UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
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LISLE, ILLINOIS 60532-4352

November 8, 2018

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

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2—NRC INTEGRATED INSPECTION REPORT 05000373/2018003 AND 05000374/2018003

Dear Mr. Hanson:

On September 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your LaSalle County Station, Units 1 and 2. On October 11, 2018, the NRC inspectors discussed the results of this inspection with Mr. W. Trafton and other members of your staff. The results of this inspection are documented in the enclosed report.

Based on the results of this inspection, the NRC has identified six issues that were evaluated under the risk significance determination process as having very–low safety significance (Green). The NRC has also determined that seven violations are associated with these issues. Because the licensee initiated condition reports to address these issues, these violations are being treated as Non–Cited Violations (NCVs), consistent with Section 2.3.2 of the Enforcement Policy. These NCVs are described in the subject inspection report.

If you contest the violations or significance of these NCVs, 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 Inspectors at the LaSalle County Station.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555–0001; with copies to the Regional Administrator, Region III; and the NRC resident inspectors at the 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 10 CFR 2.390, “Public Inspections, Exemptions, Requests for Withholding.”

Sincerely,

/RA/

Billy Dickson, Chief
Branch 2
Division of Reactor Projects

Docket Nos. 50–373; 50–374
License Nos. NPF–11; NPF–18

Enclosure:
IR 05000373/2018003; 05000374/2018003

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Letter to Bryan C. Hanson from Billy Dickson, dated November 8, 2018

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2—NRC INTEGRATED INSPECTION REPORT 05000373/2018003 AND 05000374/2018003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Numbers:	50–373; 50–374
License Numbers:	NPF–11; NPF–18
Report Numbers:	05000373/2018003; 05000374/2018003
Enterprise Identifier:	I–2018–003–0030
Licensee:	Exelon Generation Company, LLC
Facility:	LaSalle County Station, Units 1 and 2
Location:	Marseilles, IL
Dates:	July 1 through September 30, 2018
Inspectors:	W. Schuap, Senior Resident Inspector, LaSalle J. Havertape, Resident Inspector, LaSalle R. Ng, Project Engineer J. Cassidy, Sr. Health Physicist G. Edwards, Health Physicist V. Petrella, Reactor Inspector L. Rodriguez, Reactor Inspector
Approved by:	B. Dickson, Chief Branch 2 Division of Reactor Projects/Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting an integrated quarterly 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. Findings and violations being considered in the NRC's assessment are summarized in the table below.

List of Findings and Violations

Failure to Establish Heat Exchanger Inspection Procedures Appropriate for the Circumstances			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–01; 05000374/2018003–01 Closed	H.12 – Human Performance, Avoid Complacency	71111.07
The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation (NCV) of 10 *Code of Federal Regulations* (CFR) Part 50, Appendix B, Criterion V, "Instructions Procedures, and Drawings," for the licensee's failure to ensure that activities affecting quality were prescribed by documented procedures of a type appropriate to the circumstances. Specifically, the licensee failed to ensure that procedure ER–AA–340–1002 appropriately accounted for partially blocked heat exchanger (HX) tubes identified during HX inspections.			

Failure to Establish an Appropriate Inservice Testing Procedure			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–02; 05000374/2018003–02 Closed	None	71111.07
The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings", for the licensee's failure to prescribe procedures that were appropriate to the circumstances, for activities affecting quality, that included appropriate quantitative or qualitative acceptance criteria for determining that important activities had been satisfactorily accomplished. Specifically, the core standby cooling system (CSCS) bypass line isolation valve inservice testing (IST) procedure did not contain acceptance criteria to verify the necessary valve obturator movement.			

Failure to Establish Goals to Monitor Steam Tunnel Check Dampers			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–03; 05000374/2018003–03 Closed	None	IP 71111.12
The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50.65(a)(1) for the licensee's failure to establish goals to monitor the performance of steam tunnel check dampers. Specifically, the licensee's goals for functional failure and condition monitoring could always be satisfied given a two years monitoring period with only one testing opportunity.			

Failure to Manage the Increase in Risk During a Battery Charger Capacity Test			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–04 Closed	H.13 – Consistent Process	71111.22
The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR 50.65(a)(4) for the failure to manage risk when the licensee failed to adhere to procedure WC–AA–101, Revision 28, "On-line Work Control Process." Specifically, procedural requirements regarding a dedicated operator for manual restoration actions and written instructions to credit the availability of the 'A' residual heat removal service water (RHRSW) pump during the battery charger testing were not met.			

Failure to Translate Fuel Oil Relief Valve Setting into Design Drawing of Record			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–05; 05000374/2018003–05 Closed	None	71152
The inspectors identified a finding of very low safety significance (Green) and an associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to assure that applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to accurately translate the Division III emergency diesel generator (EDG) fuel oil relief valve set point from the design drawing of record, VPF–3411–10, to the fuel oil pressure operator rounds alert value in the Division III EDG operating procedures.			

Failure to Implement Engineering Change Results in Reactor Coolant Boundary Leakage			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000373/2018003–08 Closed	H.4 – Teamwork	71153
The inspectors documented a self-revealed finding of very low safety significance (Green) and associated Non-Cited Violations of Technical Specification (TS) 5.4.1 “Procedures,” and TS 3.4.5 for the failure to implement engineering change (EC) 354539 to perform the final piping weld for the 1B33–F067B bonnet vent line in the field resulting in pressure boundary leakage when the weld failed at power.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
URI	05000373/2018003–06; 05000374/2018003–06	Potential Failure to Inspect Containment Post-Tensioned Tendons per Code Requirements and to Follow Corrective Action Program Process	71152	Open
URI	05000374/2018003–07	Potential Failure to Promptly Correct the Unit 2 Primary Containment Wall Cavity Leakage Condition and to Follow Corrective Action Program Process	71152	Open
LER	05000373/2018–004–00	Technical Specification Required Shutdown due to Reactor Pressure Boundary Leakage	71153	Closed

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PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On September 8, 2018, the unit was down powered to approximately 77 percent power for a rod pattern adjustment and to support turbine valve testing. The unit was returned to rated thermal power on September 10, 2018. 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 August 31, 2018, the unit was in the process of shutting down to perform maintenance on the 'A' reactor recirculation pump when the operators had to manually scram the unit due to a loss of main condenser vacuum. After completing the planned maintenance and correcting the cause for the loss of the main condenser vacuum, the licensee started the unit up and returned to rated thermal power on September 6, 2018. 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 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

Impending Severe Weather (1 Sample)

The inspectors evaluated readiness for impending adverse weather conditions for a severe thunderstorm warning on September 25, 2018.

71111.04—Equipment Alignment

Partial Walkdown (3 Samples)

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

(1) Unit 1 Division III emergency diesel generator (EDG) on August 16, 2018;
(2) Unit 2 standby liquid control system on August 21, 2018; and
(3) Unit 2 Division III switchgear and high pressure core spray on September 6, 2018.

71111.05AQ—Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

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

(1) Fire protection loop flow test, LOS–FP–SR2, on August 5, 2018;
(2) Fire zone 5D2, Unit 2 Division III switchgear room, on August 16, 2018;
(3) Fire zone 5D1, Unit 1 Division III switchgear room, on August 16, 2018;
(4) Fire zone 2I3, Unit 1 'B'/'C' residual heat removal (RHR) corner room, 673' Elevation, on August 16, 2018; and
(5) Fire zone 3B1, Unit 2 reactor building standby gas treatment area, 820' Elevation, on August 21, 2018.

71111.07—Heat Sink Performance

Heat Sink (Triennial) (2 Samples)

The inspectors evaluated heat sink (HX) performance on the following components:

(1) Units 1 and 2 'B' RHR HX (1(2) E12–B001B); and
(2) Ultimate heat sink (IP 71111.07, Sections 02.02d2 and 02.02d7).

71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated the operator requalification test, scenarios ESG–57 and ESG–80, on September 12, 2018.

Operator Performance (1 Sample)

The inspectors observed and evaluated operators in the control room during reactor plant shut down and startup on August 31, 2018 and on September 3, 2018, respectively.

71111.12—Maintenance Effectiveness

Routine Maintenance Effectiveness (3 Samples)

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

(1) Valcor valves on August 29, 2018;
(2) Steam tunnel check dampers on June 20, 2018; and
(3) Containment post loss-of-cooling-accident monitor on August 28, 2018.

71111.13—Maintenance Risk Assessments and Emergent Work Control (5 Samples)

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

(1) Units 1 and 2 online risk yellow due to thunderstorm warning on August 29, 2018;
(2) Unit 1 online risk yellow and Unit 2 shutdown risk green due to 345 kilo-Volt (KV) switching operations for disconnect maintenance on September 2, 2018;
(3) Unit 2 Division III protected equipment during Division I equipment inoperability on September 6, 2018;
(4) Unit 2 online risk yellow due to high pressure core spray planned maintenance outage on September 24, 2018; and
(5) Unit 2 online risk orange due to high pressure core spray planned maintenance outage and severe thunderstorm watch on September 25, 2018.

71111.15—Operability Determinations and Functionality Assessments (4 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) Standby gas treatment wide range gas monitor inoperable on July 15, 2018;
(2) Unit 2 low pressure core spray and RHR 'A' low pressure permissive switch, 2B21–N413C, out of Technical Specifications tolerance on July 15, 2018;
(3) Unit 1 low pressure core spray/reactor core isolation cooling room temperature element out-of-service on July 31, 2018; and
(4) Unit 2 reactor protector system motor generator set output breaker failure to open on August 27, 2018.

71111.18—Plant Modifications (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

(1) Temporary secondary containment boundary for re-route Unit 2 Division II room cooler piping (Engineering Change 620623) on September 18, 2018.

71111.19—Post Maintenance Testing (5 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Unit 1 standby gas treatment w controller testing on September 7, 2018;
(2) Unit 2 'C' RHR min-flow valve breaker replacement testing on September 4, 2018;
(3) B auxiliary electric and control rooms heating, ventilation and air conditioning testing on September 19, 2018;
(4) Unit 1 standby gas treatment flow control capacitor testing on August 9, 2018; and
(5) Unit 2 standby gas treatment testing on August 15, 2018.

71111.20—Refueling and Other Outage Activities (1 Sample)

The inspectors evaluated Unit 2 forced outage, L2M20, maintenance activities from August 31 through September 3, 2018.

71111.22—Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (3 Samples)

(1) LES–DC–103A, Unit 2, Division I, 2AA battery charger capacity test on July 22, 2018;
(2) LOS–PC–M1, post loss-of-coolant-accident channel check on July 22, 2018; and
(3) LIP–CM–510, Unit 1 continuous oxygen monitor sensor maintenance and standardization on August 5, 2018.

In-Service (1 Sample)

(1) 2CM028, 3 point containment atmosphere monitor drywell suction primary containment isolation valve, post-maintenance testing on September 12, 2018.

RADIATION SAFETY

71124.06—Radioactive Gaseous and Liquid Effluent Treatment

Walk Downs and Observations (1 Sample)

The inspectors evaluated the licensee's radioactive gaseous and liquid effluent treatment systems during plant walkdowns.

Calibration and Testing Program (Process and Effluent Monitors) (1 Sample)

The inspectors evaluated the licensee's gaseous and liquid effluent monitor instrument calibration and testing.

Sampling and Analyses (1 Sample)

The inspectors evaluated radioactive effluent sampling and analysis activities.

Dose Calculations (1 Sample)

The inspectors evaluated dose calculations.

71124.07—Radiological Environmental Monitoring Program

Site Inspection (1 Sample)

The inspectors evaluated the licensee's radiological environmental monitoring program.

Groundwater Protection Initiative Implementation (1 Sample)

The inspectors evaluated the licensee's groundwater monitoring program.

OTHER ACTIVITIES – BASELINE

71151—Performance Indicator Verification (9 Samples)

The inspectors verified licensee performance indicators submittals listed below:

(1) MS06: Emergency AC Power Systems—2 Samples (July 1, 2017 – June 30, 2018);
(2) MS07: High Pressure Injection Systems—2 Samples (July 1, 2017 – June 30, 2018);
(3) MS09: Residual Heat Removal Systems—2 Samples (July 1, 2017 – June 30, 2018);
(4) PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences — 1 Sample (October 1, 2017 – June 30, 2018); and
(5) BI01: RCS Specific Activity—2 Samples (October 1, 2017 – June 30, 2018).

71152—Problem Identification and Resolution

Annual Follow-Up of Selected Issues (3 Samples)

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

(1) Inservice inspection of Group B vertical tendons;
(2) Unit 2 reactor cavity leakage through primary containment wall; and
(3) Division III EDG operator rounds.

71153—Follow-Up of Events and Notices of Enforcement Discretion

Licensee Event Reports (1 Sample)

The inspectors evaluated the following licensee event reports which can be accessed at https://lersearch.inl.gov/LERSearchCriteria.aspx:

(1) Licensee Event Report (LER) 2018–004–00, Technical Specification Required Shutdown due to Reactor Pressure boundary Leakage.

INSPECTION RESULTS

71111.07—Heat Sink Performance

Failure to Establish Heat Exchanger Inspection Procedures Appropriate for the Circumstances			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–01; 05000374/2018003–01 Closed	H.12 – Human Performance, Avoid Complacency	71111.07 – Heat Sink Performance

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions Procedures, and Drawings," for the licensee's failure to ensure that activities affecting quality were prescribed by documented procedures of a type appropriate to the circumstances. Specifically, the licensee failed to ensure that procedure ER–AA–340–1002 appropriately accounted for partially blocked HX tubes identified during HX inspections.

Description:

The RHR HXs are relied upon to remove core decay heat following design basis accidents and during shutdown cooling operations. The RHR HXs are shell-and-tube HXs with a U-tube design.

As documented in the licensee's Generic Letter (GL) 89–13 Program Basis Document, LaSalle Station chose to perform frequent regular maintenance, with thermal performance testing as a supplement, for the RHR Heat Exchangers. This maintenance was performed to periodically verify the heat transfer capability of the safety-related HXs cooled by service water. The frequent regular maintenance consisted of visual inspections of the tube-side of the RHR HXs, performed in accordance with ER–AA–340–1002, "Service Water Heat Exchanger Inspection Guide," Revision 7. For tube-side clean and inspect maintenance activities, the procedure required the licensee to develop acceptance criteria prior to performing the HX inspection, and then required the licensee to compare the as-found conditions of the HX against the acceptance criteria. For macro fouling, the acceptance criteria developed was based on the number of tubes allowed to be blocked, as supported by design basis calculations. For the RHR HXs, a total of 53 of 1,063 tubes were allowed to be blocked.

On March 8, 2018, the licensee completed work order (WO) 1909979, "Disassemble RHR HT Exchanger to Inspect Service Water," which was associated with an inspection of the 1 'B' RHR HX. This HX inspection identified a number of partially and fully blocked tubes. The licensee evaluated this condition by developing a number of equivalently blocked tubes in order to account for the partially blocked tubes when comparing the as-found condition against the acceptance criterion. This evaluation was conducted per step 4.5.1.2.A of procedure ER–AA–340–1002, which stated that the development of the number of equivalent blocked tubes was "based on the qualitative engineering judgment of the inspector in the field." The WO documented that the as-found blockage was equivalent to 50 blocked tubes, which met the acceptance criterion. In addition, the procedure provided Appendix 1, "Method for Evaluating Partial Tube Blockage," to support the HX inspector in the development of the number of equivalent blocked tubes when partially blocked tubes were identified. However,

Appendix 1 was not used because its use was optional, as stated in step 4.7 of the procedure.

The NRC inspectors determined procedure ER–AA–340–1002 was not appropriate to the circumstances because it allowed partially blocked tubes to be converted to an equivalent number of fully blocked tubes without establishing a technical basis when assessing the as-found condition of safety-related HXs.

Corrective Actions: The licensee was still evaluating its planned corrective actions at the time of the inspection. However, the inspectors determined that the continued non-compliance does not present an immediate safety concern because the licensee evaluated the most recent thermal performance test results for the 1 'B' RHR HX and determined that there was sufficient available margin to ensure the HX was capable of performing its design function.

Corrective Action Reference: Action request (AR) 4149537

Performance Assessment:

Performance Deficiency: The inspectors determined the failure to establish procedures of a type appropriate to the circumstances for safety related HX inspections was contrary to 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," and was a performance deficiency. Specifically, the licensee failed to ensure that procedure ER–AA–340–1002 appropriately accounted for partially blocked HX tubes identified during safety related HX inspections.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, procedure ER–AA–340–1002 did not ensure the RHR HXs capability to provide their mitigating function because the procedure would allow unacceptable HX performance to go undetected.

Significance: The inspectors determined the finding affected the Mitigating Systems Cornerstone and assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions." The finding screened as having very low safety significance (Green) because it did not result in the loss of operability or functionality of the 1B RHR HX. Specifically, the licensee evaluated the most recent thermal performance test results for the 1 'B' RHR HX and determined there was sufficient available margin to ensure the HX was still capable of performing its design function.

Cross-Cutting Aspect: The finding had a cross-cutting aspect in the Avoid Complacency component of the Human Performance cross-cutting area, which states, in part, that the licensee will recognize and plan for the possibility of mistakes even while expecting successful outcomes and individuals implement appropriate error reduction tools. Specifically, the licensee did not recognize and plan for the possibility of mistakes when, in September of 2017, procedure ER–AA–340–1002 was revised to remove HX inspector qualification requirements while continuing to allow HX inspectors to use their judgement without appropriate error reduction tools. [H.12]

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and be accomplished in accordance with these procedures.

The licensee established procedure ER–AA–340–1002, "Service Water Heat Exchanger Inspection Guide," Revision 7, as the implementing procedure for safety related service water HX inspections, an activity affecting quality.

Contrary to the above, as of March 8, 2018, the licensee failed to have a procedure of a type appropriate to the circumstances for safety-related HX inspections. Specifically, procedure ER–AA–340–1002 did not contain appropriate instructions to ensure that the effects of partially blocked tubes identified during HX inspections on the capability of the HXs could be determined.

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

Failure to Establish an Appropriate Inservice Testing Procedure			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–02; 05000374/2018003–02 Closed	None	71111.07 – Heat Sink Performance

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings", for the licensee's failure to prescribe procedures that were appropriate to the circumstances, for activities affecting quality, that included appropriate quantitative or qualitative acceptance criteria for determining that important activities had been satisfactorily accomplished. Specifically, the CSCS bypass line isolation valve IST procedure did not contain acceptance criteria to verify the necessary valve obturator movement.

Description:

The CSCS bypass line isolation valve, 0E12–F300, is a 54-inch safety-related manual butterfly valve with an actuator that has external limit stops located on the worm shaft. The safety function of the valve is to open to provide a flow path from the lake to the service water tunnel by bypassing the CSCS equipment cooling water system tunnel traveling screens when they are unable to allow water flow into the plant. The licensee established procedure LOS–RH–Q4, "Cycling CSCS Bypass Line Isolation Valve," Revision 5, to test the valve. This procedure was credited by the licensee IST program basis document for meeting the requirements of the 2004 version of the ASME OM Code with the 2006 Addenda, which is the licensee's code of record.

The licensee classified this valve as a manual active category B valve in their IST program. ASME OM Code paragraph ISTC–3540, "Manual Valves," states:

> Manual valves shall be full-stroke exercised at least once every 2 years, except where adverse conditions may require the valve to be tested more frequently to ensure operational readiness. Any increased testing frequency shall be specified by the Owner. The valve shall exhibit the required change of obturator position.

Paragraph ISTC–3530 of the ASME OM Code, "Valve Obturator Movement," states:

> The necessary valve obturator movement shall be determined by exercising the valve while observing an appropriate indicator, such as indicating lights that signal the required changes of obturator position, or by observing other evidence, such as changes in system pressure, flow rate, level, or temperature, that reflects change of obturator position."

To exercise the valve, operators turned a T-bar that connects to the valve actuator. The actuator was supposed to be mechanically connected to the valve obturator. Therefore, the valve obturator was expected to turn when the T-bar was turned, as long as the mechanical connection between the actuator and obturator maintained its integrity. During valve testing, the test procedure required the licensee to count the number of times the T-bar was turned in order to take the valve from the full closed position to the full open position, and vice-versa. The procedure allowed the licensee to document a qualitative assessment of the valve manipulation in the comments section of the procedure if any issues were encountered. The qualitative assessment could include comments on: (1) difficulty turning the T-bar; (2) excessive force required to open the valve; (3) excessive force required to close the valve; (4) excessive force required to seat the valve; and (5) excessive valve binding.

The inspectors noted, however, that movement of the T-bar would not necessarily indicate movement of the valve obturator. Specifically, the valve actuator contained external limit stops which limited the number of turns the T-bar was physically allowed to take regardless of actual valve obturator position. Hence, if the mechanical connection between the valve actuator and obturator was degraded, the number of turns required for the T-bar to take the valve from the full closed position to the full open position, or 222112 vice-versa, would not indicate the actual valve obturator movement.

In addition, the IST procedure did not include any quantitative or qualitative acceptance criteria. A note inside the IST procedure stated, "The 0E12–F300, CSCS Bypass Line Isolation Valve takes approximately 18 turns to open." However, the note did not qualify as an acceptance criterion. As written, the test procedure could be satisfactorily completed regardless of the number of turns required to manipulate the valve. In addition, although the procedure allowed a qualitative assessment of the valve manipulation to be recorded, it did not require the as found results of the valve to be compared against any established acceptance criteria in order to determine whether or not the valve was capable of performing its safety function. Therefore, the lack of acceptance criteria in the IST procedure could allow a degraded or failed valve to incorrectly be considered capable of performing its safety function.

Corrective Actions: The licensee was still evaluating its planned corrective actions at the time of the inspection. However, the inspectors determined that the continued non-compliance

does not present an immediate safety concern because the licensee entered the issue into their CAP and determined that the valve was operable.

Corrective Action Reference: AR 04149479

Performance Assessment:

Performance Deficiency: The inspectors determined the failure to prescribe a CSCS bypass line isolation valve IST procedure that contained acceptance criteria to verify the necessary valve obturator movement was a violation of 10 CFR Part 50, Appendix B, Criterion V, and was a performance deficiency.

Screening: The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the CSCS bypass line isolation valve IST procedure did not ensure the valve capability to provide its mitigating function because the procedure would allow unacceptable valve performance to go undetected.

Significance: The finding was evaluated using IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions." The finding screened as having very low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems. Specifically, the licensee reviewed available information and determined the valve remained operable.

Cross-Cutting Aspect: No cross cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented procedures of a type appropriate to the circumstances and that the procedures include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

The licensee established LOS–RH–Q4, "Cycling CSCS Bypass Line Isolation Valve", Revision 5, as the implementing procedure for testing valve 0E12–F300 in accordance with the 2004 ASME OM Code with the 2006 Addenda, an activity affecting quality. Paragraph ISTC–3530 of the Code states, in part, that the necessary valve obturator movement shall be determined by exercising the valve while observing an appropriate indicator.

Contrary to the above, as of July 13, 2018, the licensee failed to have a procedure for testing the CSCS bypass line isolation valve of a type appropriate to the circumstances and that included appropriate quantitative or qualitative acceptance criteria for determining that important activities had been satisfactorily accomplished. Specifically, IST procedure LOS–RH–Q4 did not contain acceptance criteria to verify the necessary CSCS bypass line isolation valve obturator movement.

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

71111.12—Maintenance Effectiveness

Failure to Establish Goals to Monitor Steam Tunnel Check Dampers			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–03; 05000374/2018003–03 Closed	None	71111.12 – Maintenance Effectiveness

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50.65(a)(1) for the licensee's failure to establish goals to monitor the performance of steam tunnel check dampers. Specifically, the licensee's goals for functional failure and condition monitoring could always be satisfied given a two years monitoring period with only one testing opportunity.

Description:

The steam tunnel check dampers, a Maintenance Rule System, close in response to an increase in air velocity or steam tunnel pressure due to a high energy line break in order to prevent rupture of the ventilation duct wall adjacent to the high pressure core spray (HPCS) switchgear room. There are three check dampers for each unit and each check damper has a left and a right blades. Per the licensee's updated final safety analysis report (UFSAR), a rupture of the ventilation duct wall adjacent to the HPCS switchgear room could significantly affect the design basis environment of the switchgear room. Therefore, a failure of steam tunnel check damper to close could result in the loss of HPCS.

The licensee performs surveillance procedure LMS–VT–01, "TB Vent Return Air Riser Check Damper Surveillance" every outage to measure the latching force of the damper blade. Acceptance criteria of the latching force for the blades are calculated by the licensee to provide a reasonably high minimum setting to prevent inadvertent closure under normal ventilation system flow conditions while assuring that the check dampers will close during a postulated high energy line break.

The licensee's Maintenance rule System Basis Document states that two failures of any left damper plate on Unit 1 and any right damper plate on Unit 2 is a condition monitoring failure. Also, the failure of all three left damper plates on Unit 1 and all three right damper plates on Unit 2 is a function failure. It further states that testing of the dampers per procedure LMS–VT–01 is performed once per refuel cycle during unit outages and that a monitoring period of a two year cycle is established to allow for consecutive failures to be monitored effectively. This criterion was in effect since 1996.

In March 2018, during a review of historical damper test results, the licensee determined that the Maintenance Rule condition monitoring criterion for the steam tunnel check damper 1VT79YB left blade as-found latch force were exceeded in 2008, 2010, 2012, 2014, and 2016. The licensee entered this issue in the CAP as AR 4120441 and subsequently put the system into Maintenance Rule (a)(1) category and developed an Maintenance Rule (a)(1) action plan.

The inspectors reviewed the (a)(1) action plan and identified that the action plan did not contain any corrective action to address the condition monitoring failures. Specifically, in the (a)(1) action plan, the licensee revised procedure LMS–VT–01 to change the as-found latch

force measurement to be an average of ten readings and to add clearer instructions on how to take the measurements. Further, the licensee revised the Maintenance Rule Functional Failure criterion from “less than or equal to 1 functional failure per Unit” in a two-year monitoring period to “less than or equal to 2 functional failure per Unit” in a four-year monitoring period. The Condition Monitoring Criteria was changed from “less than or equal to 2 failures per damper plate” in a two-year cycle to “less than or equal to 2 failures per damper plate” in a four-year cycle. The licensee also considered that procedure change was only an enhancement and not to address any deficiency of the procedure.

The inspectors determined that the licensee’s Maintenance Rule performance goals are not sufficient to provide reasonable assurance that the steam tunnel check dampers are capable of fulfilling their intended functions. Specifically, in a two-year monitoring cycle, the licensee only tests these dampers during a refueling outage and there is only one refueling outage every two years. Therefore, the previous “less than or equal to 1 functional failure per Unit” in a two-year monitoring period criterion is always satisfied and so is the new functional failure criterion of “less than or equal to 2 functional failure per Unit” in a four-year monitoring period. Similarly, the old Conditional Monitoring Criterion of “less than or equal to 2 failures per damper plate” in a two-year cycle or the new criterion of “less than or equal to 2 failures per damper plate” in a four-year cycle are also always satisfied.

Corrective Action: The system manager will review and evaluate the maintenance rule criteria for the function to ensure that the established criteria is appropriate for performance monitoring in accordance with 10 CFR 50.65a(1) and sufficient to provide assurance that the system will perform its function.

Corrective Action Reference: AR 04180338

Performance Assessment:

Performance Deficiency: The licensee failed to establish goals to monitor the performance of steam tunnel check dampers in accordance with 10 CFR 50.65(a)(1).

Screening: The inspectors determined the performance deficiency was more than minor because it adversely affected the Mitigating System cornerstone attribute of Equipment Performance to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee’s Maintenance Rule Functional Failure and condition monitoring criteria are always satisfied and was not sufficient to ensure the availability, reliability, and capability of the check dampers.

Significance: The inspectors assessed the significance of the finding using SDP Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” and determined that the finding is of very low safety significance (Green) because it is not a deficiency affecting the design or qualification of a mitigating Structures, Systems and Components (SSC), does not represent a loss of system and/or function, does not represent an actual loss of function of at least a single Train for greater than its Technical Specification Allowed Outage Time, and does not represent an actual loss of function of one or more non-Technical Specification Trains of equipment designated as high safety-significant for greater than 24 hours.

Cross-Cutting Aspect: The inspectors determined that there was no cross cutting aspect associated with this finding since none of the crosscutting aspects in IMC 0310 were determined to be appropriate for this issue.

Enforcement:

Violation: Title 10 CFR 50.65(a)(1) requires, in part, that the licensee shall monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, or components, are capable of fulfilling their intended functions.

Contrary to the above, the licensee did not monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, or components, are capable of fulfilling their intended functions since 1996. Specifically, the licensee's performance goals for steam tunnel check dampers were not sufficient to provide reasonable assurance that the dampers were capable of fulfilling their intended functions. The Maintenance Rule Functional Failure and Condition Monitoring criteria can always be satisfied given the testing frequency and monitoring periods.

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

71111.22—Surveillance Testing

Failure to Manage the Increase in Risk During a Battery Charger Capacity Test			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–04 Closed	H.13 – Consistent Process	71111.22 – Surveillance Testing

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50.65(a)(4) for the failure to manage risk when the licensee failed to adhere to procedure WC–AA–101, Revision 28, "On-line Work Control Process." Specifically, procedural requirements regarding a dedicated operator for manual restoration actions and written instructions to credit the availability of the 'A' RHRSW pump during the battery charger testing were not met.

Description:

On April 11, 2018, the inspectors observed routine surveillance testing of the '1AB' Division I 125VDC battery charger using LES–DC–103A, "Division I Battery Charger Capacity Test." The inspectors noted that in preparation for the test, the licensee placed administrative controls (i.e. a hand switch tag) on the '1A' RHRSW pump and entered Technical Specification Limiting Conditions for Operation (LCOs) 3.7.1 and 3.6.2.3 for the '1A' RHRSW pump. Administrative control of the '1A' RHRSW pump was required during the battery charger capacity test to prevent overloading the Division I switchgear, a condition that could occur if the '1A' RHRSW pump started while the 1AB and 1AA battery chargers were in operation simultaneously.

The inspectors also reviewed the impact of the battery charger capacity test on plant risk and noted that the licensee considered '1A' RHRSW pump to be available in its online risk model. After discussions with the licensee, the inspectors determined that manual operator action to secure the battery charger load bank was being credited to maintain availability of the '1A' RHRSW pump. Crediting manual operator action for equipment availability was a

method of managing the increase in plant risk from surveillance activities as required by 10 CFR 50.65(a)(4). Guidance for crediting operator action was contained in NUMARC 93–01, Revision 4A, Appendix B. The licensee implemented the NUMARC 93–01 guidance using procedure WC–AA–101, Attachment 6, "Unavailability Guidelines."

Procedure WC–AA–101, Attachment 6, contained several requirements regarding operator action for system restoration. Upon review, the inspectors determined that the licensee failed to meet the requirements of WC–AA–101. Specifically, written guidance was not provided in LES–DC–103A for system restoration and a dedicated operator was not assigned to the task. The operator assigned for system restoration on April 11, 2018, was also the safe-shutdown equipment operator and the Unit 1 rounds equipment operator.

Corrective Action: The licensee submitted a procedure change request for LES–DC–103A, "Division I Battery Charger Capacity Test" to incorporate an attachment for restoration of equipment and for OP–LA–101–111–1002, "LaSalle Operations Philosophy Handbook" to clarify guidance on operator action for system availability.

Corrective Action Reference: AR 04153715

Performance Assessment:

Performance Deficiency: The inspectors determined that the failure to manage the increase in risk during Division 1 battery charging testing in accordance with 10 CFR 50.65(a)(4) was a performance deficiency. Specifically, procedural requirements regarding a dedicated operator for manual restoration actions and written instructions to credit the availability of the 'A' RHRSW pump during the battery charger testing were not met.

Screening: The inspectors determined the performance deficiency was more than minor because it adversely affected the Procedural Quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the lack of written guidance for securing from the Division I 125VDC battery charger surveillance and the assignment of additional duties (e.g. operator rounds) to personnel responsible to take manual actions would have impeded restoration of the 'A' RHRSW pump.

Significance: The performance deficiency involved the failure to mitigate increased risk in accordance with 10 CFR 50.65(a)(4) while performing maintenance; therefore, the inspectors used IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," and determined that the licensee would have to re-perform the risk assessment, correcting for the equipment rendered inoperable during the surveillance test. The licensee used their Paragon model for the risk assessment assuming that the Division 1 RHRSW was unavailable during a 6–hour time. The top initiators in the assessment were a turbine trip and a loss of offsite power. The incremental conditional core damage probability (ICCDP) was conservatively calculated to be less than 1E–06/year. The results of the licensee evaluation were reviewed by a Region III Senior Reactor Analyst (SRA) and were determined to be reasonable; therefore, in accordance with IMC 0609, Appendix K, since the ICCDP was not greater than 1E–06/year, the finding was determined to be of very low safety significance (Green).

Cross-Cutting Aspect: The inspectors determined this finding affected the cross-cutting area of human performance in the aspect of consistent process, where Individuals use a

consistent, systematic approach to make decisions. Risk insights are incorporated as appropriate. The licensee had developed a similar surveillance, the Division II battery charger capacity test, LES–DC–103B, and incorporated all of the necessary elements of WC–AA–101 regarding dedicated operator manual restoration actions to credit availability. However, the Division I battery charger capacity test, LES–DC–103A, did not. [H.13]

Enforcement:

Violation: Title 10 CFR 50.65(a)(4), "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," requires, in part, that before performing maintenance activities the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activity.

Contrary to the above, on April 11, 2018, prior to performing maintenance, the licensee failed to manage the increase in risk that may result from the proposed maintenance activity. Specifically, the licensee failed to manage the increase in risk during the Division 1 battery test. Procedure guidance regarding dedicated operator manual restoration actions including written instructions to credit availability of the 'A' RHRSW pump during surveillance testing were not met.

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

71152—Problem Identification and Resolution

Failure to Translate Fuel Oil Relief Valve Setting into Design Drawing of Record.			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018003–05; 05000374/2018003–05 Closed	None	71152 – Problem Identification and Resolution

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to assure that applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to accurately translate the Division III EDG fuel oil relief valve set point from the design drawing of record, VPF–3411–10, to the fuel oil pressure operator rounds alert value in the Division III EDG operating procedures.

Description:

On April 12, 2018, the inspectors observed a 24-hour endurance run of the Division I EDG, performed under work order 1919109. As part of the review of the completed surveillance documentation, the inspectors selected several of the operational parameters for evaluation for compliance with the design bases documents for the EDG.

As part of this evaluation, the inspectors noted that the Division I and II EDGs are equipped with a fuel oil filter high differential pressure alarm to detect a fuel oil filter flow restriction as described in Section 9.5.4.2 of the UFSAR. The alarm is set sufficiently low enough to allow the duplex filter assembly to be changed during EDG operation, avoiding a stall condition.

The inspectors noted that the Division III EDGs are not equipped with an alarm to monitor fuel oil filter differential pressure.

After discussions with the licensee, the inspectors determined that the licensee relied upon operator rounds to indentify a fuel oil filter flow restriction for the Division III EDGs in place of an alarm. Since the EDGs are equipped with a positive displacement fuel oil pump, a fuel oil flow restriction in the fuel oil filter would be seen as a gradual increase in engine driven fuel oil pump discharge pressure. In accordance with the EDG's operating procedure, operators would take action to change the fuel oil filter by initiating a condition report once an operator rounds alert value of 75 [psig] was reached.

The inspectors reviewed the Division III EDG fuel oil system design bases drawing, VPF–3411–10, Revision 15, and noted the presence of a fuel oil relief valve with a setting of 65 [psig] between the engine driven fuel oil pump and the fuel oil filters. Based on a fuel oil relief valve setting of 65 [psig] and an operator rounds alert value of 75 [psig], the inspectors concluded that a degraded condition with the fuel oil filter could go undetected prior to an EDG engine stall.

In response to the inspectors' concerns, the licensee determined that the relief setting of 65 [psig], listed on drawing VPF–3411–10, was different than the relief valve setting installed in the plant (75 [psig]). The fuel oil relief valves with a setting of 75 [psig] $\pm$ 7.5 [psig] had been installed under part evaluation L90–06–0012, dated March 27, 1990. Part evaluation L90–06–0012 determined that the set point change would not impact EDG function, but failed to update design drawings or procedures impacted by the part evaluation changing the relief setting. The licensee documented the issue in the CAP as AR 04144044.

The licensee determined that since the fuel oil relief valve could lift as low as 67.5 [psig] possibly causing the engine to shut down due to the lack of fuel as described section 7 of the EDG vendor manual, VETIP J–0155, that the operator rounds alert value for fuel oil pressure was non-conservative. The licensee documented the issue in the CAP as AR 04137564.

Corrective Actions: The licensee is planning to correct the fuel oil relief valve set point on drawing VPF–3411–10 and to revise the operator rounds alert value to 67 [psig] in the Division III EDG operating procedures.

Corrective Action References: AR 04137564 and 04144044

Performance Assessment:

Performance Deficiency: The inspectors determined that the failure to correctly translate the engine fuel oil pressure relief valve set point into EDG operating procedures was a performance deficiency. Specifically, the failure to establish an operator rounds alert value lower than the Division III EDG fuel oil pump discharge relief valve set point allowed a degraded condition to go undetected.

Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, if the Division III EDG positive displacement fuel oil pump discharge pressure had increased due to fuel filter clogging, the relief valve could have lifted, resulting in an engine stall. Since the Division III EDG is not equipped with an alarm that monitors this parameter and the operator rounds alert value was non-conservative, it is possible that fuel filter blockage would have gone undetected by operations prior to an engine stall.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power." The finding was screened against the Mitigating Systems cornerstone and determined to be of very low safety significance (Green) because the answer to each of the screening questions was "no".

Cross-Cutting Aspect: No cross cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, on March 27, 1990, the licensee failed to assure that applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to translate the relief valve setting determined in part evaluation L90–06–0012 for the division III EDG fuel oil relief valve to the design drawing of record, VPF–3411–10, resulting in a non-conservative fuel oil pressure operator rounds alert value in the Division III EDG operating procedures.

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

Unresolved Item (Open)	Potential Failure to Inspect Containment Post-Tensioned Tendons per Code Requirements and to Follow Corrective Action Program Process 05000373/2018003–06; 05000374/2018003–06	71152 – Problem Identification and Resolution

Description:

Vertical and horizontal post tensioned tendons, along with reinforcing steel, are required to maintain structural integrity of the primary containment. There are a total of 120 vertical post tensioned tendons along the periphery of the primary containment wall, including 60 Group C tendons and 30 each of Groups A and B. Section 5.5.6 of the Technical Specifications describes the Inservice Inspection (ISI) program for post tensioning tendons and states that the Tendon Surveillance Program shall be in accordance with ASME Section XI, Subsection IWL as required by 10 CFR 50.55a.

One Group B tendon (V213B) on Unit 1 was inspected in 1999 and according to the inspection records, water was identified on all components of the tendon. "No presence of water" is one of the acceptance criteria per Subsection IWL of the ASME Section XI. No condition report was found for this adverse condition. Subsequently, a condition involving degraded vertical tendons was identified during inspections in 2003 and documented in AR 157920. The degradation consisted of broken wires. The Root Cause Report (RCR) for this condition noted that 11 Group A tendons were found degraded and water induced corrosion was the root cause for tendon degradation. The evaluation concluded that five Group A tendons and all 30 Group B tendons in each unit were not susceptible to water intrusion because they were protected by welded covers. These tendons with welded covers were also determined to be inaccessible, and therefore exempt from future inspections requirements in accordance with provisions of ASME Section XI, IWL. The RCR did not address the condition of water found during the Group B tendon inspection in 1999. Additionally, to verify this assumption of welded covers providing

protection from water intrusion, a corrective action was generated to inspect one Group A and one Group B inaccessible tendons during the next outage.

Pertaining to inaccessible tendons, the inspectors noted the following requirements of 10 CFR 50.55a(b)(2)(viii)(E):

> *Concrete containment examinations: Fifth provision. For Class CC applications, the applicant or licensee must evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or the result in degradation to such inaccessible areas. For each inaccessible area identified, the applicant or licensee must provide the following in the ISI Summary Report required by IWA–6000:*
>
> *(1) A description of the type and estimated extent of degradation, and the conditions that led to the degradation; (2) An evaluation of each area, and the result of the evaluation; and (3) A description of necessary corrective actions.*

After the licensee identified degraded group A tendon locations, to comply with the provision of 10 CFR 50.55a, the licensee documented in its 90 day post outage ISI reports information on the degraded A tendons in 2004 and 2005 for units 1 and 2, respectively. This information included an assumption that the extent of degradation did not apply to the Group B tendon locations because of a welded cover at locations that precluded entry of water. Additionally, a corrective action, CA 157920–33, was generated to inspect one Group A and one Group B tendon during the next refueling outage to verify this assumption. The corrective action was closed without inspection of any Group B tendon based on a management decision following satisfactory inspection of a Group A tendon in 2006. The licensee's decision failed to take into account the fact that the most recent inspection of a Group B tendon showed presence of water on tendon components and also that the welded closure details were different for tendons in the two groups.

Subsequently, the licensee identified a concern regarding inadequate closure of this corrective action during its reviews for the license renewal application in 2014. Specifically, the licensee wrote AR 1658189 to document that due to the differences in the welded cover designs, the results of the Group A tendon inspection may not be applicable to Group B tendons. Therefore the critical assumption regarding the adequacy of Group B tendon covers remained unverified. In particular, the Group B tendon cover used dissimilar metal welds and water was found inside the cover during the most recent inspection. The licensee identified actions to perform inspections on two of the Group B tendons on each unit in addition to inspecting the tendon V213B where water was initially found. These actions were categorized as action tracking items (ACITs), items that do not represent conditions adverse to quality. Since water was found on all tendon components during the last inspection of a Group B tendon, and water induced corrosion was found to be the root cause of many tendon failures, the assumption in the RCR that the welded covers would prevent water intrusion needed to be validated through inspections.

This unresolved item remains open pending additional inspector review of the issue with respect to regulatory requirements.

Planned Closure Action: Inspectors will seek additional information from the licensee and the NRC will perform internal review to evaluate compliance with NRC regulations.

Licensee Action: None

Corrective Action Reference: AR 4186365

Unresolved Item (Open)	Potential Failure to Promptly Correct the Unit 2 Primary Containment Wall Cavity Leakage Condition and to Follow Corrective Action Program Process 05000374/2018003–07	71152 – Problem Identification and Resolution

Description:

Condition description in AR 2420888 indicated that leakage through the Unit 2 primary containment wall has been a longstanding open issue. The leak was initially identified in 1998 when water leakage was noticed on the external side of the primary containment wall. The leakage was approximately 20–25 drops per minute at the primary location and multiple areas near the 180 degree azimuth at construction joints on elevations 813' and 795'. Another minor leak was noticed at a similar location near the 0 degrees azimuth. The condition was documented in AR 2269. The source of water leakage was determined to be a weld on a 2" fuel pool cooling drain line and work order 98109950 was initiated to repair the weld. The work was not scheduled and the work order was eventually cancelled. In 2010, the leakage was documented again in AR 1086083. A technical evaluation documented as ATI–1470953–18–47 in 2014 concluded that there was no adverse impact on structural adequacy of the containment. The technical evaluation stated that the leakage was to be repaired in the upcoming outage through work order 855785.

Action request 2420888 was written in December 2014 to re-enter the condition in the CAP. It recommended corrective actions for liner ultrasound testing every other refueling outage, completion of weld repair, and performance of a technical evaluation for structural impact on the concrete, reinforcing steel, tendons, and liner. The technical evaluation assignment was closed to the evaluation documented under ATI–1470953–18–47 discussed above. The corrective action assignment for the weld repair was closed to a work order which has not been completed to-date.

Based on the inspector's review, the licensee has deferred the actions to correct this condition identified in 1998. The inspectors question whether the continuous leakage could lead to deterioration of the concrete, corrosion of the reinforcement, or degradation of post tensioned tendons if it enters the tendon sheath or trumpet area; and therefore a condition adverse to quality.

This unresolved item remains open pending additional inspector review of the issue with respect to regulatory requirements.

Planned Closure Action: Inspectors will seek additional information from the licensee and the NRC will perform internal reviews to evaluate compliance with NRC regulations.

Licensee Action: None

Corrective Action Reference: AR 4186369

71153—Follow-Up of Events and Notices of Enforcement Discretion

Failure to Implement Engineering Change Results in Reactor Coolant Boundary Leakage			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000373/2018003–08 Closed	H.4 – Teamwork	71153 – Follow-Up of Events and Notices of Enforcement Discretion

The inspectors documented a self-revealed finding of very low safety significance (Green) and associated NCVs of TS 5.4.1 "Procedures," and TS 3.4.5 for the failure to implement EC 354539 to perform the final piping weld for the 1B33–F067B bonnet vent line in the field, resulting in pressure boundary leakage when the weld failed at power.

Description:

On March 20, 2018, the licensee noticed a rising trend in Unit 1 drywell particulate level and received a drywell containment area monitor particulate alarm on March 21, 2018. On March 22, 2018, the licensee reduced power to make a drywell entry to investigate the cause of the rising particulate trend and increase in unidentified reactor coolant leakage. During the entry, a two and a half to three foot steam plume was identified on the 1B reactor recirculation loop discharge valve bonnet (1B33–F067B). The steam plume was from the weld connecting the inspection port/vent line piping to the loop discharge valve bonnet. The licensee documented the issue in the CAP as AR 4117757. Additionally, the licensee submitted licensee event report (LER) 2018–004–00, "Technical Specification Required Shutdown due to Reactor Pressure Boundary Leakage."

The licensee performed a root cause investigation and determined that the leak on the loop discharge valve bonnet was due to increased pipe stress leading to fatigue related cracking. Two contributing causes led to the increased pipe stress. First, the EC stated that the final piping weld shall be completed in the field. The work group determined that the final piping weld would be completed in the fabrication shop to reduce radiation dose to the welders instead of the field as directed by the EC. When the weld was done in the fabrication shop on February 13, 2018, a mockup was used to support the vent line piping for the weld. The supports were removed and the bonnet with vent piping were transported and fit up in the field. When the installation in the field was complete, the mean tensile stress was increased on the top surface of the pipe due to the unsupported condition, the dead weight of the pipe and valves, and the downward force created by the defection of the support member.

Second, when the fit up was done in the field, the work order for installation of the clamp that secured the piping in place did not contain instructions for clearances between the clamp and the piping that would have minimized stress applied to the piping. The combination of these two effects increased the pipe stress, resulting in the fatigue related crack and the weld failure.

Corrective Action: The leak was repaired by removing the vent valve and piping and welding a plug in place.

Corrective Action Program Reference: AR 4117757

Performance Assessment:

Performance Deficiency: The inspectors determined that the failure to implement EC 354539 to perform the final piping weld for the 1B33–F067B bonnet vent line in the field resulting in pressure boundary leakage was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it adversely affected the Equipment Performance attribute of the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, performing the final weld in the maintenance shop instead of the field contributed to increased pipe stress loading leading to fatigue related cracking of the weld and reactor pressure boundary leakage.

Significance: Using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the finding was screened against the Initiating Events cornerstone and determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small break loss of coolant accident (LOCA) nor affected other systems used to mitigate a LOCA resulting in total loss of function after a reasonable assessment of degradation,

Cross-Cutting Aspect: The inspectors determined this finding affected the cross-cutting area of Human Performance in the aspect of team work, where individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety in maintained. Specifically, the maintenance work group failed to communicated and coordinate with the engineering staff and radiation protection work group their intent of completing the final weld in the maintenance shop to further reduce radiation dose to the maintenance workers. [H.4]

Enforcement:

Violation: Technical Specification Section 5.4.1 states, in part, that "written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978."

NRC Regulatory Guide 1.33, Appendix A, Section 9 addresses "Procedures for Performing Maintenance" and Section 9.a, states, in part, "Maintenance that can affect the performance of safety-related equipment be performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances."

Engineering Change 354539, Revision 1, Step 5 states, in part, "Then only final connection weld involving the in-place piping 1RR32AB–3/4" at the 90 degree SW elbow will need to be made and tested in the field." This EC provided instructions for the piping installation.

Contrary to the above, on February 13, 2018, the licensee failed to implement maintenance procedure in accordance with TS 5.4.1. Specifically, the licensee completed the final connection weld involving the in-place piping 1RR32AB–3/4" at the 90 degree SW elbow in the maintenance shop instead of the field as opposed to Step 5 of EC 354539, Revision 1. This contributed to increased pipe stress loading, leading to fatigue related cracking of the weld and reactor pressure boundary leakage while the plant was in Mode 1.

Technical Specification 3.4.5 a, “RCS Operational Limits,” states, “RCS operational LEAKAGE shall be limited to “No pressure boundary leakage,” and states, if pressure boundary leakage is present, the plant is required to be in Mode 3 in 12 hours and Mode 4 in 36 hours.

Contrary to the above, the plant was not in Mode 2 in 12 hours and Mode 4 in 36 hours after the licensee identified an indication of RCS leakage on March 20, 2018. With the plant entering Mode 3 on March 22, 2018, that period was greater than the allowed completion time by the limiting condition for operation provided in TS. 3.4.5.

Disposition: These violations are being treated as NCVs, consistent with Section 2.3.2 of the Enforcement Policy.

This closed LER 2018–004–00.

EXIT MEETINGS AND DEBRIEFS

The inspectors confirmed that proprietary information was controlled to protect from public disclosure. No proprietary information was documented in this report.

- On October 11, 2018, the inspectors presented the quarterly integrated inspection results to Mr. W. Trafton, and other members of the licensee staff.
- On July 13, 2018, the inspectors presented the ultimate heat sink triennial inspection results to Mr. W. Trafton, Site Vice President, and other members of the licensee staff.
- On August 24, 2018, the inspectors presented the radiation protection program inspection results to Mr. W. Trafton, Site Vice President, Mr. J. Washko, Plant Manager and other members of the licensee staff.
- On September 27, 2018, the inspector presented the annual follow-up of selected issues inspection results to Mr. T. Riddle, Senior Design Engineering Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

- AERR; Annual Radiological Effluent Release Report, LaSalle County Nuclear Power Station; 2017
- AR 00002269; Document Actions Being Taken to Correct Water That is Leaking; 03/29/1999
- AR 04006903; April 2014 REMP Anomalies and Missed Samples; 05/05/2017
- AR 04104376; Self-Assessment Title; NRC Inspection: Radioactive Gaseous and Liquid Effluent Treatment (RETS) (IP 71124.06); 06/11/2018
- AR 04144025; REMP 2017 Roll-Up of Sampling Anomalies and Missed Samples; 06/04/2018
- AR 04144036; REMP 2016 Roll-Up of Sampling Anomalies and Missed Samples; 06/04/2018
- AR 04147239; 2018–Q1 Summary of Anomalous and Missed Samples; 06/14/2018
- AR 0733776; FME Found in 1A RHR Heat Exchanger; 02/09/2008
- AR 1497929; GE Transfer of Part 21 Information RPS EPMA MCCB
- AR 157920; Root Cause Investigation of the LaSalle Containment Tendon Wire Failures; 05/08/2003
- AR 1589737; Long Term Outage Group Actions (Assignments 24, 25); 11/25/2013
- AR 1658189; Upper B Tendon Inspection Needed; 05/09/2014
- AR 1697948; Work Needed for Tendon Inspection in L1R16; 08/29/2014
- AR 2420888; Unit 2 Reactor Cavity Skirt Plate to Drain Line Leakage; 12/04/2014
- AR 2539023; 2B33–F067B Leakage, Cracked Weld on Inspection Port; 8/7/2015

- AR 3987641; Containment Monitoring (CM) Valves Performance Trend; 3/21/2017
- AR 4055696; 1CM022A Closed Indication Failed to Light; 9/25/2017
- AR 4056034; 1CM022A Closed Indication Failed; 9/26/2017
- AR 4081458; LTS–200–17 Rev 16 Needs Revision; 12/06/2017
- AR 4109860; 1B RHR HX Partition Plate Needs Repair; 03/01/2018
- AR 4109865; 1B RHR HX Sill Plate Needs Repaired; 03/01/2018
- AR 4111053; 1CM022A Failed to Give Closed Indication; 3/4/2018
- AR 4111682; 1B RHR HX Partition Repairs Delayed Until L1R19; 03/06/2018
- AR 4115114; Entered LOA–WI–001 On Low Lake Level; 03/15/2018
- AR 4117757; RM—1B33–F067B Vent Line Leak; 3/22/2018
- AR 4123038; 2A RHR Heat Exchanger Report Not Filed; 04/04/2018
- AR 4123044; LOS–DG–SR6 Does Not Match Calc L–002404 Rev 004A; 04/04/2018
- AR 4126072; Self-Assessment Title; Focused Self-Assessment for Post-Accident Gaseous Effluent Monitoring (NUREG 0737); 06/27/2018
- AR 4128357; Upstream HEPA Filter Could Not Be Tested; 4/18/2018
- AR 4130025; Unit 2 VG HEPA Filter Leakage Testing; 4/23/2018
- AR 4131522; 1VY02A D/P Exceeds LOS–DG–SR7 Acceptance Criteria; 04/27/2018
- AR 4133231; 1VY02A D/P Exceeds LOS–DG–SR7 Acceptance Criteria; 05/01/2018
- AR 4137564; PCRA's Needed for Division 3 DG Procedures; 5/14/2018
- AR 4140275; 2VY03A DP Exceeds LOS–DG–SR6 Acceptance Criteria; 05/23/2018
- AR 4144044; CCP Drawing Descrepencies (*sic*) Identified—22078 and VPT–3411–10
- AR 4148618; NRC ID—UHS Inspection—Material Found in U1 B/C RHR Room; 06/19/2018
- AR 4148627; NRC ID—UHS Inspection—UFSAR Table 6.2–2 Discrepancy; 06/19/2018
- AR 4148633; NRC ID—UHS Inspection—Discrepancy in GL 89–13 Prog Doc; 06/19/2018
- AR 4148638; NRC ID—UHS Inspection—Discrepancy in GL 89–13 Prog Doc 2; 06/19/2018
- AR 4148978; NRC ID—UHS Inspection—LSH Housekeeping Issues; 06/19/2018
- AR 4149479; NRC ID: Potential NCV For Non-Conformance with OM Code; 06/22/2018
- AR 4149506; Incorrect EC Number Recorded During RHR Heat Exchanger Test; 06/22/2018
- AR 4149537; NRC ID—UHS Inspection – ER–AA–340–1002 HX Inspection Proc; 06/22/2018
- AR 4154585; 2B21–N413C OOT Trend Code B2; 7/10/2018
- AR 4159603; Alternative Instrument Used for LOS–AA–S101 Reading; 7/28/2018
- AR 4166455; 2A RPS MG Set Output Breaker Did Not Trip; 8/23/2018
- AR 4169451; 4.0 Critique for L2M20 Shutdown and Manual SCRAM; 9/2/2018
- AR 4170700; Low VG Flow on S/U of U1 VG Train
- ATI 1470953–18–47; Actions Supporting Issues Identified by LS–AA–2001; 07/29/2014
- Balance-of-Plant Heat Exchanger Inspection, Testing and Maintenance Guide; Revision 8EO Rounds Lake Level From 06/14/2018 to 06/18/2018
- C–1977; General Arrangement Triton-XI Butterfly Valve 54" Butterfly Valve Outlet; Revision 4
- Calc. 97–201; Thermal Model of ComEd/LSCS RHR Heat Exchangers 1(2)RH01A & B; Revision A02
- Calc. L–000715; Water Hammer Evaluation on Units 1 & 2 Division 1 RHR Service Heat Exchanger CSCS Subsystems; Revision 1A
- Calc. L–000718; Determination of Potential Water Hammer Forces at the RHR Heat Exchanger from a Postulated RHRSE Void Formation; Revision 1A
- Calc. L–000731; Evaluation of the RHR Heat Exchangers for Water Hammer Effect; Revision 2A
- Computer Data Point 1(2)LT–SW014 Lake Level From 06/14/2018 to 06/18/2018
- CY–AA–130–3010–F–01; Dose Equivalent Iodine (DEI); October 2017 through June 2018
- CY–AA–170–2001; Airborne Tritiated Water Analysis; Revision 0
- CY–LA–170–201 Attachment 1; Station Vent Tritium Concentration in Air Sample Information Sheet; Sample Point SVS; 08/22/2018

- CY–LA–170–201; Station Vent Stack Airborne Tritiated Water Sampling; Revision 3
- CY–LA–170–3002; Quarterly/Annual Total Dose Report; October 2017 through June 2018
- CY–LA–170–301; Offsite Dose Calculation Manual; Revision 9
- Determination IR 2741412; MR LAS–2–CM–01; 2PL76J and 2PL77J (Unit 2 Post-LOCA H2/O2 Monitors); 3/28/2017
- Drawing 1; Contoured Depths Ultimate Heat Sink LaSalle County Station LaSalle County, Illinois; 07/06/2016
- Drawing 2; Contoured Depths Ultimate Heat Sink LaSalle County Station LaSalle County, Illinois; 07/06/2016
- Drawing 3; Contoured Depth Difference Map Ultimate Heat Sink LaSalle County Station LaSalle County, Illinois; 07/06/2016
- Drawing ID 18073; General Electric Co. Engine Fuel Oil Schematic EMO 20–645–E4; 2600 KW Generator Set; Revision C
- Drawing S–326; Sections and Details, Reactor Containment Liner Plate, Sheet 1; Revision AE
- Dwg. 731E96AA; Process Diagram RHR System; Revision 7
- Dwg. VPF3161–002; RHR Heat Exchangers; Revision D
- EC 354539–001; Replace Double Block Valve Assembly 1B33–F068B/69B With Two Single Valves in Series; 3/15/2018
- EC 369448; Alternate Detail for RHR Heat Exchanger Partition Plate to Sill Plate Bolted Connection; Revision 0
- EC 405711; Reevaluation of VY Cooler Performance for OE 16–003 After Cleaning Results and Recommendations; Revision 10
- EC 622290; Evaluation of Unit 1B RHR Heat Exchanger Thermal Performance Data Using Alternate (EPRI) Methodology (1E12–B001B); Revision 0
- EC 623376; Evaluation of the 1B RHR Heat Exchanger Eddy Current Testing; Revision 0
- EC625394; LaSalle Channel Distortion Criteria Update Due to L2M20 Failure of Rod 30–31 to SCRAM; Revision 0
- Environmental Incorporated Midwest Laboratory; Sampling Procedure Manual; Revision 15
- Failure Classification LAS–1–CM; IR 4081910; Troubleshooting for Failure of 1CM022A Valve will not be Completed until L1R17; 12/7/2017
- Gas Permit Post-Release Data; Permit Number G–20170717–204–C; Al. Gaseous Release Point; 07/21/2017
- Generic Letter 89–3 Program Basis Document; Revision 13
- IR 4117757; Root Cause Investigation of 1B33–F067B Vent Line Leak; 3/22/2018
- IR 4169154; Event/Issues Report: Unit 2 Rod 30–31 Did Not Fully Insert During SCRAM; 9/2018
- LAS–0–2018–0024; Risk Issue, Primary Containment B Tendons; Revision 1
- LAS–2–CM; IR 2542067; MRFF Functional Failure Occurs when Both Division 1 [1(2)PL76J] and Division 2 [1(2)PL77J] post-LOCA Panels are Inoperable; 10/13/2015
- LAS–2–CM; Maintenance Rule System Basis LaSalle 2; Emergency Operation of the Post-LOCA Accident Primary Containment Atmosphere Hydrogen and Oxygen Monitors
- LAS–2–CM–01; IR 2729354; MRFF During Maintenance per WO 1611471–01 to Replace Regulators and Perform Leak Testing 2PL77J was Declared Inoperable; 12/17/2016
- LaSalle Inservice Testing Program; Valve Component Basis Summary; Page 1 of 2
- LCP–310–52; Wide Range Gas Monitor Normal Noble Gas, Iodine, and Particulate Sampling; Revision 12
- LCP–840–21; Post Accident Sampling of the General Atomic Wide Range Gas Monitor; Revision 7
- LES–DC–103A; Surveillance/Plant Interface Information; Revision 21
- Letter, Exelon to NRC; Post Outage 90-Day Inservice Inspection Summary Report for L1R10; 05/07/2004

- LGA–003; Primary Containment Control; Revision 17
- LOA–CW–101; Unit 1 Circulating Water System Abnormal; Revision 23
- LOA–CW–201; Unit 2 Circulating Water System Abnormal; Revision 22
- LOA–WL–001; River Screen House And Lake Abnormal; Revision 13
- LOP–CW–09; Circulating Water System Ice Melting (CW); Revision 19
- LOP–DG–02; 0 Diesel Generator Readings; Revision 66
- LOP–DG–04; Diesel Generator Special Operations; Revision 76
- LOP–RH–14; Backwash Of The Residual Heat Removal Service Water Strainers; Revision 14
- LOR–1H13–P601–A104; Diesel Generator 1B Cooling Water Pump Trouble/Strainer; Revision 4
- LOR–1H13–P601–A502; 1B DG Fuel or Fuel Oil Transfer Pump Failure; 74/1D0029, 1E22–K44; Revision 4
- LOR–1H13–P601–B112; 1A RHR Service Water Radiation High; Revision 1
- LOR–1H13–P601–B204; RHR Service Water Strainer 1E12–D300B Differential Pressure High; Revision 4
- LOR–1H13–P601–C202; RHR Service Water Strainer 1A Differential Pressure High; Revision 3
- LOR–1PM01J–A516; 0 Diesel Generator Cooling Water Strainer 0DG01F Diff. Press. High; Revision 2
- LOR–1PM01J–B306; Diesel Generator 1A Cooling Water Strainer Differential Pressure High; Revision 1
- LOS–RH–Q4; Cycling CSCS Bypass Line Isolation Valve; Revision 5
- LS–MISC–26; LaSalle 2014A Risk Ranking of Heat Exchangers; Revision 2
- MR Function Evaluation LAS–1–CM–01; Emergency Operation of Post–LOCA Accident Primary Containment Atmosphere Hydrogen and Oxygen Monitors; 8/3/2018
- MR Function Evaluation LAS–2–RH; RH–01 Suppression Pool Cooling; 5/15/2018
- Murray and Trettel, Incorporated; Meteorological Monitoring Tower Inspection Report; 06/27/2018
- Murray and Trettel, Incorporated; Monthly Report on the Meteorological Monitoring Program at the LaSalle County Nuclear Generating Station; 05/2018
- NOSA–LAS–18–04 (AR 4133019); Chemistry, Radwaste, Effluent and Environmental Monitoring Audit Report; 06/20/2018
- NSWP–M–04; Pipe Support Installation and Inspection Work Procedure; Revision 3
- Operations Log; 5/15/2018–5/16/2018
- OP–LA–1010–111–1002; LaSalle Operations Philosophy Handbook; Revision 74
- PI–AA–125; Corrective Action Program (CAP) Procedure; Revision 6
- PORC 18–018; L2M20; 9/2/2018
- RA–05–48; Letter, Exelon to NRC; Post Outage 90-Day Inservice Inspection Summary Report for L2R9; 06/10/2005
- VM J–0155.000; Vendor Equipment Technical Information Program (VETIP); Stationary Power Operator’s Manual, by Electro-Motive (GM); Undated
- WC–AA–101; On-Line Work Control Process; Revision 28
- WO 1628656; Disassemble RHR HT Exchanger to Inspect Service Water Baffle; 06/17/2014
- WO 1628657; (Finish) Eddy Current Test 2E12–B001B B RHR Heat Exchanger; 08/12/2014
- WO 1691942; Inspection of North End of WS Tunnel for Corbicula; 10/31/2015
- WO 1709981; (Finish) LTS–200–17, RHR HX Heat Xfer Test; 12/08/2017
- WO 1745529–01; IM–EWP–0TC–VC050B B VC EMU Train HTR Manual Thermal Cut-Out; 9/18/2018
- WO 1771573; CSCS Pond Sediment Deposition Check; 06/08/2016
- WO 1803817–01; IM–EWP–0TC–VC050A—Thermal Cutout for Heater 01AB; 9/18/2018
- WO 1820988; Clean Unit 1 A CW Inlet Bay & Bypass Line; 03/24/2017

- WO 1841825; LOS–RH–Q1 2B RHR WS Operability & Inservice Test; 09/22/2015
- WO 1843208–01; EQ, IM EQP—Replace Capacitors in Flow Controller, E: 1FC–VG003–CX, FC; 8/15/2018
- WO 1891296; Inspection of South End of WS Tunnel for Corbicula and Sedim; 12/07/2017
- WO 1909979; Disassemble RHR HT Exchanger to Inspect Service Water; 01/24/2018
- WO 1911195; (Finish) Eddy Current Test 1E12–B001B B RHR Heat Exchanger; 08/15/2017
- WO 1914236; LOS–RH–Q1 1B RHR WS Operability & Inservice Test; 07/01/2016
- WO 1916130–06; EM 2E12–F064C Klockner Moeller MCC 2AP83E–E6 Cubicle Replacement; 9/1/2018
- WO 1916130–07; EM 2E12–F064C Klockner Moeller MCC 2AP83E–E6 Cubicle Replacement; 9/1/2018
- WO 1918632–01; Charcoal Sample from Standby Gas Treatment Train 2; 04/18/2018
- WO 1918633–01; Standby Gas Treatment HEPA Filter Test; 4/19/2018
- WO 1918634–01; Standby Gas Treatment Charcoal Filter Leak Test; 4/19/2018
- WO 1925828–01; SBGT Filter Flow; 03/20/2018
- WO 1937465; LOS–RH–Q1 1B RHR WS Operability & Inservice Test; 10/03/2016
- WO 4654877; LRA LOS–RH–Q1 2B RHR WS Operability & Inservice Test; 09/21/2017
- WO 4657164–01; Replace LPCS/RHR A Inj Vlvs Reactor Press Intlk Switch; 7/11/2018
- WO 4662023; LOS–RH–Q4 Cycle 0E12–F300; 10/07/2017
- WO 4696391; LOS–RH–Q4 Cycle 0E12–F300; 01/09/2018
- WO 4702757–01; "B" Upper End Welded Tendon Cover Visual Inspection; 02/19/2018
- WO 4731733; LRA LOS–RH–Q1 1B RHR WS Operability & Inservice Test; 03/29/2018
- WO 4734043; LOS–RH–Q4 Cycle 0E12–F300; 04/10/2018
- WO 4774779–01; Upstream HEPA Filter Could Not Be Tested; 4/19/2018
- WO 4804454–01; LOS–VG–M1 U1 SBGT Att 1A; 8/6/2018
- WO 4817293–01; LOS–VG–M1 U1 SBGT Att 1A; 9/4/2018
- WO 4822297–05; 2CM028 Failed to Close; 8/30/2018
- WO 4822297–06; 2CM028 Failed to Close; 9/2/2018
- WO 4827192–01; IM EWP—Replace Capacitors in Flow Controller; 9/7/2018
- WR Task 970003727–02; Inspect Tendon V213B; 04/05/1999