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

February 12, 2021

Mr. David Rhoades
Senior VP, Exelon Generation Company, LLC
President and CNO, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION – INTEGRATED INSPECTION REPORT 05000373/2020004; 05000374/2020004; 05000373/2020501 AND 05000374/2020501

Dear Mr. Rhoades:

On December 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at LaSalle County Station and 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. The NRC also completed the Emergency Preparedness Exercise Scenario Review Inspection. This inspection began on September 28, 2020, and issuance of this letter closes Inspection Report Number 2020501.

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.

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/

Kenneth R. Riemer, 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 David Rhoades from Kenneth Riemer dated February 12, 2021.

SUBJECT: LASALLE COUNTY STATION – INTEGRATED INSPECTION REPORT 05000373/2020004; 05000374/2020004; 05000373/2020501 AND 05000374/2020501

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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:	05000373/2020004; 05000374/2020004; 05000373/2020501 AND 05000374/2020501
Enterprise Identifier:	I-2020-004-0063
Licensee:	Exelon Generation Company, LLC
Facility:	LaSalle County Station
Location:	Marseilles, IL
Inspection Dates:	October 1, 2020 to December 31, 2020
Inspectors:	J. Bozga, Senior Reactor Inspector G. Edwards, Health Physicist M. Garza, Emergency Preparedness Inspector J. Havertape, Reliability and Risk Analyst W. Schaup, Senior Resident Inspector R. Zuffa, Illinois Emergency Management
Approved By:	Kenneth R. Riemer, Chief Branch 1 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 LaSalle County 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

Testing Does Not Assure the Capability to Connect to the Required Alternate Offsite Power Supply			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373,05000374/2020004-01 Open/Closed	None	71153
The inspectors identified a Green finding of very low safety significance and an associated non-cited violation of Title 10 Code of Federal Regulations, Part 50, Appendix B, Criteria XI, "Test Control," for the licensee's failure to establish a test program to assure that all testing required to demonstrate the crosstie breakers capability to connect to the required alternate offsite power supply would perform satisfactorily in-service was performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Specifically, station surveillance procedure LOS-AP-R2 did not test the operation of applicable portions of the protection system for the crosstie breakers to assure that failures or substandard performance of the crosstie breakers remained undetectable so that the required reliability of the crosstie breakers was maintained.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000374/2019-001-00	LER 2019-001-00 for LaSalle County Station, Unit 2, Safety-Related Electrical Bus Under Voltage Results in Valid Actuation of the Common Emergency Diesel Generator.	71153	Closed

PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On December 19, 2020, the unit was down powered to 84 percent power to perform feedwater valve testing, channel distortion testing, and to perform a rod sequence exchange. The unit was returned to rated thermal power on December 20, 2020. The unit remained at or near rated thermal power for the remainder of the inspection period.

Unit 2 began the inspection period at rated thermal power. On October 24, 2020, the unit was down powered to 85 percent power to make repairs to the number 2 rectifier, perform scram time testing, and make a rod pattern adjustment. The unit was returned to rated thermal power on October 25, 2020. On November 14, 2020, the unit was down powered to 72 percent power to make a rod pattern adjustment. The unit was returned to rated thermal power on November 15, 2020. On December 12, 2020, the unit was down powered to 83 percent power to make repairs to perform turbine and feedwater valve testing, perform channel distortion testing, and make a final rod pattern adjustment for fuel end of cycle. The unit was returned to rated thermal power on December 13, 2020. The unit 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 Disease 2019 (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; conducted plant status activities as described in IMC 2515, Appendix D, “Plant Status”; observed risk-significant activities; and completed onsite portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or portions 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 onsite. 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 evaluated that 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.

In addition, the inspectors evaluated readiness to cope with external flooding for the following areas:

Lake Screen House
Unit 1 Division 3 core standby cooling system pump room
Unit 2 Division 3 core standby cooling system pump room

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 2 low pressure core spray on November 3, 2020
(2) Unit 2 Division 2 diesel generator on November 10, 2020
(3) Unit 1 Division 2 core standby cooling system on November 10, 2020

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (1 Sample)

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 Zone 3I4, Unit 2 reactor building, elevation 673', reactor core isolation cooling and low pressure core spray pump corner room on November 3, 2020

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

(1) The inspectors evaluated the onsite fire brigade training and performance during a live fire training session at Collins Station on October 6, 2020

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 annual operating exam administered between the dates of September 4, 2020 and October 6, 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 a down power of Unit 2 to support minor repair activities and rod pattern adjustments on November 14, 2020

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

(1) The inspectors observed and evaluated a licensed operator requalification training exam (ESG 101, Revision 4) on December 3, 2020

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (4 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) Review of the LaSalle County Station periodic assessment of the maintenance rule program, July 2018 through June 2020
(2) Units 1 and 2 emergency diesel generator air start system maintenance effectiveness
(3) Jacket water leak identified on the Unit 2 Division 3 diesel generator on July 28, 2020
(4) Unit 2 low pressure core spray maintenance effectiveness

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 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 online risk Yellow for functional testing of level 8 trip for reactor core isolation cooling turbine and main turbine on October 1, 2020
(2) Both units online risk Yellow for unit common diesel generator relay calibrations on October 8, 2020
(3) Unit 1 online risk Yellow with high pressure core spray (HPCS) pump inoperable as part of a planned Division 3 diesel generator system outage on October 27, 2020

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (8 Samples)

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

(1) Action Request 4372856, "Unit 1, 250 Vdc Battery, Cell Number Four Positive Post Corrosion"
(2) Action Request 4373154, "Unit 2, 250 Vdc Bus, 221Y to 121Y Bus Crosstie Breaker Broken Clip"
(3) Action Requests 4377417 and 4377514, "Unit 2, Division 2 Diesel Generator Air Start System Failed Pressure Drop Test"
(4) Action Request 4377806, "Unit 1, Reactor Vessel Internals, Core Shroud Fuel Lift Loads"
(5) Action Request 4379968, "Unit 1, Localized Corrosion Spots Identified On 1HP54A Piping"
(6) Action Request 4381024, "Unit 1, Division 1 Annunciators, Unexpected Main Control Room Alarm 1PM01J-A416"
(7) Action Request 4386372, "Unit 1, Division 3 Room Cooler, LOS-DG-SR7 Acceptance Criteria Not Met"
(8) Action Request 4387815, "Unit 2, Division 1 Room Cooling Fan, 2A RHR [residual heat removal] Pump Room Duct Temp Indicates Low"

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) Engineering Change Request 448254, "Addition of a Spring to the Diesel Generator Air Start System Check Valves"

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

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

(1) LOS-DG-R2A, "Unit 2 Division 2 Diesel Generator 24-Hour Endurance Run" on November 17, 2020
(2) LOS-SC-SR1, "Secondary Containment Leak Rate Test" on November 11, 2020

In-Service Testing (IP Section 03.01) (1 Sample)

(1) LOS-RH-Q1, Attachment 1A, "Unit 1A Residual Heat Removal System Operability and In-Service Test" on October 6, 2020

FLEX Testing (IP Section 03.02) (1 Sample)

(1) LOS-FSG-SA1, "Semi-Annual FLEX Generator Functional Run 0FF01KA" on October 8, 2020

71114.04 - Emergency Action Level and Emergency Plan Changes

Inspection Review (IP Section 02.01-02.03) (1 Sample)

(1) The inspectors completed an evaluation of submitted emergency action level and emergency plan changes on December 2, 2020. This evaluation does not constitute NRC approval.

71114.06 - Drill Evaluation

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

(1) The inspectors observed the LaSalle pre-exercise drill on October 6, 2020

71114.08 - Exercise Evaluation Scenario Review

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

(1) The inspectors reviewed and evaluated the proposed scenario for biennial emergency plan exercise on October 14, 2020
(2) On November 23, 2020, Exelon submitted a letter to the NRC (ML20328A292) requesting the postponement of the biennial emergency preparedness exercise from November 17, 2020, to CY 2021 due to health and safety considerations associated with the COVID-19 Public Health Emergency

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) Unit 1 (10/01/2019 - 09/30/2020)
Unit 2 (10/01/2019 - 09/30/2020)

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

(1) Unit 1 (10/01/2019 - 09/30/2020)
Unit 2 (10/01/2019 - 09/30/2020)

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

(1) Unit 1 (10/01/2019 - 09/30/2020)
Unit 2 (10/01/2019 - 09/30/2020)

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

(1) Unit 1 (10/01/2019 - 09/30/2020)
(2) Unit 2 (10/01/2019 - 09/30/2020)

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

(1) Unit 1 (10/01/2019 - 09/30/2020)
(2) Unit 2 (10/01/2019 - 09/30/2020)

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

(1) Unit 1 (10/01/2019 - 09/30/2020)
(2) Unit 2 (10/01/2019 - 09/30/2020)

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

(1) Unit 1 (08/01/2019 - 09/30/2020)
(2) Unit 2 (08/01/2019 - 09/30/2020)

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

(1) 08/01/2019 - 09/30/2020

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) 08/01/2019 - 09/30/2020

71152 - Problem Identification and Resolution

Semi-Annual Trend Review (IP Section 02.02) (1 Sample)

(1) The inspectors reviewed the licensee's corrective action program for potential adverse trends and did not identify any 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) Automatic depressurization system safety relief valve 'S' spuriously actuated

71153 - Follow-up of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (1 Sample)

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

(1) LER 2019-001-00, Safety-Related Electrical Bus Under Voltage Results in Valid Actuation of the Common Emergency Diesel Generator (ADAMS Accession No. ML19119A235). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 4OA3.

INSPECTION RESULTS

Assessment	71152

The inspectors reviewed Action Request 4321045, "Automatic Depressurization System Safety Relief Valve 'S' Spuriously Actuated," as a sample for annual selected issue(s) for follow-up focusing on the following performance attributes of IP 71152:

- complete, accurate and timely documentation in the corrective action program
- consideration of the extent of condition and cause, generic implications, common cause, and previous occurrences
- evaluation and timely disposition of operability and 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
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue
- operating experience is adequately evaluated for applicability and applicable lesson learned are communicated to appropriate organizations and implemented

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.

Assessment	71152

The inspectors reviewed action requests entered into the corrective action program for the following:

- complete, accurate, and timely documentation of the issue identified in the corrective action program
- evaluation and timely disposition of operability and reportability issues
- consideration of extent of condition and cause, generic implications, common cause, and previous occurrences
- classification and prioritization of the problem’s resolution commensurate with the safety significance
- identification of corrective actions that are appropriately focused to correct the problem
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue
- identification of negative trends associated with human or equipment performance that can potentially impact nuclear safety
- operating experience is adequately evaluated for applicability, and applicable lessons learned are communicated to appropriate organizations and implemented

The inspectors completed the review and noted a trend in the area of assessing risk associated with maintenance activities at the sight. Instances included the site online risk modeling tool not updated to reflect the unavailability of a valve used for reactor containment isolation cooling and pressure control function during maintenance on the condensate storage tank for Unit 1, identification of a maintenance evolution that had the potential to place a half scram trip into the reactor protection system on Unit 2, and maintenance using a

crane near power generation lines going offsite on Unit 1. Each individual event was captured in the licensee's corrective action program along with the trend identified by the inspectors as Action Request 4371257. The first two items were briefed out to the licensee as minor violations and reflected on the appropriated condition reports by the licensee. The issue with the crane was document as a 10 CFR 50.65(a)(4) violation in the resident inspector third quarter report in 2020. These items were identified in the earlier portion of the assessment period and corrective actions to date appear successful at addressing the trend. The resident staff will continue to monitor through risk evaluation inspection and the corrective action program.

Testing Does Not Assure the Capability to Connect to the Required Alternate Offsite Power Supply

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373,05000374/2020004-01 Open/Closed	None	71153

The inspectors identified a Green finding of very low safety significance and an associated non-cited violation of Title 10 Code of Federal Regulations, Part 50, Appendix B, Criteria XI, "Test Control," for the licensee's failure to establish a test program to assure that all testing required to demonstrate the crosstie breakers capability to connect to the required alternate offsite power supply would perform satisfactorily in-service was performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Specifically, station surveillance procedure LOS-AP-R2 did not test the operation of applicable portions of the protection system for the crosstie breakers to assure that failures or substandard performance of the crosstie breakers remained undetectable so that the required reliability of the crosstie breakers was maintained.

Description:

On February 28, 2019, LaSalle Unit 2 was shut down in Mode 5 for a refueling outage (L2R17). At 2117, during the performance of station surveillance procedure LOS-AP-R2, "Unit 2 Alternate Power Source Breaker Operability Surveillance," air circuit breaker (ACB) 1414 and ACB 2414 that should have powered the safety-related bus from the alternate offsite power source tripped, resulting in a valid under voltage condition on the Unit 2, Division 1 safety-related bus and actuation of the Division 1 [unit common] diesel generator. The inability to supply power from the alternate offsite circuit for Unit 1 required operators to enter a 72-hour shutdown time clock in accordance with LaSalle Station TS 3.8.1 due to the loss of one required offsite power source. The Division 1 diesel generator responded as expected, Unit 1 remained stable at full power, all Technical Specification (TS) actions were performed and, all affected systems were restored. The licensee reported the event within eight hours to the NRC on March 1, 2019, which was documented as Event Notification 53903, and the licensee documented the event in the corrective action program as Action Request 4225076. This action request stated under recommend actions "Investigate why [ACB] 1414 locked out and tripped especially with only 40-50 amps on the buses 241Y/X."

The purpose of station surveillance procedure LOS-AP-R2 was to demonstrate the manual transfer of the unit power supply from the normal offsite circuit to the alternate offsite circuit which is supplied through the other unit satisfying TS surveillance requirement 3.8.1.8. The surveillance is performed once every two years during a refueling outage. Air Circuit Breaker

1414 is the Unit 1, Division 1 safety-related bus crosstie breaker, and ACB 2414 is the Unit 2, Division 1 safety-related bus crosstie breaker. During power generation operations, these circuit breakers are normally open. The breakers are only closed for testing or during actual accident conditions during which time both circuit breakers are closed manually. This allows Unit 2 to receive offsite power from Unit 1 in the event of a failure of the Unit 2, Division 1 diesel generator or Unit 1 to receive offsite power from Unit 2 in the event of a failure of the Unit 1, Division 1 diesel generator.

During this performance of the surveillance test procedure, operations personnel performed Attachment B of the procedure instead of Attachment A of the procedure that had been performed in previous outages because the Unit 2 unit auxiliary transformer (UAT) was not back feeding the unit, a requirement to use Attachment A. Operations personnel were able to close ACBs 1414 and 2414 in accordance with the surveillance instructions; however, when Step 1.G.5, “Open Bus 241Y Normal Feed Breaker 2412” was performed, ACBs 1414 and 2414 tripped opened concurrently.

Following the surveillance test, it was discovered that the differential current protective relay for ACB 1414, 1487-AP020A, had a flag actuate on the A-phase. The licensee replaced 1487-AP020A with a previously calibrated relay and began diagnostic testing using Attachment C of the surveillance procedure, with one recorder installed on each of the six (6) phases that fed 1487-AP020A. The diagnostic testing under attachment C was completed without ACB 1414 and ACB 2414 tripping; however, the recorders identified that the A-phase of ACB 2414 was not passing current. Troubleshooting continued. The 1487-AP020A relay was removed and it was identified that there was a broken lug on the terminal that fed 1487-AP020A from the Unit 2, Division 1 safety-related bus. As corrective actions, the licensee replaced the broken lug and tested the circuit using the surveillance procedure Attachment B, with the recorders installed and a jumper installed that would maintain ACB 2415. Additional post-maintenance testing was performed to verify the crosstie breakers would function properly. On March 2, 2019 at 12:35, the licensee exited TS 3.8.1 on Unit 1 after declaring the offsite power source operable based on the testing performed on the crosstie breakers. Later that day station surveillance procedure LOS-AP-R2, Attachment C was successfully performed with no jumpers installed.

Additionally, the licensee submitted LER 2019-001-00, "Safety-Related Electrical Bus Under Voltage Results in Valid Actuation of the Common Emergency Diesel Generator," on April 29, 2019, to satisfy reporting requirements to the NRC.

Shortly after the event had occurred, a discussion between the resident inspectors and the shift operations superintendent, about anything that was different about this performance of the surveillance compared to previous performances, discovered that the attachment used during this performance [attachment B] was not normally the one performed and that the current load on the safety buses was higher than the current load that would be seen if they normally performed attachment. Attachment A was the one normally performed and during the performance of that attachment current loads were minimal on the safety bus. Additionally, the inspectors noted a limitation in the procedure that states "That the load on the bus to be crossed-tied to Unit One's 4.16 kV [safety bus] must be minimized such that the breaker rating of 1200A on the unit tie breakers ACB 1414, ACB 2414, ACB 1424 and ACB 2424 must not be exceeded." When asked, the shift operations superintendent stated that to meet the intent of the limitation and to minimize impact to the plant if something happened during the surveillance, operations minimized bus loading to the maximum extent practical.

With the help of regional electrical engineering subject matter expert, the inspectors obtained the relevant work orders, corrective action documents, causal products, and LER to review and determined the following.

The unit tie phase A/B/C differential current relays (1487-AP020A/B/C) are configured such that they will not pick up if the differential current sensed by the relay is less than 0.5 amps (A). The signal provided to 1487-AP020A is the A-phase bus current transformers (CTs) at ACB 1414 and ACB 2414. These CTs each have a ratio of 1200:5 A. As such, the minimum differential bus current that will pick up 1487-AP020A is 120 A. Relays 1487-AP020A/B/C will never pick up if the bus current is less than 120 A.

With the lug broken at the ACB 1414 CT, the differential current seen by 1487-AP020A would be the same as the actual bus current.

During the L2R17 testing under LOS-AP-R2, the following was observed when the strip chart recorder was connected:

- When Attachment C was performed on March 2, 2019, at 02:08, 0.25 A of secondary CT current was observed (60 A bus current). As this is less than the 0.5 A (120 A bus current) required to pick up 1487-AP020A, the relay could not have picked up (even with a broken CT lug)
- When Attachment B was performed on March 2, 2019, at 12:25, 1.75 A secondary CT current was observed (420 A bus current). This is greater than current required to pick up 1487-AP020A (if the CT lug had not previously been repaired).

There is no record of bus current during previous performances of LOS-AP-R2 (i.e. earlier in L2R17 or during previous RFOs); however, the above data indicates that performance of Attachment C (or Attachment A) will not guarantee adequate current to pick up 1487-AP020A/B/C in the presence of a faulty sensing circuit (e.g. a broken CT lug).

The inspectors reviewed previous performances of the surveillance procedure.

LOS-AP-R1, Unit 1 Alternate Power Source Breaker Operability Surveillance, is performed every Unit 1 refueling outage (PMID 81429-01).

Recent history as follows:

WO	Date	Att Performed
4762067	Feb 2020	Att A
1906733	Mar 2018	Att A
1716099	Mar 2016	Att A
1520229	Feb 2014	Att A

LOS-AP-R2, Unit 2 Alternate Power Source Breaker Operability Surveillance, is performed every Unit 2 refueling outage (PMID 81430-01).

Recent history as follows:

WO	Date	Att Performed
4608404	Mar 2019	Att C
1812255	Mar 2017	Att A

1620125	Feb 2015	Att A
1415318	Feb 2013	Att A

The inspectors determined that the last physical inspection of the wire lug occurred during PMID 00060290-01 the 1AP04E-12 cubicle inspection using station procedure LES-GM-103, "Inspection of 4.16 kV and 6.9 kV ITE Circuit Breakers," in accordance with step 4.24.10 that states: CHECK terminal boards for loose connections and TIGHTEN as necessary (including top cubicle above breaker compartment).

The broken CT lug was located in the “top cubicle above breaker compartment” 1AP04E-12 it would be expected that a broken lug would have been identified during this inspection. PMID 00060290-01 was last performed on October 28, 2014, under Work Order 1188553-01.

The licensee’s quality assurance topical report, Revision 96, Section 11.2.6 "Surveillance Test," states, "The company’s test program covers surveillance testing during the operational phase to provide assurances that failures or substandard performance do not remain undetected and that the reliability of safety-related systems in maintained."

The LaSalle Final Safety Analysis Report, Section 8.3.1.2 "Analysis," states in part, "Provisions have been made in the design of offsite and onsite power systems for the inspection and testing of appropriate parts of the systems. Periodic tests can be made of major portions of the power systems under conditions simulating the design conditions."

The inspectors noted that the surveillance procedure does not provide any instructions to ensure that a minimum load should be on the bus to ensure the CTs are functioning properly and that the licensee does not perform any other maintenance or testing that would demonstrate the CTs would will perform satisfactorily in-service.

The inspectors final determination was that station surveillance procedure LOS-AP-R2 could be performed with satisfactory results without demonstrating that the CTs would perform satisfactorily in-service and that this was the only maintenance or testing the licensee performs that would demonstrate the CTs perform satisfactorily in-service.

Corrective Actions: The licensee repaired the broken lug on the 'A' phase of the current transformer and satisfactorily demonstrated that the CTs would perform in-service though surveillance and additional testing measures. The licensee has made changes to the station surveillance procedures to ensure the CTs are verified to perform satisfactorily in-service.

Corrective Action References: Action Requests 4225076, 4225628 and 4362548

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee's testing program (to demonstrate the manual transfer of the unit power supply from the normal offsite circuit the alternate offsite circuit) for the crosstie breakers did not assure that failures or substandard performance of the crosstie breakers remained undetectable so that the required reliability of the crosstie breakers was maintained, and was therefore a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Procedure Quality 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.

Significance: The inspectors assessed the significance of the finding using Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” The inspectors reviewed the performance deficiency in accordance with the screening criteria contained in IMC 0609, Appendix A for inspection findings at-power. The inspectors determined that a detailed risk evaluation was required because they answered "Yes" to the relevant portion of Question 3, "Does the finding represent an actual loss of function of at least a single train for greater than its TS-allowed outage time?" The TS-allowed outage time for one required offsite power source is 72 hours. The licensee stated in Action Request 4225076 that a broken lug was the cause of ACB-1414 failing to close as required on February 28, 2019. Therefore, the inspectors concluded that the affected offsite power source would have likely failed to perform its function and that this condition likely existed since the licensee had last opened the ACB-1414 cabinet door on October 6, 2016. As a result, a detailed risk evaluation was required.

A regional senior reactor analyst performed a conditional analysis of the ACP-1414 breaker being non-functional for a one-year exposure time. The internal events results were a delta-CDF = 3E-8/year and the external events results were qualitatively and quantitatively determined to be less than a delta-CDF of 1E-6/year for a total of < 1E-6/year. The following factors were considered and included in the quantification:

- mitigating strategies equipment (a.k.a., FLEX)
- licensee plant-specific action basic event values were used
- common cause failure probabilities were propagated in the model
- external events contributions were assessed using the licensee’s fire probabilistic risk assessment base model and some FLEX credit was applied
- hardened containment venting was applied

Based on information from the inspectors, no recovery probabilities were applied for the failed crosstie breaker. For a thorough explanation of how the risk analysis was performed, including a description of epistemic uncertainties, please see the attached detailed risk evaluation.

Cross-Cutting Aspect: None

Enforcement:

Violation: Title 10 CFR 50, Appendix B, Criterion XI, “Test Control,” states, “A test program shall be established to assure that all testing required to demonstrate that SSCs will perform satisfactorily in-service is performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. The test program shall include, as appropriate, operational tests during nuclear power plant operation.”

The LaSalle Final Safety Analysis Report, Section 8.3.1.2 "Analysis," states in part, "Provisions have been made in the design of offsite and onsite power systems for the inspection and testing of appropriate parts of the systems. Periodic tests can be made of major portions of the power systems under conditions simulating the design conditions."

Contrary to the above, since 1981, the licensee failed to establish a test program to assure that all testing required to demonstrate the crosstie breakers capability to connect to the required alternate offsite power supply would perform satisfactorily in-service was performed

in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Specifically, the licensee failed to assure the performance of all testing required to demonstrate: (1) the operability and functional performance of the crosstie breakers; and (2) the operability of the alternate source of offsite power as a whole and, under conditions as close to design as practical, the full operation sequence that brings the alternate offsite power source into operation, including operation of applicable portions of the protection system, and the transfer of power among the nuclear power unit.

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 December 31, 2020, the inspectors presented the integrated inspection results to Mr. J. Washko, Site Vice President, and other members of the licensee staff.
- On October 8, 2020, the inspectors presented the annual licensed operator requalification examination inspection results to Mr. K. Heuser, Regulatory Exam Author Licensed Operator Requalification Training, and other members of the licensee staff.
- On November 9, 2020, the inspectors presented the 71151 performance indicator verification inspection results to Mr. J. Moser, Radiation Protection Manager, and other members of the licensee staff.
- On December 2, 2020, the inspectors presented the IP 71114.04 exit meeting inspection results to Mr. D. Moore, Senior Manager - Emergency Preparedness, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	AR 4381678	2020 Lake Dike Inspection Results	11/02/2020
	Procedures	LTS-1000-32	LaSalle Cooling Pond Dike Inspection	10
		LTS-1000-4	Core Standby Cooling System Pond Surveillance	16
	Work Orders	WO 4849167	Core Standby Cooling System Pond Sediment Deposition Check	07/09/2020
71111.11A	Procedures	TQ-AA-150-F25	LaSalle 2020 LORT Annual Exam Status Report	10/02/2020
71111.12	Corrective Action Documents	AR 4368082	LPCS Discharge Pressure Low Alarm Would Not Clear Following Pump Run	09/08/2020
	Engineering Evaluations	LaSalle Station, Units 1 and 2, July 2018 through June 2020	Periodic Assessment of the Maintenance Rule Program	10/05/2020
	Miscellaneous	AR 4359288	(A)(1) Determination for Jacket Water Leak Identified on the 2B Diesel Generator	10/29/2020
		AR 4359288	Maintenance Rule Functional Failure Determination for Jacket Water Leak Identified on the 2B Diesel Generator	10/29/2020
		LAS-1-DG	Diesel Generator Maintenance Rule Function Scope Basis Document	11/02/2020
		LAS-2-LP	Low Pressure Core Spray Maintenance Rule Basis Document	11/02/2020
		Low Pressure Injection	Health Group Issue Action Plan	10/03/2020
		LS-MRULE-010	PRA Application Notebook, LaSalle Station Maintenance Rule (a)(3) Assessment Input	0
71111.15	Corrective Action Documents	AR 4372243	U1 250 Vdc Ground Alarm	09/26/2020
		AR 4372856	1DC01E Cell #4 Positive Post Identified with Corrosion	09/26/2020
		AR 4373164	Revise Operations DC Battery Procedures	09/30/2020
		AR 4377417	2DG-17MB Flange Leaking During PMT	10/18/2020
		AR 4377514	2A DG 'B' Air Compressor Check Valve Test Failed LOS-DG-Q2	10/18/2020
		AR 4377806	LaSalle Unit 1 Core Shroud Fuel Lift Loads	10/19/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		AR 4379968	Localized Corrosion Spots Identified on 1HP54A Piping	10/27/2020
		AR 4381024	Unexpected MCR Alarm 1PM01J-A416	10/30/2020
		AR 4387815	2A RHR Pump Room Duct Temp Indicates Low	12/03/2020
	Corrective Action Documents Resulting from Inspection	AR 4372880	NRC Identified - 250 Vdc Battery Inter-Cell Resistance Readings Not Taken	09/29/2020
	Drawings	1E-1-4011KG	Schematic and Wiring Diagram Annunciator and Sequential Events Recorder Logic System 1PA03J System Part 55	F
		1E-1-4011KH	Schematic and Wiring Diagram Annunciator and Sequential Events Recorder Logic System 1PA03J System Part 56	F
		1E-2-4089AA	Schematic Diagram Core Standby Cooling System VY, Part 1	E
		1E-2-4089AE	Schematic Diagram Core Standby Cooling System VY, Part 5	B
	Engineering Changes	EC 388089	Evaluation of Unit 1 Core Shroud Inspection Results from L1R14	0
		EC 633091	1VY02A DP Acceptance Criteria	0
	Engineering Evaluations	EC 632877	1HP54A Structural Integrity Evaluation Using Code Case N-513	0
	Work Orders	WO 5046987	LOS-DG-SR7, Attachment D, 1VY02A DP Test	11/24/2020
71111.18	Engineering Changes	ECR 448254	Design Engineering Evaluation of Installing the Spring In 2DG049B	10/20/2020
	Engineering Evaluations	CHRON 115629	Engineering Work Request E92-074 Removal of Springs from Check Valves 0DG023A/B and 1/2DG049A/B	05/11/1992
71111.22	Procedures	LOS-CS-SR1	Secondary Containment Leak Rate Test	8
		LOS-LP-Q1, Attachment 1A	Unit 1 Low Pressure Core Spray Operability and In-Service Test	59
		LOS-RH-Q1, Attachment 1A	Unit 1 A Residual Heat Removal System Operability and In-Service Test	95
	Work Orders	WO 1886736	Operations LOS-CS-SR1, Secondary Containment Leak Rate	11/11/2020
		WO 4796552	In-Service Test - Comprehensive Pump Test for 1E21-C001	12/03/2020
		WO 5029860	Semi-Annual FLEX Generator Functional Run 0FF01KC	10/08/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		WO 5029861	Semi-Annual FLEX Generator Functional Run 0FF01KB	10/08/2020
		WO 5029862	Semi-Annual FLEX Generator Functional Run 0FF01KA	10/08/2020
		WO 5060585	Operations LOS-RH-Q1, 1A RHR Attachment 1A	10/05/2020
71114.04	Corrective Action Documents	AR 4325295	Perform an Impact Review of EAL Revisions from EOP/SAMG Revision 4	03/10/2020
		AR 4328154	EP FAQ EAL Change License Amendment Implementation Actions	03/20/2020
		AR 4329864	NOS ID: Revise Standardized Emergency Plan	03/26/2020
		AR 4334253	Emergency Plan: CDAM 50.54(q) Potential Deficiencies	04/09/2020
	Miscellaneous	Eval No. 20-35	EALs LaSalle Station	05/28/2020
		Eval No. 19-29	Exelon Nuclear Standardized Radiological Emergency Plan	09/04/2019
		Eval No. 19-65	Exelon Nuclear Standardized Radiological Emergency Plan	09/06/2019
		Eval No. 19-79	Various Station Emergency Preparedness Annexes	11/08/2019
71151	Miscellaneous		Alert and Notification System Reliability Performance Indicator Records	10/01/2019 - 09/30/2020
			Emergency Response Organization Drill Participation Performance Indicator Records	10/01/2019 - 09/30/2020
			Drill and Exercise Performance - Performance Indicator Records	10/01/2019 - 09/30/2020
		LS-AA-2090	Monthly Data Elements for NRC Reactor Coolant System Specific Activity	August 2019 - September 2020
		LS-AA-2140	Monthly Data Elements for NRC Occupational Exposure Control Effectiveness	August 2019 - September 2020
		LS-AA-2150	Monthly Data Elements for RETS/ODCM Occurrences	August 2019 - September 2020
71152	Corrective Action Documents	AR 4321045	Automatic Depressurization System Safety Relief Valve Spuriously Actuated	02/24/2020
	Miscellaneous	LAS-31541	Failure Analysis of a Switch, Pressure, Range 200-1350 psi for LaSalle	1
71153	Corrective Action Documents	AR 4225870	4,0 Critique for LOS-AP-R2	03/03/2019
		AR 4362548	PCRA Requested for LOS-AP-R1 and LOS-AP-R2	08/12/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		ECAP 4225076-03	Breaker Tip Due to Terminal Lug Degradation	04/11/2019
	Procedures	LOS-AP-R2	Unit 2 Alternate Power Source Breaker Operability Surveillance	6
	Work Orders	WO 4893155	ACB 1414 Had a Lockout Trip While Performing LOS-AP-R2	03/01/2019