4 Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Limerick Generating 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

Multiple Trains of RHRSW Spray Network Piping Inoperable Due to Pipe Corrosion			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Not Applicable	NCV 05000352,05000353/2020001-01 Open/Closed	Not Applicable	71153
A self-revealed Severity Level IV non-cited violation (NCV) of Unit 1 and Unit 2 Technical Specification 3.7.1.1 was identified when four spray pond spray network trains were declared inoperable. Specifically, the 18-inch distribution piping in each network train was determined to be below minimum wall thickness.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000352/2019-001-00	LER 2019-001-00 for Limerick, Unit 1, Multiple Trains of RHRSW Inoperable for Greater than Time Allowed by Technical Specifications due to Pipe Corrosion	71153	Closed
LER	05000353/2017005-00	Retraction of Licensee Event Report 2017-005-00, Condition Prohibited by TS due to Non-Conservative APRM and Control Rod Block Setpoints	71153	Closed

PLANT STATUS

Unit 1 began the inspection period near rated thermal power in coastdown. On March 27, 2020, the unit was down powered and then shut down on March 28, 2020, for a planned refueling outage.

Unit 2 operated at or near rated thermal power for the entire 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/readingrm/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." From January 1 – March 19, 2020, the inspectors performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." 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 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 and during that time conducted plant status activities as described in IMC 2515, Appendix D; and observed risk significant activities when warranted. In addition, resident and regional baseline inspections were evaluated to determine if all or 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 the cases where it was determined the objectives and requirements could not be performed remotely, management elected to postpone and reschedule the inspection to a later date.

REACTOR SAFETY

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 1 reactor core isolation cooling system during high pressure coolant injection system maintenance on January 6, 2020
(2) Unit common '101' transformer, bus, and switchgear on February 4, 2020
(3) Unit common 'A' emergency service water loop on March 19, 2020
(4) Unit 1 residual heat removal system in shutdown cooling alignment on March 25, 2020

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 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) Fire area 85, Unit 2 'D22' emergency diesel generator and fuel and lube oil tank room on January 28, 2020
(2) Fire area 94, Unit 1 reactor feedwater pump compartments, auxiliary equipment and piping, and control panel areas on February 6, 2020
(3) Fire area 26, Unit common remote shutdown room due to fire risk blue condition for ‘B’ emergency service water maintenance on March 4, 2020
(4) Fire area 20, Unit 1 static inverter room and fire area 21, Unit 2 static inverter room on March 11, 2020
(5) Fire area 22, Unit 1 cable spreading room and fire area 23, Unit 2 cable spreading room on March 11, 2020

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

(1) The inspectors observed and evaluated licensed operator performance in the Control Room during the shutdown of Unit 1 for a planned refueling outage on March 27, 2020

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

(1) The inspectors observed and evaluated licensed operator requalification training on January 13, 2020

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

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 and Unit 2 spray pond network spray piping replacement on February 5, 2020

Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure the following SSC remains capable of performing its intended function:

(1) Unit common hydraulic control unit scram solenoid pilot valve fuse failures on November 5, 2019

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 high pressure coolant injection system planned maintenance on January 7, 2020
(2) Unit 2 high pressure coolant injection flow controller tuning and pump, valve, and flow test on January 8, 2020
(3) Unit 1 reactor core isolation cooling steam inlet valve backseating on January 23, 2020
(4) Unit 2 high pressure coolant injection pump suction low pressure trip calibration and functional test on January 23, 2020

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (6 Samples)

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

(1) Unit 1 turbine control valve #1 fast acting solenoid failed to actuate on December 22, 2019
(2) Unit 2 reactor core isolation cooling system barometric condenser condensate pump failed on January 16, 2020
(3) Unit 1 high total core flow indication on January 29, 2020
(4) Unit 1 high pressure coolant injection condensate storage tank test return valve stem nut disengaged on February 4, 2020
(5) Unit common ‘A’ loop emergency service water check valve (011-0063) reverse flow exceeding greater than allowable in-service inspection reverse leakage on March 16, 2020
(6) Unit 1 fuel defect adverse condition monitoring and contingency plan on March 18, 2020

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 high pressure coolant injection planned system maintenance on January 8, 2020
(2) Unit 1 ‘D12’ emergency diesel generator replacement of pressure control valve (PCV-92-1316B) to air temperature control on January 9, 2020
(3) Unit 1 ‘B’ loop core spray system operation and valve strokes following planned maintenance on February 19, 2020

(4) Unit common emergency service water check valve (011-0063) corrective maintenance on March 24, 2020

71111.20 - Refueling and Other Outage Activities

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

(1) (Partial)
The inspectors evaluated Unit 1 refueling activities from March 28 to March 31, 2020

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (3 Samples)

(1) Unit 2 'D22' emergency diesel generator fuel oil storage and transfer system pressure decay test on January 9, 2020
(2) Unit 1 'D12' emergency diesel generator 24 hour endurance run on February 4 and 5, 2020
(3) Unit 1 '1D' residual heat removal (RHR) to shutdown cooling crosstie valve test on March 3, 2020

Inservice Testing (IP Section 03.01) (1 Sample)

(1) Unit common, 'A' loop emergency service water pump, valve, and flow test on March 17, 2020

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

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

(1) (Partial)
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 Partial)

(1) (Partial)
The inspectors evaluated radiological protection-related instructions to plant workers

Contamination and Radioactive Material Control (IP Section 03.03) (1 Partial)

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

(1) (Partial)
The inspectors reviewed the criteria for the survey and release of personal items, and evaluated the physical and programmatic controls for materials stored in storage pools

Radiological Hazards Control and Work Coverage (IP Section 03.04) (1 Partial)

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

(1) (Partial)
The inspectors monitored pre-job briefings for control rod drive mechanism removal and the removal and cutting of local power range monitors. The inspectors reviewed radiological surveys and documentation associated with repairs to the outboard main steam isolation valves

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (1 Partial)

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

(1) (Partial)
The inspectors reviewed procedures and procedure changes for adequacy of access controls

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

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

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

Radioactive Material Storage (IP Section 02.01) (1 Sample)

The inspectors evaluated radioactive material storage.

(1) The inspectors observed radioactive waste container storage areas and verified the postings and controls and that licensee had established a process for monitoring the impact of long-term storage of the waste.

Radioactive Waste System Walkdown (IP Section 02.02) (1 Sample)

The inspectors evaluated the following radioactive waste processing systems [and processes] during plant walkdowns:

(1) The inspectors walked down the following:
1. Accessible portions of liquid and solid radioactive waste processing systems to verify current system alignment and material condition
2. Abandoned in place radioactive waste processing equipment to review the controls in place to ensure protection of personnel
3. Changes made to the radioactive waste processing systems since the last inspection
4. Processes for mixing and transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers
5. Current methods and procedures for dewatering waste

Waste Characterization and Classification (IP Section 02.03) (1 Sample)

The inspectors evaluated the radioactive waste characterization and classification for the following waste streams:

(1) The inspectors identified radioactive waste streams and reviewed radiochemical sample analysis results to support radioactive waste characterization. The inspectors reviewed the use of scaling factors and calculations to account for difficult-to-measure radionuclides.

Shipment Preparation (IP Section 02.04) (1 Sample)

The inspectors evaluated [and observed] the following radioactive material shipment preparation processes:

(1) The inspectors reviewed the records of shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness.

Shipping Records (IP Section 02.05) (1 Sample)

(1) The inspectors reviewed selected non-excepted package shipment records.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified Exelon's performance indicator submittals listed below for the period January 1, 2019, through December 31, 2019 (6 samples):

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02) (2 Samples)

(1) Unit 1 Unplanned Power Changes per 7000 Critical Hours
(2) Unit 2 Unplanned Power Changes per 7000 Critical Hours

MS07: High Pressure Injection Systems (IP Section 02.06) (2 Samples)

(1) Unit 1 high pressure injection systems
(2) Unit 2 high pressure injection systems

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

(1) Unit 1 heat removal systems
(2) Unit 2 heat removal systems

71152 - Problem Identification and Resolution

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 4263306, Review of 'C' residual heat removal service water (RHRSW) spray header leak the week of February 3 through February 7, 2020

71153 - Followup 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 2017-005-00, Condition Prohibited by TS due to Non-Conservative APRM and Control Rod Block Setpoints (ADAMS Accession No. ML17208A301). The inspectors did not identify a violation of NRC requirements. This LER was submitted and subsequently retracted by licensee correspondence titled "Retraction of Licensee Event Report 2017-005-00, Condition Prohibited by TS due to Non-Conservative APRM and Control Rod Block Setpoints," dated February 18, 2020 (ADAMS Accession No. ML20050C868).
(2) LER 05000352/2019-01-00, Multiple Trains of RHRSW Inoperable for Greater than Time Allowed by Technical Specifications due to Pipe Corrosion (ADAMS Accession No. ML19297D391). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60854.1 - Preoperational Testing of Independent Spent Fuel Storage Facility Installation at Operating Plants

Preoperational Testing of Independent Spent Fuel Storage Facility Installation at Operating Plants (1 Sample)

(1) The inspectors evaluated Limerick Generating Station's performance during NRC observed preoperational dry run activities that were performed in order to fulfill requirements in the Certificate of Compliance No. 1032, Amendment 1, Condition 9. The inspectors observed dry run activities on March 16–17, 2020. Specifically, the inspectors observed or reviewed the following activities:

- Closure welding of a multiple-purpose canister mockup including lid to shell, port covers, and closure ring
- Non-destructive weld evaluations including visual and penetrant testing
- Simulated radiological field surveys and radiation protection coverage of welding activities
- Reviewed a recording of PCI Energy Services LLC welding personnel cutting open a welded canister mock-up removing the port covers and lid that was witnessed by NRC personnel

INSPECTION RESULTS

Observation: RHRSW Spray Network Pipe Corrosion	71152
The inspectors reviewed Exelon's evaluation and corrective actions associated with degradation identified in spray pond network piping as documented under IR 04263306. The inspectors concluded that Exelon had taken timely and appropriate actions in accordance with Exelon procedure PI-AA-125, “Corrective Action Program (CAP) Procedure,” and 10 CFR Part 50, Appendix B. The inspectors determined that Exelon’s associated failure analysis, cause evaluations, extent of condition and past functionality engineering evaluations were sufficiently thorough to support their conclusions. Exelon’s assigned corrective actions addressed the underlying cause, were aligned with engineering evaluations, adequately tracked, appropriately documented, and completed as scheduled. Based on the documents reviewed, system repair walkdowns, and discussions with engineering personnel, the inspectors noted that Exelon staff identified problems and entered them into the corrective action program at an appropriate threshold in accordance with their procedures.	

Multiple Trains of RHRSW Spray Network Piping Inoperable Due to Pipe Corrosion			
Cornerstone	Severity	Cross-Cutting Aspect	Report Section
Not Applicable	Severity Level IV NCV 05000352,05000353/2020001-01 Open/Closed	Not Applicable	71153
A self-revealed Severity Level IV non-cited violation (NCV) of Unit 1 and Unit 2 Technical Specification 3.7.1.1 was identified when four spray pond spray network trains were declared inoperable. Specifically, the 18-inch distribution piping in each network train was determined to be below minimum wall thickness.			

Description: The spray pond serves both units at Limerick Generating Station and is designed to supply and cool the safety-related cooling water for the emergency service water and the RHRSW systems. The spray pond contains four spray networks. Each network contains 240 spray nozzles with all the piping and spray nozzles above the water level supported by concrete pillars. Only one spray network is required for the safe shutdown of one unit and any two networks provide sufficient cooling to safely shut down both units.

On July 11, 2019, Exelon staff observed a pin hole leak on the 18-inch distribution piping of the 'C' spray network while the spray network was in operation for spray pond cooling. Exelon staff subsequently completed non-destructive examinations and identified wall thinning below minimum levels over certain areas at elbows where flow changed directions. On August 8, 2019, Exelon staff completed further examinations of the 'A' spray network and identified similar localized wall thinning and pinholes. Further examinations of the 'B' and 'D' spray network piping identified similar localized wall thinning in 18-inch distribution piping, but no pinholes. The degradation observed was mostly located in at the belt line of the 18-inch spray network distribution piping near tee components. Exelon determined this condition constituted a violation of Technical Specification 3.7.1.1, "Residual Heat Removal Service Water System – Common System," because both RHRSW subsystems were inoperable for greater than the allowed outage time of 8 hours. Specifically, the flow path was not operable due to the spray network piping degradation on all four spray networks. Exelon staff reported this issue to the NRC in Licensee Event Report (LER) 05000352/2019-001-00, dated October 24, 2019.

Exelon determined the wall thinning and pin hole leaks resulted from periodic filling and draining of the piping, done as part of normal operation, which removed the protective corrosive layer and increased the corrosion rate. Exelon completed a structural integrity assessment of the as found condition of the distribution piping and concluded it would have remained intact during a design basis seismic event, notwithstanding the degradation. Additionally, Exelon staff assessed whether increased leakage, resulting from hairline type slits that could form if the pinholes were to connect during a postulated seismic, tornado or gas explosion scenario, would adversely impact the heat removal function of a spray network. Exelon concluded that the formation of hairline slits is possible in a few locations, but the bypass leakage resulting from the slits was within the analyzed limits and therefore would not adversely impact the heat removal function of the spray network.

The inspectors reviewed Exelon's assessments and determined that they were based on sound engineering calculations. Further, the inspectors conducted an independent review of the regulatory requirements, commitments and plant specific operating experience associated with this piping. The inspectors did not identify any additional regulatory requirement that was not met or plant operating experience that indicated there was a prior problem. The inspectors noted that a limited portion of the spray network piping was examined in 2011 by means of localized spot readings. The results of these inspections identified no evidence of the excessive wall thinning that was observed in 2019.

Corrective Actions: Exelon replaced the degraded 18-inch distribution piping in all four spray network trains and performed an extent-of-condition review to determine if other systems were susceptible to similar degradation. Additionally, Exelon generated corrective actions including establishing non-destructive examination tasks and a pipe replacement strategy to address the corrosion problem identified in their above ground spray network piping. Finally, beginning in 2020, Exelon staff plan to examine a sample of emergency service water and RHRSW piping locations that have a limited monitoring history.

Corrective Action References: IRs 4263306, 4274846, 4280018
Performance Assessment: The NRC determined this violation was not reasonably foreseeable and preventable by the licensee and therefore is not a performance deficiency.
Enforcement: The Reactor Oversight Process significance determination process does not specifically consider a violation without a finding in its assessment of licensee performance. Therefore, it is necessary to address this violation which does not have an associated performance deficiency using traditional enforcement to adequately deter non-compliance. Severity: The NRC Enforcement Policy, Section 2.2.1 states, in part, that, whenever possible, the NRC uses risk information in assessing the safety significance of violations. The inspectors considered risk insights from IMC 0609.04, "Initial Characterization of Findings," and IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions." While the violation is a deficiency that affected the qualification of the spray pond spray network of the RHRSW system, the probabilistic risk assessment function of the spray network was maintained. Specifically, bypass leakage from the spray network caused by the degradation during events analyzed in the probabilistic risk assessment would not adversely impact the heat removal function of the spray network within 24 hours. Therefore, had there been a performance deficiency, the issue could be screened to Green. The inspectors determined that since the issue would be of very low safety significance, the violation would be best characterized as Severity Level IV. Violation: Technical Specification 3.7.1.1, “Residual Heat Removal Service Water System – Common System,” requires, in part, that the RHRSW system shall be operable with the system consisting of two subsystems with each subsystem comprised of two operable RHRSW pumps and an OPERABLE flow path capable of taking suction from the RHR service water pumps wet pits which are supplied from the spray pond or the cooling tower basin and transferring the water through one Unit 1 (Unit 2) RHR heat exchanger. With both RHRSW subsystems inoperable, Technical Specification 3.7.1.1.a.4 limiting condition for operation action statement requires restoring the inoperable RHRSW subsystem to operable status within 8 hours or be in at least Hot Shutdown within the next 12 hours and in Cold Shutdown within the following 24 hours. Contrary to the above, on or before July 11, 2019, until July 30, 2019, all four RHRSW spray pond spray network flow path subsystems, which are common to both Unit 1 and 2, were inoperable, and Exelon did not restore the inoperable RHRSW subsystem to operable status within 8 hours, and did not place Unit 1 and Unit 2 in at least Hot shutdown within 12 hours or in Cold Shutdown within 24 hours. The disposition of this violation closes LER 05000352/2019-001-00. Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

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

- On April 17, 2020, the inspectors presented the integrated inspection results to

Mr. Frank Sturniolo, Site Vice President, and other members of the licensee staff.

- On March 17, 2020, the inspectors presented the Independent Spent Fuel Storage Installation inspection results to Michael Cazzolli, Senior Manager Dry Cask Storage and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
60854.1	Miscellaneous	Certificate of Compliance No. 1032 Amendment 1	HI-STORM Flood/Wind Multipurpose Canister Storage System	
60854.1	Procedures	PI-CNSTR-OP-HLTC-H-01 Closure Welding of Holtec Multi-Purpose Canisters-HI-STORM 100	HI-STAR100, HI-STORM FW & UMAX Systems	Revision 4
71111.12	Corrective Action Documents	IR 4263306		
71111.12	Corrective Action Documents	IR 4300003		
71111.12	Procedures	CC-AA-309-1012	10 CFR Part 21 Technical Evaluations	Revision 5
71111.12	Procedures	SM-AA-300	Procurement Engineering Support Activities	Revision 9
71111.12	Procedures	SM-AA-300-1001	Procurement Engineering Process and Responsibilities	Revision 24
71111.15	Corrective Action Documents	IR 4202624		
71111.15	Corrective Action Documents	IR 4305660		
71111.15	Corrective Action Documents	IR 4310710		
71111.15	Corrective Action Documents	IR 4312940		
71111.15	Corrective Action Documents	IR 4313249		
71111.15	Corrective Action Documents	IR 4315921		
71111.15	Corrective Action Documents	IR 4326898		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.15	Procedures	WC-AA-101	On-Line Work Control Process	Revision 29
71111.15	Procedures	WC-LG-101-1001	Guideline for the Performance of On Line Work / On Line System Outages	Revision 24
71111.15	Work Orders	WO 0426831		
71111.22	Corrective Action Documents Resulting from Inspection	IR 4310125		
71111.22	Procedures	ST-6-011-231-0	'A' Loop ESW Pump, Valve, and Flow Test	Revision 80
71153	Corrective Action Documents	IR 4015576		
71153	Corrective Action Documents	IR 4263306		
71153	Corrective Action Documents	IR 4274846		
71153	Corrective Action Documents	IR 4280018		
71153	Miscellaneous	004N3273	Phase 1A Limerick Unit 2 Jet Pump Number 9 Flow Blockage SLO and TLO Evaluation – 180 days	Revision 1
71153	Miscellaneous	004N3425	Limerick Unit 2 Average Power Range Monitor Evaluation	Revision 0
71153	Miscellaneous	TODI-LGS-DBR0029664	U2 JP #9 Single Loop Operation	Revision 0