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

November 26, 2019

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

SUBJECT: REISSUE – LASALLE COUNTY STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000373/2019003; 05000374/2019003 AND 07200070/2019001

Dear Mr. Hanson:

The NRC identified that the inspection report sent to you dated November 7, 2019 (ML19311C536) inadvertently failed to reference the Independent Spent Fuel Storage Installation Inspection Report number 07200070/2019001. As a result, the NRC is reissuing the report in its entirety with the updated subject. None of these changes affected the technical content of the report.

On September 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at LaSalle County Station, Units 1 and 2. On October 9, 2019, the NRC inspectors discussed the results of this inspection with Mr. Phil Hansett, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

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

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

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; and the NRC Resident Inspector at LaSalle.

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 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Kenneth R. Riemer, Chief
Branch 1
Division of Reactor Projects

Docket Nos. 05000373; 05000374 and
07200070/2019001

License Nos. NPF-11 and NPF-18

Enclosure:
As stated

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Letter to Bryan Hanson from Kenneth Riemer dated November 26, 2019.

SUBJECT: REISSUE – LASALLE COUNTY STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000373/2019003; 05000374/2019003; AND 07200070/2019001

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000373; 05000374; and 07200070
License Numbers:	NPF-11 and NPF-18
Report Numbers:	05000373/2019003; 05000374/2019003 and 07200070/2019001
Enterprise Identifier:	I-2019-003-0069 and I-2019-001-0069
Licensee:	Exelon Generation Company, LLC
Facility:	LaSalle County Station, Units 1 and 2
Location:	Marseilles, IL
Inspection Dates:	July 01, 2019 to September 30, 2019
Inspectors:	M. Garza, Emergency Preparedness Inspector J. Havertape, Resident Inspector C. Phillips, Project Engineer D. Sargis, Resident Inspector W. Schaup, Senior Resident Inspector C. St. Peters, Reactor Engineer R. Zuffa, Illinois Emergency Management Agency
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, Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to https://www.nrc.gov/reactors/operating/oversight.html for more information.

List of Findings and Violations

Failure to Comply with National Fire Protection Association 13, "Standard for the Installation of Sprinkler Systems," Requirements During Installation of the Unit 1 Cable Spreading Room Preaction Fire System			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373,05000374/2019003-01 Open/Closed	[P.1] - Identification	71111.05Q
The inspectors identified a finding of very low safety significance (Green) and an associated non-cited violation of the Unit 1 License Condition C.25, and Unit 2 License Condition C.15, Fire Protection Program, for the failure to install the cable spreading room preaction fire suppression system in accordance with National Fire Protection Association (NFPA) 13, "Standard for the Installation of Sprinkler Systems," 1976 Edition. Specifically, the licensee failed to provide a preaction fire suppression system that complied with Section 3-10.2.1 of NFPA 13. The inspectors determined that the written instructions to drain the preaction fire protection piping allowed water to remain in the system for prolonged periods. Water remaining in the system led to a thru-wall leak rending the fire suppression system in the cable spreading room inoperable for 9 days during repairs.			

Failure to Implement the Primary Containment Leakage Rate Testing Program for Traversing Incore Probes System Containment Isolation Valve 2C51-J004C			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000374/2019003-02 Open/Closed	[H.6] - Design Margins	71152
The inspectors identified a finding of very low safety significance (Green) and an associated non-cited violation of Technical Specification 5.5.13, Primary Containment Leakage Rate Testing Program, for the licensee's failure to perform a cause determination and identify corrective actions that focus on those activities that can eliminate the identified cause of a failure with appropriate steps to eliminate recurrence for a failed Type C leak rate test. Specifically, after repeated Type C leak rate failures of the traversing incore probe system 2C isolation valve 2C51-J004C, the licensee neither performed a cause determination nor took corrective actions.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000374/2018-001-00	LER 2018-001-00 For LaSalle County Station, Unit 2, Manual Reactor Scram due to Main Condenser Vacuum Degradation	71153	Closed
LER	05000374/2018-001-01	LER 2018-001-01 for LaSalle County Station, Unit 2, Manual Reactor Scram due to Main Condenser Vacuum Degradation	71153	Closed
LER	05000373/2017-007-00	Low Pressure Core Spray System Inoperable Due to Loss of Cooling	71153	Closed

PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On September 14, 2019, the unit was down powered to approximately 77 percent to support various surveillance tests and a rod pattern adjustment. The unit was returned to rated thermal power on September 15, 2019, and remained at or near rated thermal power for the reminder of the inspection period.

Unit 2 began the inspection period at rated thermal power. On July 24, 2019, in response to receiving a half close signal to the 2C main steam isolation valve, the unit was down powered to 85 percent to mitigate the transient to the plant if the valve received the other close signal. On July 25, 2019, while troubleshooting the 2C main steam isolation valve, the valve closed and the licensee further down powered the unit to 75 percent to meet requirements in the station's Technical Specifications. Later the same day, the unit was further down powered to 40 percent to perform repairs on the 2C main steam isolation valve. The unit was returned to full power on July 26, 2019. On September 7, 2019, the unit was down powered to approximately 75 percent to support various surveillance tests and a rod pattern adjustment. The unit was returned to rated thermal power on September 8, 2019, and remained at or near rated thermal power for the reminder of the inspection period.

INSPECTION SCOPES

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

Summer Readiness Sample (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated summer readiness of offsite and alternate alternating current (AC) power systems.

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 standby liquid control system on July 17, 2019
(2) Unit 2 Division 3 emergency diesel generator on August 9, 2019

(3) Unit 1 Division 2 emergency diesel generator during maintenance on the Division 1 emergency diesel generator on September 12, 2019

71111.04S - Equipment Alignment

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

(1) The inspectors evaluated system configurations during a complete walkdown of the Unit 1 high pressure core spray system on September 30, 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 4D1, auxiliary building, elevation 749', Unit 1 cable spreading room on July 5, 2019
(2) Fire Zone 2E, reactor building, elevation 761', Unit 1 general area and reactor water cleanup pump cubicle on July 5, 2019
(3) Fire Zone 4D2, auxiliary building, elevation 749', Unit 2 cable spreading room on July 9, 2019
(4) Fire Zone 4E3, auxiliary building, elevation 731', Unit 1 Division 2 switchgear room on July 31, 2019
(5) Fire Zone 4E2, auxiliary building, elevation 731', Unit 1 auxiliary electrical equipment room on July 31, 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 1 cable spreading room and auxiliary electric equipment room

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

The inspectors evaluated readiness and performance of:

(1) Unit 1 high pressure core spray diesel generator heat exchanger

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

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

(1) The inspectors observed and evaluated licensed operator performance in the control room during unexpected closure of the 2C main steam isolation valve on July 25, 2019.
(2) The inspectors observed and evaluated licensed operator performance in the control room during a rod sequence exchange and main steam line isolation testing on September 7, 2019.

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

(1) The inspectors observed and evaluated out of the box examination ESG 126 on August 6, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (4 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 on July 1, 2019
(2) Unit 2 reactor recirculation system following identification of flow control valve bearing degradation in L2R17
(3) Unit 2 control rod drive system
(4) Unit 1 scoping of safety-related valves into the Generic Letters 89-10 and 96-05 program

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) risk assessment performed for crane near offsite power lines, Units 1 and 2 containment structures and Units 1 and 2 hardened vents on August 12, 2019
(2) planned online Yellow risk on both Units 1 and 2 during maintenance to the unit common diesel generator on September 9, 2019
(3) planned online Yellow risk during maintenance on the high pressure core spray diesel generator on September 23, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) operability of 1B21-F065A and 1B21-F065B, Unit 1 feedwater primary containment isolation valves, with a leak on line 1FW011A, Unit 1 reactor water cleanup return line
(2) operability of Unit 2 reactor water cleanup leak detection system due to high temperature alarm in the 'A' reactor water cleanup heat exchanger room
(3) operability of the Unit 2A flow control valve and recirculation loop with the flow control valve locked up for hydraulic system maintenance
(4) operability of Divisions 1 and 2 diesel generators with heat gain from the diesel engine and the diesel generator
(5) environmental qualification of 1G33-F040, Unit 1 reactor water cleanup return primary containment isolation valve
(6) operability of the Unit 2 cable spreading room preaction fire system with a thru-wall leak

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

(1) Unit 1 Division 3 emergency core cooling system room cooler replacement under Engineering Change 622652
(2) Unit 1 reactor water cleanup system feedwater return line leak repair and addition of drain ports under IT-7000-M-PP-04B

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Unit 1 reactor water cleanup system following class 2 piping repair of feedwater return line, 1FW11A, on July, 29, 2019
(2) Unit 1 reactor core isolation cooling pump after maintenance September 5, 2019
(3) common diesel generator following cooling water maintenance window on September 12, 2019
(4) Unit 1 high pressure core spray diesel generator heat exchanger on September 26, 2019
(5) Unit 1 Division 3 diesel generator on September 27, 2019

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (1 Sample)

(1) Unit 0 common diesel generator operability test attachment 0-Idle on August 14, 2019

Inservice Testing (IP Section 03.01) (2 Samples)

(1) Unit 2A residual heat removal pump biennial comprehensive in-service test on August 15, 2019
(2) Unit 1 standby gas treatment system operability and in-service test on September 7, 2019

71114.04 - Emergency Action Level and Emergency Plan Changes

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

(1) The inspectors evaluated the following submitted Emergency Action Level and Emergency Plan changes:
- Evaluation 18-45, “Exelon Nuclear Standardized Radiological Emergency Plan,” Revision 30

This evaluation does not constitute NRC approval.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS06: Emergency AC Power Systems (IP Section 02.05) (2 Samples)

(1) Unit 1 (07/01/2018 - 06/30/2019)
(2) Unit 2 (07/01/2018 - 06/30/2019)

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

(1) Unit 1 (07/01/2018 - 06/30/2019)
(2) Unit 2 (07/01/2018 - 06/30/2019)

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

(1) Unit 1 (07/01/2018 - 06/30/2019)
(2) Unit 2 (07/01/2018 - 06/30/2019)

71152 - Problem Identification and Resolution

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

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

(1) Action Request 1136071, "Potential Non-Conservative Technical Specification for Diesel Generator Fuel Oil"
(2) Action Request 4223654, "2C51-J004C Repair Scope Add"

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

Event Report (IP Section 03.02) (2 Samples)

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

(1) LER 05000373/2017-007-00, Low Pressure Core Spray System Inoperable Due to Loss of Cooling (ADAMS Accession: ML17230A288)

The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER therefore no performance deficiency was identified. The inspectors also concluded that no violation of NRC requirements occurred.

(2) LER 05000374/2018-001-00 and LER 05000374/2018-001-01, Manual Reactor Scram Due to Main Condenser Vacuum Degradation (ADAMS Accession: ML 18303A190)

The circumstances surrounding this LER are documented in report Section 71153. This LER was closed as a finding (05000374/2019001-02) in NRC Integrated Inspection Report 2019001.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation at Operating Plants

Operation of an Independent Spent Fuel Storage Installation at Operating Plants (1 Sample)

(1) The inspectors evaluated the licensee's operation of the independent spent fuel storage installation from July 8 to July 12, 2019. Specifically, the inspectors evaluated:

- the material, and radiological condition of the ISFSI and loaded storage casks through reviewing periodic structural evaluation, and performing and reviewing independent and the licensee's radiological surveys on July 11, 2019
- a heavy lift of the loaded transfer cask from the spent fuel pool to the cask processing area on July 9, 2019
- welding of the root pass of Multi-Purpose Canister (MPC) No. 68-598 lid-to-shell weld on July 10, 2019
- non-destructive evaluations, including helium leak testing, of the lid to shell and port cover welds for MPC No. 68-598 on July 9-11, 2019

- processing of MPC No. 68-598 for storage on July 10-11, 2019, including removal of bulk water, drying using forced helium dehydration, and backfill with helium
- the fuel selection for MPC No. 68-598, loaded on July 9, 2019
- changes to the 72.212 report and changes screened and evaluated using 10 CFR 72.48

INSPECTION RESULTS

<table>
<tr><td colspan="4">Failure to Comply with National Fire Protection Association 13, “Standard for the Installation of Sprinkler Systems,” Requirements During Installation of the Unit 1 Cable Spreading Room Preaction Fire System</td></tr>
<tr><td>Cornerstone</td><td>Significance</td><td>Cross-Cutting Aspect</td><td>Report Section</td></tr>
<tr><td>Mitigating Systems</td><td>Green
NCV 05000373,05000374/2019003-01
Open/Closed</td><td>[P.1] - Identification</td><td>71111.05Q</td></tr>
<tr><td colspan="4">The inspectors identified a finding of very low safety significance (Green) and an associated non-cited violation of the Unit 1 License Condition C.25, and Unit 2 License Condition C.15, Fire Protection Program, for the failure to install the cable spreading room preaction fire suppression system in accordance with National Fire Protection Association (NFPA) 13, “Standard for the Installation of Sprinkler Systems,” 1976 Edition. Specifically, the licensee failed to provide a preaction fire suppression system that complied with Section 3-10.2.1 of NFPA 13. The inspectors determined that the written instructions to drain the preaction fire protection piping allowed water to remain in the system for prolonged periods. Water remaining in the system led to a thru-wall leak rending the fire suppression system in the cable spreading room inoperable for 9 days during repairs.</td></tr>
<tr><td colspan="4">Description:

On July 1, 2019, the main control room received a fire alarm for the Unit 1 cable spreading room starting both diesel driven fire pumps. Equipment operators dispatched to the cable spreading room determined that the fire alarm was invalid but discovered a leak from the cable spreading room preaction fire suppression system. The cable spreading room preaction suppression system was isolated to stop the leak. The licensee entered the appropriate fire impairments for the cable spreading room preaction fire suppression system being out of service and instituted the required fire watch. The licensee documented this in the corrective action program as Action Request (AR) 4261004.

The licensee determined that a faulty detector caused the spurious fire alarm. By design, the alarm charged the preaction fire suppression piping, normally dry, with water resulting in the discovery of the thru-wall leak in the piping. To address the faulty detector, the licensee replaced the detector and attempted to drain the fire suppression system using the NFPA code-required system main drain located near the deluge valve. The licensee determined the leak was a 3/8-inch hole caused by corrosion through the 4-inch diameter main supply header that is made of carbon steel. The licensee replaced the affected piping along with an additional 6 feet of corroded piping identified during extent of condition inspections. During replacement of the piping, the piping showed evidence that standing water had been in the lower half of the piping for a significant length of time. The licensee restored the cable spreading room preaction fire system to service and exited all applicable Technical</td></tr>
</table>

Requirements Manual actions. Additionally, the licensee determined that the thru-wall leak in the pipe would not have impacted the ability of the fire protection system to perform its function.

The inspectors reviewed operating experience associated with spurious actuation and inadequate draining of preaction fire systems. The inspectors noted that Information Notice 2013-06 discussed a previous issue at LaSalle station pertaining to inadequate draining of the preaction fire system in the chemistry overlab area. The draining location used during the flow surveillance was such that portions of the system were not properly drained. This condition lead to the piping corroding excessively and sediment build up that clogged the sprinkler piping and spray nozzles.

The inspectors discussed fire protection system restoration and post-maintenance testing with the shift manager. Following completion of detector and piping repairs, the licensee intended to perform a 30 psi system leak tightness check using the deluge supervisory air compressor as the pressure source. The inspectors raised a concern that because the main supply header dropped in elevation upon entering the cable spreading room and was lower in elevation than the system drain valve, the system could not have been completely drained following system reset from the spurious actuation. The inspectors expressed that, as documented in Information Notice 2013-06, standing water in preaction piping may lead to significant corrosion. The licensee documented the inspectors' concerns in the corrective action program as AR 4261784. In response to the discussion with the inspectors, the licensee used an alternate method to drain the system by removing low point pipe caps on the 3/4-inch nozzle spray lines to completely drain all portions of the system.

Additionally, the inspectors walked down the Unit 2 cable spreading room fire suppression systems and noted evidence of thru-wall leak in the Unit 2 cable spreading room fire suppression system piping. The licensee documented in the corrective action program as AR 4262877. The licensee performed an operability evaluation and determined that the thru-wall leak in the pipe would not have impacted the ability of the fire protection system to perform its function.

The inspectors reviewed licensee's commitments in their fire protection report and determined that the licensee was committed to NFPA 13, “Standard for the Installation of Sprinkler Systems,” 1976 Edition. The inspectors noted that Section 3-10.2 “System or Main Drain Connections and Drain Valves,” Part 3-10.2.1 required that “Provisions shall be made to properly drain all parts of the system.” Contrary to this requirement, the inspectors noted that operating procedures used to reset the cable spreading room preaction system following a spurious actuation, as well as procedures to functionally test the system, directed the operators to use the main drain valve to remove water from the system. The inspectors determined that these procedures would not drain all the preaction piping and would lead to corrosion consistent with that seen on the removed sections of fire protection supply header. The inspectors discussed their findings with the licensee who documented them in the corrective action program as AR 4262090.

Corrective Actions: The licensee planned to revise station procedures to ensure adequate draining of the preaction fire system piping.

Corrective Action Reference: AR 4261784

Performance Assessment:

Performance Deficiency: The inspectors determined that the failure to provide a preaction fire suppression system that complied with Section 3 -10.2.1 of NFPA-13 was a performance deficiency. Specifically, written instructions were such that water remained in the system for prolonged periods resulting in a thru-wall leak due to excessive corrosion.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Protection Against External Factors 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. The failure to comply with NFPA 13 provisions for preaction sprinkler installation led to standing water in a dry pipe fire system and a thru-wall leak. Therefore, there was an adverse effect on the protection against external factors cornerstone attribute.

Significance: The inspectors assessed the significance of the finding using Appendix F, "Fire Protection and Post - Fire Safe Shutdown SDP." The inspectors determined that the finding category was "Fixed Fire Protection Systems," and the cable spreading room preaction fire system does not comply with NFPA 13, "Installation of Sprinkler Systems," 1976 Edition. Specifically, the cable spreading room preaction fire system supply piping does not comply with Section 3-10.1.3 in that the system could not be drained to comply with the requirements of Section 3-10.2. The fire protection piping leak did not result in a loss of function; therefore, it meets the definition of low degradation per IMC 0609 App F, Attachment 2, resulting in the finding screening as having very low safety significance (Green).

Cross-Cutting Aspect: P.1 - Identification: The organization implements a corrective action program with a low threshold for identifying issues. Individuals identify issues completely, accurately, and in a timely manner in accordance with the program. Specifically, operations personnel routinely drained the preaction fire system with the deluge valve without identifying that the system could not be completely drained due to the piping configuration.

Enforcement:

Violation: License Conditions 2.C(25) and 2.C(15) for Units 1 and 2, respectively, required the licensee to implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report and as approved through Safety Evaluation Reports. Appendix H, "Fire Hazards Analysis," of the Updated Final Safety Analysis Report, stated that the appendix had to be relocated to the LaSalle County Station Fire Protection Report (FPR). Section H.3.4.8, "Unit 1 Cable Spreading Room – Fire Zone 4D1" and Section H.3.4.9, "Unit 2 Cable Spreading Room - Fire Zone 4D2" of the FPR stated that a preaction suppression system was provided. The FPR listed NFPA 13, "Installation of Sprinkler Systems," 1976 Edition, as the code of record. National Fire Protection Association 13, Section 3-10.2.1 requires that provisions shall be made to properly drain all parts of the system.

Contrary to the above, as of July 5, 2019, the licensee did not comply with License Conditions 2.C(25) and 2.C(15) for Units 1 and 2, by failing to provide provisions to drain all parts of the preaction fire protection system in Fire Zones 4D1 and 4D2, which was required by NFPA 13, "Installation of Sprinkler Systems," 1976 Edition, Section 3-10.2.1. Specifically, written instructions were such that water remained in the system for prolonged periods resulting in a thru-wall leak due to excessive corrosion.

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

Failure to Implement the Primary Containment Leakage Rate Testing Program for Traversing Incore Probes System Containment Isolation Valve 2C51-J004C

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000374/2019003-02 Open/Closed	[H.6] - Design Margins	71152

The inspectors identified a finding of very low safety significance (Green) and an associated non-cited violation of Technical Specification 5.5.13, Primary Containment Leakage Rate Testing Program, for the licensee's failure to perform a cause determination and identify corrective actions that focus on those activities that can eliminate the identified cause of a failure with appropriate steps to eliminate recurrence for a failed Type C leak rate test. Specifically, after repeated Type C leak rate failures of the traversing incore probe system 2C isolation valve 2C51-J004C, the licensee neither performed a cause determination nor took corrective actions.

Description:

On February 23, 2019, the licensee performed a local leak rate test (Type C) of the 2C traversing incore probe system (TIP) primary containment isolation valve 2C51-J004C in accordance with station procedure LTS-100-42. The leakage past the valve was determined to be 24.3 standard cubic feet per hour (SCFH). This value exceeded the administrative limit of 10 SCFH defined in procedure LTS-100-42. The licensee documented the issue in AR 4222980. The AR documented previous failures to meet the administrative limit of 10 SCFH. Additionally, the AR documented that the primary containment was operable since the additional leakage identified did not exceed 0.6 La. The AR also generated a work request for operations and maintenance to troubleshoot, repair or replace the valve.

The inspectors reviewed the testing history and corrective action documentation for 2C51-J004C and determined the following:

On February 22, 2015, the licensee performed a local leak rate test of the 2C TIP primary containment isolation valve 2C51-J004C in accordance with station procedure LTS-100-42. The leakage past the valve was determined to be 15.53 SCFH. This value exceeded the administrative limit of 10 SCFH defined in procedure LTS-100-42. The licensee documented the issue in AR 2457086. The AR documented that the primary containment was operable since the additional leakage identified did not exceed 0.6 La. No further actions were taken.

On February 23, 2017, the licensee performed a local leak rate test of the 2C TIP primary containment isolation valve 2C51-J004C in accordance with station procedure LTS-100-42. The leakage past the valve was determined to be 18.97 SCFH. This value exceeded the administrative limit of 10 SCFH defined in procedure LTS-100-42. The licensee documented the issue in AR 3977735. The AR documented that the primary containment was operable since the additional leakage identified did not exceed 0.6 La. No further actions were taken.

The inspectors then reviewed the licensee’s primary containment leakage rate testing program as described in Technical Specification 5.5.13, that states in part, this program shall

establish the leakage rate testing of the primary containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemption. This program shall be in accordance with the guidelines contained in Nuclear Energy Institute (NEI) 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J," Revision 3-A, dated July 2012. Additionally, the licensee implements the program in accordance with station procedure ER-AA-380, "Primary Containment Leakrate Testing Program."

During the inspectors review they noted the following, Section 10.2.3 of NEI 94-01, Revision 3-A addresses Type C test interval and more specifically Section 10.2.3.4 addresses corrective action and states in part, if Type C test results are not acceptable, a cause determination shall be performed and corrective actions identified that focus on those activities that can eliminate the identified cause of a failure with appropriate steps to eliminate recurrence. A failure in this context is exceeding an administrative limit and not the total failure of the valve. Additionally, station procedure ER-AA-380, Revisions 10 and 11, Steps 4.11.4 and 4.11.4.2 required that, if leakage from any component exceeds its administrative limit perform a cause determination and take corrective actions to eliminate the identified cause, with appropriate steps to eliminate recurrence.

The inspectors requested the evaluations and corrective actions for the failed leakrate tests performed on 2C51-J004C in 2015 and 2017 and the licensee did not have them. The licensee documented this in AR 4270252.

Corrective Actions: The valve was replaced and successfully passed leak rate testing with results below the administrative limits during Refueling Outage L2R17 completed in 2019.

Corrective Action References: ARs 2457086, 3977735, 4222980, 4223654 and 4270252

Performance Assessment:

Performance Deficiency: The inspectors determined that failing to perform a cause determination and identifying corrective actions that focus on those activities that can eliminate the identified cause of a failure with appropriate steps to eliminate recurrence in accordance with station procedure ER-AA-380 was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the SSC and Barrier Performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, despite a degrading trend of valve performance with respect to leakage rate, the licensee repeatedly took no actions to identify and eliminate the cause of the test failures.

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 Barrier integrity questions and determined that the finding was of very low safety significance (Green) since it did not represent an actual open pathway in the physical integrity of the reactor containment, containment isolation system and heat removal components or a reduction of hydrogen igniters in the reactor containment.

Cross-Cutting Aspect: H.6 - Design Margins: The organization operates and maintains equipment within design margins. Margins are carefully guarded and changed only through a

systematic and rigorous process. Special attention is placed on maintaining fission product barriers, defense-in-depth, and safety related equipment. Specifically, AR documents only addressed why overall containment leakage was acceptable and did not identify the reduction in margin to acceptable containment leakage and take actions to carefully guard and maintain the margin.

Enforcement:

Violation: Technical Specification Section 5.5.13 requires, in part, that the primary containment leakage rate testing program shall be established, implemented, and maintained in accordance with the guidelines contained in NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J," Revision 3-A, dated July 2012.

Nuclear Energy Institute 94-01, Revision 3-A, Section 10.2.3 addresses, "Type C Test Interval" and Section 12.2.3.4, "Corrective Action" addresses "If Type C test results are not acceptable, a cause determination shall be performed and corrective actions identified that focus on those activities that can eliminate the identified cause of a failure with appropriate steps to eliminate recurrence."

The licensee established Procedure ER-AA-380, "Primary Containment Leakrate Testing Program," Revisions 10 and 11 to address the primary containment leakrate testing program. Procedure ER-AA-380, Revisions 10 and 11, Steps 4.11.4 and 4.11.4.2 require that if leakage from any component exceeds it administrative limit perform a cause determination and take corrective actions to eliminate the identified cause, with appropriate steps to eliminate recurrence.

Contrary to the above, on February 22, 2015, and on February 23, 2017, the licensee failed to implement the primary containment leakage rate program in accordance with Technical Specification 5.5.13, in that steps 4.11.4 and 4.11.4.2 of procedure ER-AA-380, "Primary Containment Leakrate Testing Program," Revisions 10 and 11, which implement the guidance contained in NEI 94-01, "Industry Guidelines for Implementing Performance-Based Option of 10 CFR 50, Appendix J," Revision 3-A, dated July 2012, were not followed. Specifically, when the TIP isolation valve 2C51-J004C exceeded its administrative leakage rate limit, the licensee failed to perform a cause determination and take corrective actions to eliminate the identified cause with appropriate steps to eliminate recurrence.

Enforcement Action: This violation is being treated as an 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 October 9, 2019, the inspectors presented the integrated inspection results to Mr. P. Hansett, Plant Manager, and other members of the licensee staff.
- On October 3, 2019, the inspectors presented the Exit Meeting for EP Inspection per IP 71114, Attachment 4 inspection results to Mr. L. Baker, EP Fleet Programs Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
60855.1	Corrective Action Documents		Selected Corrective Action Reports generated since August 2017	
	Corrective Action Documents Resulting from Inspection	AR 04262886	NRC Identified Steps Not Circled/Slashed in Procedure	07/09/2019
	Engineering Changes	EC 0000620032	Design Analysis Re-Qualifying ISFSI Pad for 90 Casks	11/20/2017
		EC 0000622967	Refuel Floor Area Cooling for FHD Skid	05/20/2019
		EC 0000623793	Forced Helium Dehydration (FHD) Reactor Building Impacts	04/12/2019
		EC 000062987	LaSalle 2019 Dry Cask Storage Fuel Selection Packages - ISFSI	04/17/2019
	Miscellaneous		DCS Bi-Annual Walkdown Per OU-AA-630-101	04/10/2019
			Selected 72.48 Evaluations Completed Since August 2016	
			LaSalle County Station Units 1 and 2 72.212 Evaluation Report	7
			2018 Annual Radiological Environmental Operating Report	05/14/2019
			Physical Inventory Report Post-Loading Cask Varification	07/09/2019
		L-004290	Fuel Selection Packages for LAS-0036 through LAS-0043 for the 2019 ISFSI Campaign	03/11/2019
		L-004294	LaSalle CoC 1014 Amendment 8, Revision 1 Cask Model with 4 Individual Group Limits	02/28/2019
		LTS-800-01	Annual Inspection of ISFSI Pad and Casks	07/05/2019
		LTS-800-01	Annual Inspection of the ISFSI Pad and Casks	06/14/2017
	NDE Reports	Report Number 914603-598-01	Report of Nondestructive Examination of Lid to Shell Weld - Root Layer	07/09/2019
		Report Number 914603-598-02	Report of Nondestructive Examination of Lid to Shell Weld - First Layer	07/09/2019
		Report Number 914603-598-03	Report of Nondestructive Examination of Lid to Shell Weld - Final Layer	07/09/2019
		Report Number 914603-598-04	Report of Nondestructive Examination of Lid to Shell Weld - Post Hydro-static Test	07/10/2019
	Procedures	GQP - 9.2	High Temperature Liquid Penetrant Examination and	10

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Acceptance Standards for Welds., Base Materials and Cladding	
		GQP - 9.6	Visual Examination of Welds	18
		LFP-800-69	Hi-TRAC Movement within the Reactor Building	22
		MA-AA-716-021	Rigging and Lifting Program	30
		MA-AA-716-022	Control of Heavy Loads	3
		OU-MW-671-200	MPC Processing Forced Helium Dehydration (FHD) for BWRs	4
		PI-CNSTR-OP-EXE-01	Closure Welding of Holtec Multi-Purpose Canisters at Exelon Facilities	20
	Radiation Surveys		LaSalle Hi-STORM Radiation Survey	06/27/2019
			ISFSI Monthly Pad Survey	05/29/2019
	Self-Assessments		2019 LaSalle Spent Fuel Loading Campaign (SFLC) Readiness Assessment	04/18/2019
		NOSA-LAS-18-10	Independent Spent Fuel Storage Installation Audit Report	11/14/2018
	Work Orders	WO 04706829-01	Annual Reactor Building Crane Inspection	09/17/2018
		WO 04722199 01	Dry Cask Storage Hi-STORM Lift Bracket Inspection	07/30/2018
		WO 04722200	Dry Cask Storage Lift Yoke Assembly Inspection	07/30/2018
		WO 04722201 01	Dry Cask Storage Lift Cleat Inspection	07/30/2018
		WO 04722202 01	Dry Cask Storage Hi-TRAC Trunnion Inspection	07/30/2019
		WO 04914343-01	Monthly Reactor Building Crane, Beam and Hoist Inspection	05/01/2019
71111.04Q	Drawings	M-99	Standby Liquid Control System	AD
	Procedures	LOP-SC-01E	Unit 1 Standby Liquid Control System Electrical Checklist	10
		LOP-SC-01M	Unit 1 Standby Liquid Control System Mechanical Checklist	12
71111.05Q	Corrective Action Documents	AR 4261004	Fire Alarms and Both DFPs Auto Started Due to FP Leak	07/01/2019
		AR 4261866	Unexpected Alarm 1PM10J-B303 Division 2 SWGR Fire Alarm	07/04/2019
		AR 4261996	U1 RT Fire Detector Replacement	07/05/2019
		AR 4262877	NRC Identified: U2 CSR FP Piping Corrosion	07/09/2019
		AR 4263741	Extent of Condition Walkdown of Pre-Action FP Piping	07/12/2019
	Corrective Action Documents Resulting from	AR 4261784	NRC Question: Draining of Fire Protection Piping Following Deluge Actuation	07/03/2019
		AR 4262090	NRC ID - Dry Pipe FP Lines not Sloped per NFPA 13	07/05/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Inspection	AR 4262093	IEMA ID - U1 CSR FP Piping Penetration not Shown on Drawing	07/05/2019
		AR 4262899	NRC Identified: Floor Drains Covered in U1 Cable Spreading Room	07/09/2019
	Miscellaneous	LaSalle Fire Protection Report	An Analysis of the Effects of Initiation of Fire Suppression Systems on Safe Shutdown Equipment at LaSalle County Station	8
		LOP-FP-03	Operating Department Procedure, Viking Automatic Deluge Valve Actuation and Reset	29
		LOS-FP-R6	Operating Department Surveillance, Preaction Spray Systems Functional Test	16
	Work Orders	WO 1528878	U1 Cable Spreading Room Sprinkler Functional Test, Section E.1 of LOS-FP-R6	11/08/2013
		WO 1947942	Unit 1 Fire Protection Spray and Sprinkler Systems Integrity Inspection, Attachment B of LOS-FP-SR3.	08/01/2018
		WO 4592876	U1 Cable Spreading Room Sprinkler Functional Test, Section E.1 of LOS-FP-R6	07/30/2018
71111.06	Corrective Action Documents	4261004	Fire Alarms and Both DFPS [diesel fire pumps] Auto Started Due To FP [fire protection] Leak	07/01/2019
		4261891	Floor Drain Leaking Water Onto 1PA02J In U1 AEER [auxiliary electric equipment room]	07/04/2019
	Engineering Evaluations	LaSalle Fire Protection Report	An Analysis of the Effects of Initiation of Fire Suppression Systems on Safe Shutdown Equipment At LaSalle County Station	8
	Miscellaneous	NFPA 92M	Waterproofing and Draining of Floors	1972
71111.07A	Procedures	ER-AA-340-1002, Attachment 1	Heat Exchanger Inspection Report for 1E22-S001	09/23/2019
71111.12	Corrective Action Documents	AR 4193090	(A)(1) Determination for MR Function LAS-2-FUEL-02	11/08/2018
		AR 4223642	2G33-F004 MOV Diagnostics Identified Anomalies	02/25/2019
		AR 4224174	New Valve Disc Required for 2G33-F004	02/27/2019
		AR 4228789	Review of MODs Video ID'd Foreign Material in Jet Pump Riser	03/12/2019
	Drawings	VPF-5521-225	Control Ball Valve	F
	Engineering	AR 4169154	Maintenance Rule Functional Failure Evaluation	11/06/2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Evaluations	LAS-1-PCIS-PC-03	Unit 1 Maintenance Rule Function Evaluation for Primary Containment Isolation Valve ASME XI Leak Rate Testing	09/13/2019
		LAS-1-PCIS-PC-04	Unit 1 Maintenance Rule Function Evaluation for Primary Containment Isolation Valve ASME XI Stroke Time Testing	09/13/2019
		LAS-1-PCIS-PC-05	Unit 1 Maintenance Rule Function Evaluation for the Reactor Coolant System Pressure Boundary and Primary Containment Integrity Function	09/13/2019
	Procedures	ER-AA-302-1006	Motor-Operated Valve Maintenance and Testing Guidelines	19
		ER-AA-310-1005	(a)(1) Action Plan Development and Action Plan (Monitoring) Goal Setting Template	7
	Work Orders	WO 1223498	Measure Flow Control Shaft Lift of 2B33-F040A	03/05/2011
		WO 1450948	Measure Flow Control Shaft Lift of 2B33-F040A	02/28/2013
		WO 1629132	Measure Flow Control Shaft Lift of 2B33-F040A	02/22/2015
		WO 1814692	Measure Flow Control Shaft Lift of 2B33-F040A	03/04/2017
		WO 4627480	Work Request for Gate Valve - Part 21	02/27/2019
		WO 4633640	Measure Flow Control Shaft Lift of 2B33-F040A	03/07/2019
71111.13	Corrective Action Documents	AR 4277865	License Renewal (LR) Coating Inspection for 0DG01A HX	09/09/2019
	Procedures	WC-AA-104-F-01	Disassemble and Inspect the Heat Exchanger 0DG01A	0
		WC_AA_104-F-01	Risk Screening/Mitigation Plan for FHD Scaffolding Removal	07/18/2019
	Work Orders	WO 4624753	LRA Disassemble and Inspect 0DG01A DG Cooling Water HX	000
71111.15	Corrective Action Documents	AR 289539	Provisions for Liquid Tight Jacket Repair	01/11/2005
		AR 4191997	3A1 FW Drn Clr Drain Outlet	11/05/2018
		AR 4262877	NRC Identified: U2 CSR FP Piping Corrosion	07/09/2019
		AR 4266338	Discovery, Work Performed, Lessons Learned	07/22/2019
	Drawings	Drawing M-139, Sheet No. 1	P&ID Nuclear Boiler and Reactor Recirculating	AT
		Drawing M-139, Sheet No. 8	P&ID Nuclear Boiler & Reactor Recirculating 2B33-D003A	H
	Miscellaneous	NE-11-32-1	Cable and Connection Inspection Summary Report, Peach Bottom	1
		OU-AA-101-1007	Outage Execution Scope Add Sheet	12

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Tagout 02-B33-F421A-001	Lock Up Both RR HPUs per LOP-RR-07 Limitation D.4	08/14/2019
	Operability Evaluations	OpEval 19-002	Diesel Generator Ventilation (VD)	000
	Procedures	LAP-1600-15	Administrative Procedure, Regulatory Guide 1.97 Instruments	8
71111.18	Corrective Action Documents	AR 4251021	Review Code Requirements for Replacement VY Cooling Coils	05/22/2019
		AR 4252624	Code Non-Conformance Identified for VY Coolers 1(2)VY03A	05/29/2019
		AR 4257982	1VY02C Air Flowrate Below Required Value	06/19/2019
		AR 4267302	Discrepancy in Pipe Sch of Installed Pipe and Design Info	07/24/2019
		AR 4267597	Radiography Reject on Line #1FW11A-4” Weld #4	07/28/2019
	Drawings	Drawing IT-7000-M-PP-04B	Prequalified Hydrolazing Port Details for Class 2, Class 3, and ANSI B31.1 Piping System	B
		Drawing M-87	P&ID Core Standby Cooling System, Equipment Cooling Water System	BR
		LTS-100-10	Feedwater Valve LLRT Quick Reference Diagram	25
	Miscellaneous	CC-AA-201	Plant Barrier Impairment Permit	12
		Tagout 01-E22-00150330-001	Replace 1VY02A Cooler	06/17/2019
	Work Orders	WO 4633535	Replace both cooler coils and replace the 2-1/2” inlet outlet piping. All work will be IAW EC 622556.	12/13/2018
		WO 4633536	Replace both cooler coils and replace the 2-1/2” inlet outlet piping including the 4” 90 degree elbows, 4”x2-1/2” reducer and possibly a short piece of the 4” piping after the elbow.	01/31/2018
		WO 4677534	Replace both cooler coils and replace the 2-1/2” inlet outlet piping. Also replace portions of the 4” piping in the overhead. All work will be IAW EC 622652.	03/20/2019
71111.19	Corrective Action Documents	AR 4278495	Corrosion of 0DG01A Flange Connections	09/12/2019
		AR 4278613	0DG01A Floating End Cover Leak	09/12/2019
	Work Orders	WO 4662368	In-service Testing Comprehensive Pump Test for 1E12-C002B	09/05/2019
		WO 4899832	LOS-DG-M1 0DG Fast Start	09/12/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.22	Miscellaneous	STI LA-18-01	Change the Control Room Emergency Makeup Unit Operability Test from a 31-day (1 month) Frequency to an Annual Frequency	2
		STI LA-18-01	Change the control room emergency makeup unit operability test from a 31-day (1 month) frequency to an annual frequency.	1
	Work Orders	WO 4675852	In-service Testing Comprehensive Pump Test for 1E12-C002A	08/15/2019
		WO 4940210	Unit Common Diesel Generator Idle Start	08/15/2019
71114.04	Miscellaneous	Evaluation 18-45	Exelon Nuclear Standardized Radiological Emergency Plan, Revision 30	02/14/2019
71152	Corrective Action Documents	AR 1422001	LaSalle EP Staffing Assessment	10/03/2012
		AR 2457086	2C51-J004C Tip Ball Valve LTS-100-42 As Found Failure	02/22/2015
		AR 3977735	LLRT - L2R16, 2C51-J004C Tested Above Alarm Limit	02/23/2017
		AR 4223654	L2R17 - 2C51-J004C Repair Scope Add	02/25/2019
		AR 4270252	Historical 2C51-J004C App J Leakage Evaluations Not Found	08/07/2019
		AR 4276516	WHR Violation	09/03/2019
	Miscellaneous	NEI 94-01	Industry Guidelines for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J	3A
	Procedures	ER-AA-380	Primary Containment Leakrate Testing Program	12
		ER-AA-380	Primary Containment Leakrate Testing Program	11
		OP-AA-106-101-1001	Event Response Guidelines	31
		OP-LA-101-111-1001	On-Shift Staffing Requirements	9
	Work Orders	WO 1435953	LLRT, 'C' Tip Ball Valve 2C51-J004C	02/22/2015
		WO 1809824	2C51-J004C Tip Ball Valve LTS-100-42 As Found Failure-Repair	03/05/2019
		WO 1809884	LLRT, 'C' Tip Ball Valve 2C51-J004C	02/23/2017
		WO 4604994	LLRT, 'C' Tip Ball Valve 2C51-J004C	02/23/2019