UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

January 31, 2020

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

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000373/2019004 AND 05000374/2019004

Dear Mr. Hanson:

On December 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at LaSalle County Station, Units 1 and 2. On January 8, 2020, the NRC inspectors discussed the results of this inspection with Mr. J. Washko, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

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

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

/RA/

David E. Hills, Chief
Branch 1
Division of Reactor Projects

Docket Nos. 05000373 and 05000374
License Nos. NPF-11 and NPF-18

Enclosure:
As stated

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Letter to Bryan C. Hanson from David E. Hills dated January 31, 2020.

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000373/2019004 AND 05000374/2019004

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000373 and 05000374
License Numbers:	NPF-11 and NPF-18
Report Numbers:	05000373/2019004 and 05000374/2019004
Enterprise Identifier:	I-2019-004-0068
Licensee:	Exelon Generation Company, LLC
Facility:	LaSalle County Station, Units 1 and 2
Location:	Marseilles, IL
Inspection Dates:	October 01, 2019 to December 31, 2019
Inspectors:	R. Baker, Senior Operations Engineer J. Benjamin, Senior Reactor Inspector J. Cassidy, Senior Health Physicist G. Hansen, Sr. Emergency Preparedness Inspector J. Havertape, Resident Inspector J. Park, Reactor Inspector D. Sargis, Resident Inspector W. Schaup, Senior Resident Inspector A. Shaikh, Senior Reactor Inspector C. Zoia, Senior Operations Engineer R. Zuffa, Illinois Emergency Management Agency
Approved By:	David E. Hills, Chief Br 1 Division of Reactor Safety

Enclosure

SUMMARY

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

Design Review Did Not Identify Neutral Required To Be Switched When Field Change Was Performed			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000374/2019004-01 Open/Closed	None (NPP)	71153
The inspectors identified a finding of very low safety significance and an associated violation of Title 10 CFR Part 50, Appendix B, Criteria III, "Design Control," for the licensee's failure to verify the adequacy of design during the performance of a design review. Specifically, while performing a field change to correct wiring configurations made during replacement of Unit 2 MSIVs pilot valves in 1999, reviews of the field change failed to identify the need to additionally swap the neutral connections for the pilot valves resulting in a circuit configuration different than the licensee's schematics and drawings and inadvertent MSIV closure when a pilot solenoid lead was lifted in 2019.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
URI	05000374,05000373/2015001-04	Breakers Installed Beyond Design Life	71152	Closed

PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On November 2, 2019, the unit was down powered to approximately 83 percent power to perform a rod sequence exchange and channel distortion testing. The unit was returned to full power on November 3, 2019. On December 14, 2019, the unit was down powered to approximately 85 percent to perform governor testing on the 1A and 1B turbine driven feedwater pumps, turbine control valve testing, and channel distortion testing. The unit was returned to full power on December 15, 2019. On December 26, 2019, the unit was taken off line and entered Mode 4 to replace reactor recirculation pump seals on the 'A' and 'B' reactor recirculation pumps. The unit was returned to full power on December 31, 2019, and remained at or near rated thermal power for the inspection period.

Unit 2 began the inspection period at rated thermal power. On December 7, 2019, the unit was down powered to approximately 85 percent to perform governor testing on the 1A and 1B turbine driven feedwater pumps, turbine control valve testing, and channel distortion testing. The unit was returned to full power on December 8, 2019, and remained at or near rated thermal power for the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, “Light-Water Reactor Inspection Program - Operations Phase.” The inspectors performed 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.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

External Flooding Sample (IP Section 03.04) (1 Sample)

(1) The inspectors evaluated readiness to cope with external flooding for the following areas:

- lake screen house
- Unit 1 Division 1 core standby cooling system pump room
- Unit 1 Division 2 core standby cooling system pump room
- Unit 2 Division 2 core standby cooling system pump room

71111.04Q - 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 Division 2 residual heat removal service water system with Division 1 unavailable on October 7, 2019
(2) Unit 2 standby gas treatment system on October 31, 2019
(3) Unit 2 standby liquid control system on November 15, 2019

71111.05A - Fire Protection (Annual)

Annual Inspection (IP Section 03.02) (1 Sample)

(1) The inspectors observed fire drill scenario 19-01 in Fire Zones 9C1 and 9C2 on October 22, 2019.

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

(1) Fire Zone 8C5, diesel building, elevation 674', Unit 2 Division 1 residual heat removal service water pump room on October 4, 2019
(2) Fire Zone 8C4, diesel building, elevation 674', Unit 2 Division 2 residual heat removal service water pump room on October 4, 2019
(3) Fire Zone 8C3, diesel building, elevation 674', Unit 2 high pressure core spray cooling water pump room on October 4, 2019
(4) lake screen house, elevations 714' and 683' on November 7, 2019
(5) Fire Zone 7C6, diesel building, elevation 674', Unit 1 Division 1 residual heat removal service water pump room on November 18, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

(1) Unit 2 Division 2 and Division 3 core standby cooling system pump rooms

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (1 Sample)

(1) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification biennial written examinations and annual operating tests administered from October 14 through November 15, 2019.

71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

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

(1) Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered on November 15, 2019.

Annual Requalification Operating Tests

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

Administration of an Annual Requalification Operating Test

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

Requalification Examination Security

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

Remedial Training and Re-examinations

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

Operator License Conditions

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

Control Room Simulator

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

Problem Identification and Resolution

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

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

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

(1) The inspectors observed and evaluated licensed operator performance in the control room during down power activities on Unit 1 on December 7, 2019.

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

(1) The inspectors observed and evaluated annual re-qualification examination ESG 86 on October 30, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (3 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

(1) Unit 1 high pressure core spray diesel generator heat exchanger
(2) Unit common service air and instrument air system
(3) environmental qualification of primary containment isolation valves in the outboard main steam isolation valve room

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

(1) observed functional run of the temporary diesel driven air compressor and reviewed the contingency plan for the Unit 1 station air compressor replacement under Work Order 996355 on October 8, 2019
(2) Unit 1 online risk elevated to Yellow due to emergent issue on high pressure core spray diesel generator, Action Request 4296452, "HPCS [high pressure core spray] DG [diesel generator] Room Temperature Controller (1TCU-VD003) Reading Down Scale" on November 12, 2019
(3) Unit 2 online risk elevated to Yellow due to planned maintenance on the Division 2 emergency diesel on November 18, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (2 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) Unit 1 Division 1 residual heat removal service water flow low during quarterly operability run of 'A' residual heat removal pump

(2) Unit 1 reactor core isolation cooling pump low suction pressure alarm during quarterly operability run

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) temporary modification of the Unit 2 Division 1 switchgear room for replacement of the 125 Vdc battery, installation of seismic rack and floor drain plugs

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the following post-maintenance tests:

(1) 'B' diesel driven fire pump after seasonal maintenance on November 7, 2019
(2) Unit 2 Division 2 emergency diesel generator heat exchanger (2DG01A) on November 11, 2019
(3) Unit 2 motor driven reactor feed pump on December 15, 2019

71111.20 - Refueling and Other Outage Activities

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

(1) The inspectors evaluated Unit 1 maintenance outage, L1M23, activities from December 26 - 31, 2019. The purpose of the maintenance outage was to replace the 'A' and 'B' reactor recirculation pump seals.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

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

(1) testing of the 'B' diesel driven fire pump on November 7, 2019
(2) testing of the Unit 2 diesel generator cooling water pump (biennial comprehensive pump test) on November 19, 2019

FLEX Testing (IP Section 03.02) (1 Sample)

(1) surveillance testing of the 'A' flex diesel generator of October 10, 2019

71114.02 - Alert and Notification System Testing

Inspection Review (IP Section 02.01-02.04) (1 Sample)

(1) The inspectors evaluated the following maintenance and testing of the alert and notification system:
- Alert Notification System (siren) inspection and maintenance (corrective and preventative) records for the period from October 2017 to October 2019
- Alert Notification System (siren) tests for the period from April 2018 to October 2019

71114.03 - Emergency Response Organization Staffing and Augmentation System

Inspection Review (IP Section 02.01-02.02) (1 Sample)

(1) The inspectors evaluated the readiness of the Emergency Preparedness Organization.

71114.05 - Maintenance of Emergency Preparedness

Inspection Review (IP Section 02.01 - 02.11) (1 Sample)

(1) The inspectors evaluated the maintenance of the emergency preparedness program.

RADIATION SAFETY

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Engineering Controls (IP Section 02.01) (1 Sample)

The inspectors evaluated airborne controls and radioactive monitoring.

(1) The inspectors reviewed the following:

Installed Ventilation Systems
- Control Room Emergency Ventilation

Temporary Ventilation System Setups
- None were available during this inspection.

Portable or Installed Monitoring Systems
- AMS-4 in Interim Radwaste Storage Facility

Self-Contained Breathing Apparatus for Emergency Use (IP Section 02.03) (1 Sample)

The inspectors evaluated self-contained breathing apparatus program implementation.

(1) The inspectors reviewed the following:

Status and Surveillance Records for Self-Contained Breathing Apparatus

- Exelon LaSalle - 08
- Exelon LaSalle - 24
- Exelon LaSalle - CR09

Self-Contained Breathing Apparatus Fit for On-Shift Operators

- 3 on-shift operators Crew D

Self-Contained Breathing Apparatus Maintenance Check

- Exelon LaSalle - 08
- Exelon LaSalle - 24
- Exelon LaSalle - CR09

71124.04 - Occupational Dose Assessment

Special Dosimetric Situations (IP Section 02.04) (1 Sample)

The inspectors evaluated the following special dosimetric situation:

(1) Licensee's implementation of requirements to manage radiation protection of declared pregnant workers for 2 workers and application of NRC-approved external dosimetry methods.

71124.06 - Radioactive Gaseous and Liquid Effluent Treatment

Instrumentation and Equipment (IP Section 02.04) (1 Sample)

The inspectors reviewed the following radioactive effluent discharge system surveillance test results:

(1)
- Stand-By Gas Treatment Filter Flow
- Stand-By Gas Treatment Charcoal Sample

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 toured the following areas:
- Interim Radwaste Storage Facility
- Building 20

The inspectors performed a container check (e.g., swelling, leakage and deformation) on the following containers:

- 10 Drums in Building 20

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) Liquid or Solid Radioactive Waste Processing Systems

- Advanced Liquid Processing System

Radioactive Waste Resin and/or Sludge Discharges Processes

- Advanced Liquid Processing System Resin

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)

- Spent Resin
- Anion Resin

Shipment Preparation (IP Section 02.04) (1 Sample)

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

(1) LW19-039

Shipping Records (IP Section 02.05) (1 Sample)

The inspectors evaluated the following non-excepted package shipment records:

(1) LW19-039
LW19-052
LW19-003
LW18-058

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

EP01: Drill/Exercise Performance (IP Section 02.12) (1 Sample)

(1) 04/01/2018 - 09/30/2019

EP02: ERO Drill Participation (IP Section 02.13) (1 Sample)

(1) 04/01/2018 - 09/30/2019

EP03: Alert & Notification System Reliability (IP Section 02.14) (1 Sample)

(1) 04/01/2018 - 09/30/2019

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (2 Samples)

(1) Unit 1 (10/01/2018 - 09/30/2019)
(2) Unit 2 (10/01/2018 - 09/30/2019)

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

(1) Unit 1 (10/01/2018 - 09/30/2019)
(2) Unit 2 (10/01/2018 - 09/30/2019)

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

(1) Unit 1 (10/01/2018 - 09/30/2019)
(2) Unit 2 (10/01/2018 - 09/30/2019)

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample (IP Section 02.16) (1 Sample)

(1) 07/01/2018 - 09/30/2019

71152 - Problem Identification and Resolution

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

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

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

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

(1) Action Request 4276516, "Work Hour Rule Violation and Emergency Preparedness Minimum Staffing"
(2) unresolved item service life issue on molded case breakers

INSPECTION RESULTS

Unresolved Item (Closed)	Breakers Installed Beyond Design Life URI 05000374,05000373/2015001-04	71152

Description: On May 1, 2015, the NRC issued Integrated Inspection Report 05000373/2015001; 05000374/2015001 documenting Unresolved Item (URI) 05000373/2015001-04; 05000374/2015001-04. This URI was associated with safety-related Westinghouse HFB molded case circuit breakers installed in mild environments with a service life of 20 years that had been installed in the plant for more than 30 years. Records provided showed that failures of this type of breaker were attributed to manufacturing defects and none were attributed to age-degradation; however, it was not clear that a lack of age-degradation failures provided an adequate basis for extension to the previously established design life. Since then, the NRC undertook efforts, such as training, to assist inspectors to disposition issues related to how long safety-related components remain in service and to clarify the application of various regulations and industry standards. As part of this effort, the NRC determined current Agency regulations require the establishment of quality assurance programs and supporting procedures that, among other things, set preventative maintenance schedules for the inspection or replacement of parts having a specified lifetime.

During the NRC's previous inspection, the inspectors determined that the licensee had monitored the breaker performance and tested these breakers routinely; however, it was not clear that the preventative maintenance or replacement strategy basis for extension beyond the 20-year service life was adequate. After the inspectors reviewed additional information, the inspectors determined that based on the original information provided to the licensee by the vendor when the breakers were first installed, the lack of age-degradation failures, and a sufficient preventative maintenance strategy based on the original vendor recommendations, the actions taken by the licensee reasonably ensured the continued quality of the breakers beyond 20 years. Additionally, after receiving additional information from Westinghouse in 2014 about potential breaker failures due to grease hardening and discussing the potential service life issue with the NRC, the licensee began replacement of all Westinghouse HFB molded case breakers on site. The licensee's efforts provide reasonable assurance of adequate protection of public health and safety.

Based on the above, no performance deficiency or violation of regulatory requirements was identified.

Additionally the inspectors reviewed Action Request 1662697, "OPEX Evaluation for Westinghouse Technical Bulletin 14-2 Aging Issues," and Action Request 2429133, "Request for HFB Breaker Operating History," for the following performance attributes:

- complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause, and previous occurrences;
- evaluation and disposition of operability/functionality/reportability issues;
- classification and prioritization of the resolution of the problem commensurate with safety significance;
- identification of corrective actions, which were appropriately focused to correct the problem; and

- completion of corrective actions in a timely manner commensurate with the safety significance of the issue.

The inspectors determined that the licensee had appropriately followed station procedures and the station's corrective action program to ensure all elements inspected were adequately addressed. One item of note was the operability determination performed for Action Request 2429133. In lieu of a documented operability determination in the description section of the action request, an action item was used to provide an evaluation for justification for continued use of HFB breakers for greater than the 20-year service life. Station process would typically have the shift manager document that an operability evaluation was requested and engineering would provide the evaluation as an engineering change. The inspectors determined that an operability determination was made and was documented in the action request which technically meets the stations procedure; however, it did not follow the normal process for such determinations.

Corrective Action References(s): Action Requests 1662697 and 2429133

Minor Violation	71152

Minor Violation: The inspectors determined that a self-revealed violation of Title 10 *Code of Federal Regulations* (CFR) 26.205 for the licensee's failure to schedule and control work hours for personnel subject to work hour controls was minor. Specifically, the licensee failed to appropriately schedule and control work hours for a radiation protection technician (RPT) who was providing covered work as a designated emergency response organization (ERO) duty RPT as defined in station procedure OP-LA-101-11-1001, "On-Shift Staffing Requirements."

Screening: The inspectors determined the performance deficiency was minor. Since the issue was similar to minor example 9.b. of Inspection Manual Chapter 0612, Appendix E, where the failure occurred only twice and was made by the same individual that did not become associated with a cornerstone attribute or did not adversely affect the cornerstone objective.

Enforcement: This failure to comply with Title 10 CFR 26.205 constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

Observation: Selected Issue for Follow Up - Work Hour Rule Violation	71152

The inspectors reviewed Action Request 4276516 "Work Hour Rule violation," and Action Request 4279116, "Extent of Condition Review From Work Hour Rule Violation," for the following performance attributes:

- complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause, and previous occurrences;
- evaluation and disposition of operability/functionality/reportability issues;
- classification and prioritization of the resolution of the problem commensurate with safety significance;
- identification of corrective actions, which were appropriately focused to correct the problem; and

- completion of corrective actions in a timely manner commensurate with the safety significance of the issue.

The inspectors determined that the licensee had appropriately followed station procedures and the station's corrective action program to ensure all elements inspected were adequately addressed. The inspectors determined there was a minor violation of NRC requirements that was documented separately in this report.

Observation: Semiannual Review for Trends	71152

Based on the trend identified and documented in NRC Integrated Inspection Report 05000373/2019002; 05000374/2019002 in the area of human performance fundamental behavior, in the instrument maintenance department, the inspectors continued to monitor the licensee performance and actions in the human performance area. Human performance behaviors continued to be a problem at the station and occurred across all maintenance disciplines and in the operations department. Action Request 4301021 was written by the station to address concerns in this area. Additionally, a new trend was identified in the area of personnel failing to notify the control room staff of activities occurring in the plant. These activities resulted in multiple occasions of the control room receiving unexpected control room alarms and in one instance entry into an emergency operating procedure. The inspectors briefed the licensee of the trend during the fourth quarter exit. The individual occurrences were documented in the corrective action program and Action Request 4310639 was written to document the trend.

None of the issues identified by the inspectors or licensee were more than minor.

Design Review Did Not Identify Neutral Required To Be Switched When Field Change Was Performed

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000374/2019004-01 Open/Closed	None (NPP)	71153

The inspectors identified a finding of very low safety significance and an associated violation of Title 10 CFR Part 50, Appendix B, Criteria III, "Design Control," for the licensee's failure to verify the adequacy of design during the performance of a design review. Specifically, while performing a field change to correct wiring configurations made during replacement of Unit 2 MSIVs pilot valves in 1999, reviews of the field change failed to identify the need to additionally swap the neutral connections for the pilot valves resulting in a circuit configuration different than the licensee's schematics and drawings and inadvertent MSIV closure when a pilot solenoid lead was lifted in 2019.

Description:

On July 24, 2019, during operator rounds, an equipment operator found the indication light for the Unit 2 inboard 'C' MSIV 'A' solenoid valve (P3) not lit at the 2H13-P622 panel. This light provide indication that the solenoid was energized. Additional checks were done and troubleshooting was performed to confirm that the P3 solenoid valve was de-energized. Each MSIV had two solenoid valves that were energized to keep the MSIV open; if power was lost to both valves, the MSIV would close. If one pilot valve was already de-energized and the

other pilot valve failed, the MSIV would close, causing a plant transient that would likely result in a reactor plant trip.

Later that day, the unit was down powered to 85 percent reactor power to support troubleshooting the 'C' MSIV pilot valve. The following day, monitoring equipment was installed on the conductor side of the circuit, and troubleshooting began. As part of the troubleshooting, lead CC-54, the neutral for the P3 solenoid valve circuit, was lifted to isolate the P3 solenoid, and the 'C' MSIV closed unexpectedly. Control room operators responded to the transient to stabilize the reactor and further reduced power to 75 percent to meet TS and the requirements of the core operating limits report. Troubleshooting activities were stopped and the licensee began an investigation into why the 'C' MSIV closed.

As part of the licensee investigation of the history of the MSIV pilot valve, it was discovered that during replacement of the valve in 1999 a field change request was processed that required the conductor wires for the 'C' inboard MSIV 'A' and 'B' solenoid valve to be swapped, but the neutral wires were not, such that when the neutral wire on the 'A' solenoid was lifted the 'B' solenoid was de-energized. The field change was evaluated, reviewed, approved, and stated to update the applicable drawings to reflect the conductor wire swap. Additionally, the extent of condition review determined that each inboard MSIV on Unit 2 was in this configuration and that Unit 1 was not impacted. This was documented in action request AR 04273972 with no additional actions taken.

The inspectors reviewed the applicable work history, station procedures that were applicable at the time the field change request was made and the evaluation to support the field change performed by the licensee determined the following. Station procedure LAP-1300-5, "Field Change Requests," Revision 14 Step E.1, stated that the use of a field change request is limited to the review, evaluation, approval, and distribution of minor design changes (as defined in Q.P. 3-2 [Quality Assurance Manual]) which occur subsequent to engineering change notices or equivalent being issued for construction for design changes requiring engineering assistance.

The quality assurance manual stated in the section for change control that "Changes to final designs, field changes, modifications to operating facilities, and nonconforming items dispositioned use-as-is or repair shall be justified and subject to design control measures with those applied to the original design." This statement is consistent with Title 10 CFR Part 50, Appendix B, Criteria III, Design Control, that states, in part, "Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design".

The inspectors review of the information determined that the evaluation performed by the licensee to support the field change failed to check the adequacy of the design when it did not consider the effect on the circuit by leaving the neutrals in the same positions.

Corrective Actions: The licensee made updates to the applicable drawings and generated work orders to correct the wiring in the next refueling outage in the spring of 2021.

Corrective Action References: Action Requests 4267062 and 4273972

Performance Assessment:

Performance Deficiency: The inspectors determined that failing to check the adequacy of the design as required by station procedure LAP-1300-5, Field Change Requests, was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, not evaluating the effect on the MSIV pilot valve circuit by leaving the neutrals in the same positions after swapping the conductor wires resulted in a plant transient when one of the pilot valve neutrals was lifted during troubleshooting.

Significance: The inspectors assessed the significance of the finding using Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” The inspectors screened the issue against the Initiating Events questions and determined that the finding was of very low safety significance (Green) because the finding did not result in a reactor trip.

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. Specifically, because the design change occurred more than 3 years ago.

Enforcement:

Violation: Title 10 Code of Federal Regulations Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that the licensee provide for verifying or checking the adequacy of design, such as by the performance of design reviews, the use of alternate or simplified calculation methods, or by the performance of a suitable testing program.

Contrary to the above, on February 29, 1999, the licensee failed to verify the adequacy of the design change to the 'C' MSIV's associated 'A' and 'B' pilot solenoid valves. Specifically, the design review performed when the field change was implemented failed to identify that the neutral connections had to also be swapped to ensure the final design was correct.

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 January 8, 2020, the inspectors presented the integrated inspection results to Mr. J. Washko, Site Vice President, and other members of the licensee staff.
- On November 15, 2019, the inspectors presented the Licensed Operator Requalification program biennial inspection results inspection results to Mr. P. Hansett, Plant Manager, and other members of the licensee staff.
- On December 12, 2019, the inspectors presented the emergency preparedness baseline inspection results to Mr. J. Washko, Site Vice President, and other members of the licensee staff.

- On December 19, 2019, the inspectors presented the radiation protection inspection results inspection results to Mr. J. Moser, Radiation Protection Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04Q	Drawings	Drawing M-145	P&ID Standby Liquid Control System	AF
	Miscellaneous	LOP-SC-02E	Unit 2 Standby Liquid Control System Electrical Checklist	12/16/1998
		LOP-SC-02M	Unit 2 Standby Liquid Control System Mechanical Checklist	05/19/2015
71111.05A	Miscellaneous	19-01	Fire Drill Scenario 19-01, North Service Building Hot Shop	0
71111.11A	Miscellaneous		LaSalle Station Licensed Operator Requalification Annual Examination Summary Results for 2019	12/18/2019
71111.11B	Corrective Action Documents	AR 04280536	Simulator Fidelity Concern Identified During EP Exercise	09/19/2019
	Engineering Evaluations	TQ-AA-306-F-03	LaSalle STEADY 1 Steady-State Performance Testing	5
		TQ-AA-306-F-03	Transient 10 Simultaneous Closure of all MSIVs Combined with Single Stuck Open SRV with No Operator Actions	6
		TQ-AA-306-F-03	Transient 10A Simultaneous Closure of All MSIVs Combined with Single Stuck Open SRV with No Operator Actions - Baseline Alternative	0
	Miscellaneous	JPM P-AP-04	DC Load Shed	5
		JPM P-DG-05	0 DG Emergency Start	7
		JPM P-HD-04	Recovery of Low Pressure Heater	4
		SEG 17-1-1	ILT NRC 2017 Scenario Based Testing	07/10/2018
		SEG 17-1-3	ILT NRC 2017 Scenario Based Testing	07/10/2018
		SEG 17-1-4	ILT NRC 2017 Scenario Based Testing	07/09/2018
	Procedures	OP-AA-105-102, Attachment 2	Reactivation of License Log - Licensed Operator Reactivations for 2018 and 2019	14
		OP-LA-101-111-1001	On-Shift Staffing Requirements	9
		OP_AA_105-102 Attachment 1	Active License Tracking Log - 2nd and 3rd Quarters 2019 Records for Crew 'D'	14
		TQ-AA-306-F-20	Scenario Based Testing for ESG 129	2
		TQ-AA-306-F-20	Scenario Based Testing for ESG 101	2
		TQ-AA-306-F-20	Scenario Based Testing for ESG 84	2
		TQ-AA-306-F-20	Scenario Based Testing for ESG 128	2
		TQ-AA-306-J002	Simulator Testing Report Template Job Aid - Fuel Cycle Testing Documentation	11/11/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		TQ-AA-306-J002	Simulator Testing Report Template Job Aid - Fuel Cycle Testing Documentation	09/14/2018
	Self-Assessments	AR 04113409	Pre-NRC 71111.11 Inspection Licensed Operator Requalification Training Assessment	09/19/2019
	Work Orders	SWR [Simulator Work Request] 0133878	Modify Simulator for New Gravity Drain Instrumentation and Controls	01/18/2018
		SWR 0134726	FCVs Lockup on Insertion of MRC043	10/18/2018
71111.11Q	Work Orders	WO 1931093-02	Fire Damper Visual Inspection	09/24/2018
		WO 1940578-01	Fire Damper Visual Inspection	06/18/2018
71111.13	Miscellaneous	FN# LAS-0-SA-02	Supply compressed air for operating pneumatic equipment, air operated controls, maintenance services and interruptable equipment such as tank mixing air spargers, automatic controls systems outside the drywell, and various instrumentation outside the drywell.	10/01/2019
71111.15	Corrective Action Documents	AR 2635241	1E12-B001A 1A RHRWS Flow Low During PMT	03/03/2016
		AR 4286572	Computer Point Reads Lower than MCR Panel Indication	10/10/2019
	Engineering Changes	EC 404987	1E12-B001A 1A RHRSW Flow Low During PMT	000
	Miscellaneous	LOP-RH-05	Operations Department Procedure	34
		LOS-RH-Q1	RHR 1A Serv Wtr Flow	10/10/2019
		LOS-RH-Q1	RHR (LPCI) an RHR Service Water Pump and Valve Inservice Test for Modes 1, 2, 3, 4 and 5	94
71111.18	Engineering Changes	EC 351256	MR90 Temporary Configuration Change Evaluation for Plugging Floor Drain	0
		EC 351256	MR90 Temporary Configuration Change Evaluation for Plugging Floor Drain	000
		EC 625173	Seismic Evaluation of Temporary Battery Rack	000
	Procedures	LEP-DC-116	Division 1 and 2 Switchgear Room 125 Volt Battery Cell Replacement for Units 1 and 2	1
	Work Orders	WO 4865996-10	Install and Remove Temporary Floor Drain Plug/Cover for Floor Drain 0DA01 per EC 351256	10/10/2019
71111.19	Work Orders	WO 4584919-07	LRA (Finish) Eddy Current Test 2DG01A DG Cooling Water HX	11/19/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		WO 4587549-07	(LR) 2DG01A Inspect, Clean and Eddy Test D/G HX	11/19/2019
		WO 4588910-02	Bench Test for IST	11/19/2019
		WO 4855996-02	Coolant Leak Discovered on 'B' Diesel Fire Pump	11/07/2019
		WO 4889411-02	0FP001B Check Valve Leaks	11/07/2019
		WO 4907648-04	Replace Elastomer Hose on EDG Expansion Tank and Water Inlet	11/19/2019
		WO 4948253-07	U2 MDRFP OB Mechanical Seal Degrading	12/15/2019
		WO 4953520-03	Flange Leak on 0FP051B	11/07/2019
71111.20	Corrective Action Documents	AR 4306237	RM - Three Rods Would Not Withdraw From Full In	12/27/2019
		AR 4306238	RM - RCMS Trouble Withdrawing Control Rods	12/26/2019
		AR 4306287	Void Found During UT of 1B SDC Return	12/27/2019
		AR 4306434	U1 Control Rod 38-59 Requires Elevated Pressure to Withdraw	12/28/2019
	Engineering Changes	EC 630387	Technical Evaluation of Control Rod Drive/Rod Control Management System Performance During L1M23	0
71111.22	Work Orders	WO 4690199-01	IST Comprehensive Pump Test for 2DG01P	11/19/2019
		WO 4854653-03	'B' Diesel Fire Pump Engine Annual Surveillance	11/07/2019
		WO 4911590	FLEX Cummins DG 0FF01KA Semi-Annual Equipment Surveillance	10/10/2019
		WO 4969571-01	LOS-FP-M1 Fuel Oil Transfer Test to B DFP Day Tank	11/07/2019
		WO 4969573-01	LRA LOS-FP-M6 Diesel Fire Pump Operational Check Att B	11/07/2019
		WO 4969574-01	LOS-DC-M3 B Diesel Fire Pump Battery Att N	11/07/2019
		WO 4971155-01	LRA LOS-DG-M2 2A Diesel Generator ATT 2A-Idle	11/20/2019
71114.02	Corrective Action Documents	AR 04101335	EP Siren Failure (LS32)	02/06/2018
		AR 04161980	EP Siren Failure (LS24)	08/06/2018
		AR 04188815	EP Siren Failure (LS33)	10/29/2018
		AR 04252247	EP Siren Failure (LS14)	05/28/2019
		AR 04265971	EP Siren Failure (LS33)	07/22/2019
		AR 04279874	EP Siren Failure (LS14)	09/17/2019
	Miscellaneous		Emergency Planning for the LaSalle Area – Important Safety Information for Your Community 2019/2020;	07/29/2019
			Siren Daily Operability Reports	04/01/2018 - 09/30/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			LaSalle Monthly Siren Availability Reports	04/01/2018 - 09/30/2019
			Semi-Annual LaSalle Siren Reports – Siren Corrective and Preventative Maintenance	10/01/2017 - 09/15/2019
		KLD-TR-988	LaSalle County Generating Station Alert and Notification System (ANS) Design Report	09/19/2018
	Procedures	EP-AA-1000	Exelon Nuclear Standardized Radiological Emergency Plan	33
		EP-AA-1005	Exelon Nuclear Radiological Emergency Plan Annex for LaSalle Station	41
71114.03	Corrective Action Documents	AR 04154847	2Q18 Drill Set TSC Demonstration Criteria Failures	07/11/2018
		AR 04192758	4Q Drill Set Facility and Equipment Issues	11/07/2018
		AR 04219254	LORT DEP Failure Due to Untimely Classification	02/12/2019
		AR 04219255	LORT DEP Failure Due to Inaccurate PARS	02/12/2019
		AR 04238300	NOS ID: ERO Shift Communicators Were Not Qualified in LMS	04/10/2019
		AR 04256110	Unannounced Call-In Drill - Duty Team Member Did Not Respond	06/11/2019
	Miscellaneous		LaSalle Station Emergency Response Organization Duty Team Roster	12/10/2019
			ERO Training Records – Initial and Requalification Training (Sample - 20 ERO Personnel)	12/11/2019
			Quarterly Unannounced Off-Hours Call-In Augmentation Drill Results	11/01/2017 - 06/30/2019
			2018 Drive-In and Off Hours Drill Final Report	12/11/2018
	Procedures	EP-AA-1000	Exelon Nuclear Standardized Radiological Emergency Plan	33
		EP-AA-1005	Exelon Nuclear Radiological Emergency Plan Annex for LaSalle Station	41
		EP-AA-1005, Addendum 1	LaSalle Station On-Shift Staffing Technical Basis	1
		EP-AA-112-100-F-06	ERO Notification or Augmentation	W
		EP-AA-120-F-02	EP Staff Initial Development Checklist	H
		EP-AA-122-100-F-13	Call-In Drill (CID) Checklist	G

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		EP-AA-122-200	TSC Activation and Operation	12
		EP-AA-122-200	Operations Support Center Activation and Operation	13
		TQ-AA-113	ERO Training and Qualification	36
71114.05	Corrective Action Documents	AR 04118464	TSC Computers Need Replaced	03/23/2018
		AR 04126078	NOS ID: Replacement of KI Tablets in MCR not Tracked	04/12/2018
		AR 04137154	Multiple Speakers Degraded EP Readiness Category 1	05/13/2018
		AR 04141611	EP Readiness Category 1: Assembly Siren/Beacons not Working	05/27/2018
		AR 04144985	2Q Drill Set Facility and Equipment Issues	06/06/2018
		AR 04146808	2Q Drill Set Facility and Equipment Issues	06/13/2018
		AR 04154848	2Q18 Drill Set OSC Demonstration Criteria Failures	07/11/2018
		AR 04175528	INPO ID: (Enhancement) Reevaluate Expectation for Plant PAs	09/21/2018
		AR 04226676	EP Readiness Category I Emergency Siren FE2-16A Inoperable	03/06/2019
		AR 04248384	EP Readiness Category 1 - Multiple Speakers Degraded	05/13/2019
		AR 04261921	EP Readiness Category 1 - Multiple PA Speakers Degraded	07/04/2019
		AR 04263351	Technical Support Center DC Failures During 2Q19 ERO Drills	07/11/2019
	Miscellaneous		Seneca Fire Department Letter of Agreement	11/17/2017
			Seneca Ambulance Service Letter of Agreement	11/17/2017
			Marseilles Fire Department Letter of Agreement	11/17/2017
			Marseilles Area Ambulance Service Letter of Agreement	11/17/2017
			LaSalle 1st Quarter Performance Indicator Drill Evaluation Report	07/19/2018
			LaSalle Emergency Worker Exposure Control Drill Evaluation Report	12/20/2018
			LaSalle 2018 Medical and Health Physics Drill Findings and Observations Report	10/19/2018
			LaSalle 2019 Medical and Health Physics Drill Findings and Observations Report	06/06/2019
			LaSalle Quarterly Performance Indicator Drill Evaluation	10/01/2017 -

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Reports	06/30/2019
			LaSalle Monthly EP Information Newsletters	07/01/2019 - 12/12/2019
			Operations Support Center Inventory of RP Equipment Records	10/01/2018 – 09/30/2019
			Technical Support Center Inventory of RP Equipment Records	10/01/18 – 09/30/19
			Corporate Letters of Agreement (table)	12/03/2019
			Morris Hospital Letter of Agreement	11/17/2017
			LaSalle County Sheriff Letter of Agreement	11/17/2017
		KLD TR- 1003	LaSalle County Generating Station 2018 Population Update Analysis	09/08/2018
		KLD TR- 932	LaSalle County Generating Station 2017 Population Update Analysis	09/09/2017
	Procedures	EP-AA-1000	Exelon Nuclear Standardized Radiological Emergency Plan	33
		EP-AA-1005	Exelon Nuclear Radiological Emergency Plan Annex for LaSalle Station	41
		EP-AA-1005, Addendum 2	Evacuation Time Estimates for LaSalle County Generating Station Plume Exposure Pathway Emergency Plan	1
		EP-AA-1005, Addendum 3	Emergency Action Levels for LaSalle Station	3
	Self-Assessments	AR 4113396	Pre-2019 NRC EP Routine-Program / PI Verification Inspection Self Assessment	08/21/2019
		NOSA-LAS-18-03	LaSalle Station Emergency Preparedness Audit Report	04/18/2018
		NOSA-LAS-19-03	LaSalle Station Emergency Preparedness Audit Report	04/17/2019
71124.03	Corrective Action Documents Resulting from Inspection	04295768	Mask Fits Performed Using Protocol Not Yet Incorporated into Approved Procedure	11/08/2019
	Miscellaneous	Exelon LaSalle 08	Posi3 USB Test Results - Complete SCBA Test	05/22/2018
		Exelon LaSalle 08	Posi3 USB Test Results - Complete SCBA Test	05/22/2019
		Exelon LaSalle 24	Posi3 USB Test Results - Complete SCBA Test	05/20/2019
		Exelon LaSalle 24	Posi3 USB Test Results - Complete SCBA Test	05/21/2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Exelon LaSalle CR09	Posi3 USB Test Results - Airline Apparatus Test	05/22/2018
		Exelon LaSalle CR09	Posi3 USB Test Results - Airline Apparatus Test	05/22/2019
		Purchase Order 00685692	Results from In-Place Testing of Nuclear Air Cleaning Systems for LaSalle Nuclear Station	05/30/2019
		Sample No. 17-018643	Radioiodine Penetration / Efficiency Test Report - OVC01B	09/28/2017
		Sample No. 19-019223	Radioiodine Penetration / Efficiency Test Report - OVC01SA	05/11/2019
	Work Orders	01918632 02	Unit 2 Charcoal Sample From Standby Gas Treatment	04/18/2018
		01925828 01	Unit 2 Standby Gas Treatment Filter Flow	03/20/2018
		04641819	Control Room Emergency Makeup Train "A" Charcoal Filter Leak Test	05/09/2019
		04641820 01	Control Room Emergency Makeup Train "A" HEPA Filter Leak Test	05/09/2019
71124.04	Miscellaneous		Intake Investigation Form	07/26/2019
71124.06	Work Orders	01918632-02	Charcoal Sample from Stand-By Gas Treatment	04/18/2018
		01925825-01	Stand-By Gas Treatment Filter Flow	03/20/2018
71124.08	Procedures	RP-AA-601	Surveying Radioactive Material Shipments	21
		RP-AA-603	Inspection and Loading of Radioactive Material Shipments	10
	Shipping Records	LW18-058	Tri-Nuke Filters in RT-100 Cask	10/02/2018
		LW19-003	Velocity Limiters to Clive as Waste	01/24/2019
		LW19-039	Dewatered Spent Resin	10/29/2019
		LW19-052	21-300 WE Septa Liner in a 21-300 Cask	09/04/2019
71151	Miscellaneous		Monthly Data Elements for ERO Drill Participation Performance Indicator	04/01/2018 – 09/30/2019
			Monthly Data Elements for NRC Drill/Exercise Performance (DEP) Performance Indicator	04/01/2018 - 09/30/2019
			Monthly Data Elements for NRC ANS Reliability Performance Indicator	04/01/2018 - 09/30/2019
			LaSalle 8 Year Cycle Drill and Exercise Initiating Conditions / Objectives Spreadsheet	12/11/2019
		CY-LA-170-3002	Total Dose Determination and Supporting Information	July 2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Attachment 1		through September 2019
	Procedures	EP-AA-125-1001	Performance Indicator Guidance	9