



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, ILLINOIS 60532-4352

May 15, 2018

EA-18-035

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

**SUBJECT: ERRATA—LASALLE COUNTY STATION, UNITS 1 AND 2—NRC INTEGRATED
INSPECTION REPORT 05000373/2018001 AND 05000374/2018001 AND
EXERCISE OF ENFORCEMENT DISCRETION**

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (NRC) identified an administrative error in the NRC Integrated Inspection Report 05000373/2018001 and 05000374/2018001 (ML18131A300), dated May 11, 2018. Specifically, the Sections entitled "71111.08—Inservice Inspection Activities," "71124.01—Radiological Hazard Assessment and Exposure Controls," "71124.03—In-Plant Airborne Radioactivity Control and Mitigation" and "71124.04—Occupational Dose Assessment" were erroneously omitted from the report. As a result, the NRC has reissued the report in its entirety with these Section added to correct the error.

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 5
Division of Reactor Projects

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

Enclosure:
IR 05000373/2018001; 05000374/2018001

cc: Distribution via ListServ®

Letter to Bryan C. Hanson from Billy Dickson dated May 15, 2018

SUBJECT: ERRATA—LASALLE COUNTY STATION, UNITS 1 AND 2—NRC INTEGRATED INSPECTION REPORT 05000373/2018001 AND 05000374/2018001 AND EXERCISE OF ENFORCEMENT DISCRETION

DISTRIBUTION:

Jeremy Bowen
RidsNrrDorlLpl3
RidsNrrPMLaSalle
RidsNrrDirslrib Resource
Steven West
Darrell Roberts
Richard Skokowski
Allan Barker
DRPIII
DRSIII
ROPreports.Resource@nrc.gov

ADAMS Accession Number: ML18136A553

OFFICE	RIII	RIII	RIII		
NAME	RNg:lg	KLambert for RSkokowski	BDickson		
DATE	5/15/2018	5/15/2018	5/15/2018		

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Numbers: 50-373; 50-374

License Numbers: NPF-11; NPF-18

Report Numbers: 05000373/2018001; 05000374/2018001

Enterprise Identifier: I-2018-001-037

Licensee: Exelon Generation Company, LLC

Facility: LaSalle County Station, Units 1 and 2

Location: Marseilles, IL

Dates: January 1 through March 31, 2018

Inspectors: R. Ruiz, Senior Resident Inspector
J. Havertape, Resident Inspector
W. Schaup, Senior Resident Inspector, Clinton
S. Bell, Health Physicist
J. Cassidy, Senior Health Physicist
M. Domke, Reactor Inspector
C. Zoia, RIII Senior Operations Engineer
R. Zuffa, Resident Inspector, Illinois Emergency
Management Agency
L. Torres, ASME Inspector, Illinois Emergency
Management Agency

Approved by: B. Dickson, Chief
Branch 5
Division of Reactor Projects

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 One and Two, 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. NRC and self-revealed findings, violations, and additional items are summarized in the table below.

List of Findings and Violations

Post-Maintenance Testing Failed to Demonstrate Testable Check Valve Function			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018001-01; 05000374/2018001-01 Closed	[H.5] – Work management	71111.15 – Operability Determinations and Functionality Assessments
<p>A self-revealed Green finding of very low safety significance and an associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion XI, “Test Control,” was documented by the inspectors for the licensee’s failure to perform post-maintenance testing that would demonstrate that structures, systems and components (SSCs) would perform satisfactorily in service. Specifically, following maintenance on the Unit 2 ‘B’ residual heat removal (RHR) shutdown cooling (SDC) return testable check valve, 2E12-F050B, and the Unit 1 ‘A’ RHR SDC return testable check valve, 1E12-F050A, the post maintenance test performed failed to identify that they would not open fully when in service, resulting in the valves being unable to pass full flow during SDC mode of RHR operation.</p>			
Failure to Update Throttle Valve Position in Accordance with Station Procedures			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018001-02 Closed	[H.12] – Avoid complacency	71111.19 – Post Maintenance Testing
<p>The inspectors identified a Green finding of very low safety significance and an associated Non-Cited Violation (NCV) of LaSalle Technical Specifications 5.4.1, “Procedures,” for the licensee’s failure to implement station procedures recommended in Regulatory Guide 1.33, Appendix A, Section 9. Specifically, on two separate occasions while performing a flow balance on the Unit 1 ‘A’ diesel generator (DG) cooling water system, procedural errors resulted in the licensee failing to update the throttle valve position to be used during manual backwash of the Unit 1 ‘A’ DG cooling water strainer with the correct position.</p>			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
EA	18-035	Licensee Implementation of Enforcement Guidance Memorandum 15-002, "Enforcement Discretion for Tornado-Generated Missile Protection Noncompliance	71111.15	Open
URI	05000373/2017004-01; 05000374/2017004-01	Complete versus Truncated Shifts on Proficiency Watches	71111.11	Closed

TABLE OF CONTENTS

PLANT STATUS	5
INSPECTION SCOPES	5
REACTOR SAFETY	5
RADIATION SAFETY	9
OTHER ACTIVITIES – BASELINE	10
INSPECTION RESULTS	10
EXIT MEETINGS AND DEBRIEFS	19
DOCUMENTS REVIEWED	19

PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On February 19, 2018, the unit shut down for the L1R17 refueling outage. The unit was returned to rated thermal power starting on March 14, 2018. On March 21, 2018, the unit began the L1F46 outage to repair valve 1B33–F067B bonnet inspection port line break. The unit was resynchronized to the grid on March 25, 2018. During the inspection period there were periodic load reductions for control rod pattern changes. The unit ended the inspection period at rated thermal power.

Unit 2 remained at rated thermal power for the duration of the inspection period, except for periodic small load reductions and control rod pattern adjustments.

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 extreme cold weather on January 3, 2018.

71111.04—Equipment Alignment

Partial Walkdown (3 Samples)

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

- (1) Unit 2 reactor core isolation cooling (RCIC) with low pressure core spray (LPCS) and ‘A’ residual heat removal (RHR) inoperable;
- (2) Unit 2 ‘A’ RHR LPCS injection function; and
- (3) Unit 2 Division 3 emergency DG during Division 1 Alternate Current/Direct Current work window.

71111.05AQ—Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

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

- (1) Fire Zone 3I5, Unit 2, RHR Pump A Cubicle, Elevation 673'4";
- (2) Fire Zone 3I3, Unit 2, RHR Pump B&C Cubicle, Elevation 673'4";
- (3) Fire Zone 7B3, Unit 1 Division 1, Standby DG Room;
- (4) Fire Zone 2B2, Unit 1, Elevation 820'-6"; and
- (5) Fire Zone 4C1, Control Room, Elevation 768'-0".

71111.08—Inservice Inspection Activities (1 Sample)

The inspectors assessed the effectiveness of the licensee's programs for monitoring degradation of the reactor coolant system boundary, risk-significant piping system boundaries, and the containment boundary by reviewing the following activities from February 20, 2018 to February 27, 2018:

- (1) Visual examination (VT-3) of component ID FW02-1004V, FWA, spring support, located in the DW 770' 20°, category F-A;
- (2) Surface magnetic particle (MT) examination of reactor pressure vessel (RPV) top head to flange (TH-FL) weld, component GEL-1009-AG, category B-A;
- (3) Surface magnetic particle (MT) examination of component FW02-1004V, feed water line A (FWA), 4 lugs located in the drywell (DW), 770' 20°, Category B-K;
- (4) Volumetric ultrasonic (UT-1) examination main steam (MS) line components:

<u>Component ID</u>	<u>System ID/Location</u>	<u>Description</u>	<u>ASME CAT</u>
MS-1001-09	MSA / DW 780', 60°	26" Pipe to Weld-O-Let	R-A
MS-1001-10	MSA / DW 780', 50°	26" Pipe to Weld-O-Let	R-A
MS-1002-12	MSB / DW 780', 80°	26" Pipe to Weld-O-Let	R-A
MS-1002-20	MSB / DW 780', 70°	26" Pipe to Weld-O-Let	R-A
- (5) Volumetric ultrasonic (UT-2) examination of 24" pipe to elbow component IRR-1007-02, located in the DW 772' 0°, Category R-A;
- (6) Volumetric ultrasonic (UT-5) examination of components 1-FLANGE-1-22 and 1-STUD-1-22, reactor head stud and flange numbers 1 through 22, Category B-G-1;
- (7) Volumetric ultrasonic (UT-300)(UT-311) examination of component ID LCS-1-N3C, RPV Nozzle to Shell weld, located in the DW 811', 252°, Category B-D;
- (8) Volumetric manual, phased-array (PA-1), ultrasonic examination of dissimilar metal safe end extension weld component LCS-1-N11, located in the DW 757', 150°;
- (9) ASME class 1 pressure boundary risk significant weld activities for weld nos. 1-14 per work order task no. 01840546-01, installation of inspection ports for reactor recirculation valve 2B33-F067; and
- (10) Relevant indication analytically evaluated for continued service per engineering change (EC) no. 618338 for RPV longitudinal shell weld component LCS-2-BA.

71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated Licensed Operator Requalification Training Simulator Set 18–1–6 on February 8, 2018.

Operator Performance (1 Sample)

The inspectors observed and evaluated Unit 1 startup activities in the control room on March 14, 2018.

71111.12—Maintenance Effectiveness

Quality Control (1 Sample)

The inspectors evaluated maintenance and quality control activities associated with the following equipment performance issue:

- (1) Unit 1 'D' RHR service water fuse replacement and traceability.

71111.13—Maintenance Risk Assessments and Emergent Work Control (2 Samples)

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

- (1) Unit 2 Division 1 response time testing; and
- (2) Switchyard switching activities.

71111.15—Operability Determinations and Functionality Assessments (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit 1 RCIC steam supply spurious closure;
- (2) Unit 0 Division 1 emergency DG air start check valve leak;
- (3) Unit 1, Division 1 'A' RHR unable to achieve full flow in SDC mode;
- (4) Enforcement Guidance Memorandum (EGM) 15–002 tornado-generated missile non-compliances;
- (5) Closure of safety-related breaker service-life URI; and
- (6) Snubber 1MS00–1015S failed functional test.

71111.19—Post Maintenance Testing (8 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) Unit 1, Division 3 high pressure core spray room cooler, core standby cooling system piping replacement;
- (2) Unit 1 'A' DG cooling water strainer valve replacement;
- (3) Unit 1, Division 2 room cooler replacement flow test;
- (4) Unit 1 safety relief valve leak check;
- (5) Unit 1 reactor core isolation cooling testing;
- (6) Unit 1, Division 1 integrated emergency core cooling system (ECCS) testing;
- (7) Unit 1 SCRAM response time testing; and
- (8) Unit 1 reactor vessel hydrostatic test.

71111.20—Refueling and Other Outage Activities (2 Samples)

The inspectors evaluated refueling outage L1R17 activities from February 19, 2018 to March 14, 2018.

The inspectors evaluated forced outage L1F46 activities from March 22, 2018 to March 25, 2018.

71111.22—Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (3 Samples)

- (1) LIS-R1-101, Unit 1 RCIC high steam flow isolation;
- (2) Unit 1 shiftly surveillance, narrow range channel check; and
- (3) LOP-FC-03, removing fuel pool cooling low suction pressure trip jumpers.

In-service (1 Sample)

- (1) Unit 1 'A' DG cooling water replacement pump curve determination, on March 11, 2018.

Containment Isolation Valve (1 Sample)

- (1) Unit 1 LPCS primary containment isolation valve high pressure water test, LTS-900-2; on February 28, 2018.

71114.06—Drill Evaluation

Drill/Training Evolution (1 Sample)

The inspectors evaluated a "tabletop" emergency planning drill at the Technical Support Center on January 31, 2018.

RADIATION SAFETY

71124.01—Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (1 Sample)

The inspectors evaluated radiological hazards assessments and controls.

Instructions to Workers (1 Sample)

The inspectors evaluated worker instructions.

Contamination and Radioactive Material Control (1 Sample)

The inspectors evaluated contamination and radioactive material controls.

Radiological Hazards Control and Work Coverage (1 Sample)

The inspectors evaluated radiological hazards control and work coverage.

High Radiation Area and Very High Radiation Area Controls (1 Sample)

The inspectors evaluated risk-significant high radiation area and very high radiation area controls.

Radiation Worker Performance and Radiation Protection Technician Proficiency (1 Sample)

The inspectors evaluated radiation worker performance and radiation protection technician proficiency.

71124.03—In-Plant Airborne Radioactivity Control and Mitigation

Use of Respiratory Protection Devices (1 Sample)

The inspectors evaluated respiratory protection.

71124.04—Occupational Dose Assessment

Source Term Characterization (1 Sample)

The inspectors evaluated the licensee's source term characterization.

OTHER ACTIVITIES – BASELINE

71151—Performance Indicator Verification (6 samples)

The inspectors verified licensee performance indicators submittals listed below:

- (1) IE01: Unplanned Scrams per 7000 Critical Hours (2 Samples) January 1, 2017 - December 31, 2017;
- (2) IE03: Unplanned Power Changes per 7000 Critical Hours (2 Samples) January 1, 2017 - December 31, 2017; and
- (3) IE04: Unplanned Scrams with Complications, (2 Samples) January 1, 2017 - December 31, 2017.

INSPECTION RESULTS

71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

<p>Unresolved Item (Closed)</p>	<p>Complete versus Truncated Shifts on Proficiency Watches 050000373/2017004–01; 050000374/2017004–01</p>	<p>71111.11 – Licensed Operator Requalification Program and Licensed Operator Performance</p>
<p><u>Description:</u></p> <p>LaSalle Station uses an individual’s normal shift work hours to determine the length of his/her proficiency watch. While the operating shift crews are assigned to 12–hour shifts, those licensed Reactor Operators (ROs) assigned to other staff positions at LaSalle normally work 8–hour shifts per day, as documented in OP–LA–101–111–1002, “LaSalle Operations Philosophy Handbook.” LaSalle Station refers to these individuals as Administrative ROs. Since it was unclear whether the 8–hour shifts were considered complete shifts or truncated 12–hour shifts, the Operator Licensing and Training Branch (IOLB) was requested per Regional Office Interaction (ROI) ROI–17–25, “Clarification of Complete vs. Truncated Shift for Proficiency Watches,” to clarify the meaning of a complete shift, and to determine if the licensee’s practice was acceptable.</p> <p>Closure Basis: Clarification was received from IOLB per ROI–17–25, which stated that the current facility licensee proficiency watch practices meets the requirements of 10 CFR 55.53(e) to maintain an operator’s license in an active status. Therefore, this URI was closed with no findings or violations.</p> <p>Corrective Action Program (CAP) References: AR 4070501</p>		

71111.15—Operability Determinations and Functionality Assessments

Post-Maintenance Testing Failed to Demonstrate Testable Check Valve Function			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018001-01; 05000374/2018001-01 Closed	[H.5] – Work management	71111.15 – Operability Determinations and Functionality Assessments
<p>A self-revealed Green finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion XI, “Test Control,” was documented by the inspectors for the licensee’s failure to perform post-maintenance testing that would demonstrate that SSCs would perform satisfactorily in service. Specifically, following maintenance on the Unit 2 ‘B’ RHR SDC return testable check valve, 2E12–F050B, and the Unit 1 ‘A’ RHR SDC return testable check valve, 1E12–F050A, the post maintenance test performed failed to identify that they would not open fully when in service, resulting in the valves being unable to pass full flow during SDC mode of RHR operation.</p>			
<p><u>Description:</u></p> <p>During the 2013 Unit 2 refueling outage (L2R14), the licensee implemented a modification on testable check valves installed in the RHR, LPCS, and High Pressure Core Spray (HPCS) systems under Engineering Change (EC) 390261. The purpose of this modification was to remove the air actuators and install a mechanism to enable the valves to be pinned open, allowing reverse flow flushing of ECCS systems. Additionally, the modification allowed for manual exercise of the check valves in the open direction using a torque wrench to satisfy ASME OM code requirements historically met by performing ECCS forward flushes. The same modification was applied to Unit 1 during the 2014 refueling outage under EC 390771.</p> <p>On February 2, 2015, during the shutdown for the 2015 Unit 2 refueling outage (L2R15), the licensee established SDC, but was unable to achieve rated flow through the ‘B’ SDC loop. The licensee entered the issue into the CAP as AR 2446466. The licensee investigation determined that a procedure error during implementation of EC 390261 under work order (WO) 1612880 caused valve 2E12–F050B to bind, preventing the valve from being able to open fully. The binding occurred because when the check valve was assembled, the spur gear was installed backwards. This created a dimensional interference that prevented the disc of valve 2E12–F050B from being able to go through its full 80 degree range of travel, restricting SDC flow by approximately 15 percent.</p> <p>During the 2016 Unit 1 refueling outage (L1R16), valve 1E12–F050A failed local leak rate testing. The licensee disassembled, inspected, and repaired the valve under WO 933638. On February 19, 2018, during shutdown for the 2018 Unit 1 refueling outage (L1R17), the licensee established SDC, but was unable to achieve rated flow through the ‘A’ SDC loop. The licensee entered the issue into the CAP as AR 4105645. During troubleshooting, the licensee found the spur gear for valve 1E12–F050A misaligned by one tooth. The misalignment resulted in valve 1E12–F050A being limited to 44 degrees travel when the total travel range is designed to be 80 degrees.</p> <p>Station procedure MA–AA–716–012, “Post Maintenance Testing,” section 4.2.2, states that a satisfactory test verifies a particular component is able to perform its intended function and no</p>			

new problems are created by the maintenance activity. Additionally, Attachment 1, of the procedure, provides guidance for post-maintenance testing of check valves, which recommends a functional stroke following check valve disassembly/assembly. The document defines functional stroke as “Full open and close cycles may be verified using visual valve travel and/or position indication.”

The inspectors reviewed the post maintenance testing requirements for WOs 1612880 and 933638. First, the inspectors noted that in these two cases, the post maintenance testing performed failed to identify new problems introduced by the maintenance activities. Specifically, the spur gear was installed backwards for valve 2E12–F050B and the spur gear was misaligned for valve 1E12–F050A. Second, the licensee used torque measurement as acceptance criterion for the functional check of the check valve in the open direction. While this technique addresses valve binding within the range of check valve travel, it does not detect a restricted range of travel as demonstrated with valve 2E12–F050B and valve 1E12–F050A; therefore, the inspectors concluded that torque measurement was not adequate to ensure the maintenance had been accomplished satisfactorily. Additionally, measuring running torque in the open direction does not capture valve travel in a quantitative manner and therefore, the test method does not demonstrate a full open and close functional stroke.

The inspectors also noted that during the planning of WO 933638, maintenance planners did not incorporate explicit guidance into the work order instructions to ensure steps containing acceptance criteria of the underlying maintenance procedures were performed. Instead, the work order directed the maintenance workers to reassemble valve 1E12–F050A using sections of the maintenance procedure as required. This allowed maintenance personnel marking the steps that ensured full valve travel as not applicable.

Corrective Actions: The 2E12–F050B valve was repaired and satisfactorily post maintenance tested. Extent of condition inspections were conducted on all valves within scope of EC 390261 and 390771. These inspections consisted of manual range of travel angle measurements, or full flow tests to ensure the valves would fully open. No degraded conditions were noted. Additionally, the licensee implemented a maintenance procedure change to include instructions to preclude incorrect reassembly of testable check valves.

Valve 1E12–F050A was repaired and satisfactorily post maintenance tested.

Corrective Action Program References: AR 4127878.

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee’s failure to demonstrate that SSCs will perform satisfactorily in service was a performance deficiency. Specifically, after maintenance activities, the post maintenance tests performed on check valves 2E12–F050B and 1E12–F050A failed to demonstrate that the valves would perform satisfactorily in service as evidenced when the valve’s restricted range of travel was unable to pass full flow during the SDC mode of RHR operation. The inspectors determined that the issues associated with check valves 2E12–F050B and 1E12–F050A constituted two examples of the same performance deficiency.

Screening: The performance deficiency was more than minor because it adversely affected the procedure quality attribute of the Mitigating Systems cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable

consequences. Specifically, the post maintenance testing did not ensure that the testable check valves would be able to open fully. This resulted in valve 2E12–F050B and valve 1E12–F050A being unable to pass rated flow when the RHR system was placed into SDC mode of operation.

Significance: The inspectors assessed the significance of the findings using IMC 0609, Appendix G, Attachment 1, “Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings,” dated May 9, 2014. Since it was determined that the finding affected the Mitigating Systems cornerstone the inspectors used Exhibit 3, “Mitigating Systems Screening Questions,” the inspectors determined that the finding was of very low safety significance (Green) because the answers to each of the screening questions was “No.”

Cross-Cutting Aspect: The inspectors determined this finding affected the cross-cutting area of human performance in the aspect of work management, where the organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. Specifically, during the execution of WO 933638, maintenance planning did not incorporate explicit guidance into the work order instructions to ensure steps containing acceptance criteria of the underlying maintenance procedures were performed. Instead, the work order directed the maintenance workers to reassemble valve 1E12–F050A using sections of the maintenance procedure as required. This allowed the maintenance personnel marking the steps that ensured full valve travel as not applicable. [H.5]

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” requires, in part, that a test program be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to the above, on February 20, 2013, and on March 7, 2016, the licensee failed to assure that testing required to demonstrate structures, systems and components will perform satisfactorily in service was identified and performed in accordance with written procedures. Specifically, after maintenance activities, the post maintenance tests performed on check valves 2E12–F050B and 1E12–F050A failed to demonstrate that the valves would perform satisfactorily in service as evidenced when the valve’s restricted range of travel was unable to pass full flow during the SDC mode of RHR operation.

Disposition: This violation is being treated as a Non-Cited Violation, consistent with Section 2.3.2 of the Enforcement Policy.

Enforcement Discretion	Enforcement Action (EA) 18-035: Licensee Implementation of Enforcement Guidance Memorandum 15-002, "Enforcement Discretion for Tornado-Generated Missile Protection Noncompliance	71111.15 – Operability Determinations and Functionality Assessments
------------------------	---	---

Description:

On June 10, 2015, the NRC issued Regulatory Issue Summary (RIS) 2015-06, "Tornado Missile Protection" (ML15020A419), focusing on the requirements regarding tornado-generated missile protection and required compliance with the facility-specific licensing basis. The RIS also provided examples of noncompliance that had been identified through different mechanisms and referenced Enforcement Guidance Memorandum (EGM) 15-002, "Enforcement Discretion For Tornado Generated Missile Protection Non-Compliance," which was also issued on June 10, 2015 (ML15111A269) and revised on February 7, 2017 (ML16355A286). The EGM applies specifically to an SSC that is determined to be inoperable for tornado generated missile protection. The EGM stated that a bounding risk analysis performed for this issue concluded that tornado missile scenarios do not represent an immediate safety concern because their risk is within the LIC-504, "Integrated Risk-Informed Decision-Making Process for Emergent Issues", risk acceptance guidelines. The EGM provided for enforcement discretion of up to three years from the original date of issuance of the EGM.

The EGM allowed NRC staff to exercise this enforcement discretion only when a licensee implements, prior to the expiration of the time mandated by the LCO, initial compensatory measures that provided additional protection such that the likelihood of tornado missile effects were lessened. In addition, licensees were expected to follow these initial compensatory measures with more comprehensive compensatory measures within approximately 60 days of issue discovery. The comprehensive measures should remain in place until permanent repairs are completed, or until the NRC dispositions the non-compliance in accordance with a method acceptable to the NRC such that discretion is no longer needed.

Appendix A to 10 CFR 50, "General Design Criteria for Nuclear Power Plants (GDC)," Criterion 4, "Environmental and Dynamic Effects Design Basis," states in part that SSCs important to safety shall be adequately protected against dynamic effects including missiles. On February 15, 2018, during evaluation of protection for Technical Specifications (TS) equipment from the damaging effects of tornado generated missiles, LaSalle County Station identified a non-conforming condition in the plant design such that specific TS equipment is considered to not be adequately protected from tornado generated missiles. Specifically, tornado generated missiles could strike the components supporting the operation of Control Room (VC) and Auxiliary Electric Room (VE) ventilation. This could result in inoperable VC/VE systems, which provide a protected environment for occupants to control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke if a tornado were to occur. In addition, the Unit 2 Division 2 motor control center (MCC) 236X-1 was affected, which impacted various loads on Unit 2 including the Unit 2 standby gas treatment, Unit 2 Division 2 post LOCA system, B main control room area filtration system supply and exhaust fan, reactor building Division 2 isolation damper control logic, Unit 2 Division 2 battery room exhaust fan and Unit 2 24/48 Volt battery rooms exhaust fans. This would result in a loss of power to components and systems rendering them inoperable.

The condition was reported to the NRC in Event Notice (EN) 53213 as an unanalyzed condition and potential loss of safety function.

Corrective Actions: The licensee documented the inoperability of the SSCs and the affected TS Limiting Conditions for Operation (LCOs) in the CAP and in the control room operating log. The shift manager notified the NRC resident inspector of the implementation of EGM 15-002, and documented the implementation of the compensatory measures to establish the SSCs "operable but nonconforming" prior to expiration of the LCO required action.

Initial (immediate) compensatory measures were established by an operations standing order that included:

- Procedures were verified to be put in place, with associated current training, for performing actions in response to a tornado;
- Procedures were verified to be put in place, with associated current training, for actions to be taken if a tornado watch is issued for the area;
- Procedures were verified to be put in place, with associated current training, for actions to be taken if a tornado warning is issued for the area;
- Verification that training was up to date for individuals responsible for implementing preparation and response procedures; and
- Established a heightened station awareness and preparedness level relative to identified tornado missile vulnerabilities.

The comprehensive (60 day) compensatory measures were established by incorporating the standing order actions and adding additional detail to operating procedure LOA-TORN-001, "High Winds/Tornado," Revision 22, for completing additional inspections and restoration actions on equipment vulnerable to tornado missile damage.

Corrective Action Program References: AR 4104401; AR 4104391; AR 4104393; AR 4104396; AR 4104397.

Enforcement:

Violation: The enforcement discretion was applied to the required shutdown actions of the following TS LCOs for both units:

- TS 3.7.4, "Control Room Area Filtration (CRAF) System";
- TS 3.7.5, "Control Room Area Ventilation Air Conditioning (AC)";
- TS 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)";
- TS 3.6.4.3; "Standby Gas Treatment (SGT) System"; and
- TS 3.8.7, "Distribution Systems—Operating".

Severity/Significance: The subject of this enforcement discretion, associated with tornado missile protection deficiencies was determined to be less than red (i.e., high safety significance) based on a generic and bounding risk evaluation performed by the NRC in support of the resolution of tornado-generated missile non-compliances. The bounding risk evaluation is discussed in Enforcement Guidance Memorandum 15-002, Revision 1, "Enforcement Discretion for Tornado-Generated Missile Protection Non-Compliance," and can be found in ADAMS, Accession No. ML16355A286.

Basis for Discretion: The NRC exercised enforcement discretion in accordance with Section 2.3.9 of the Enforcement Policy and EGM 15-002 because the licensee initiated initial compensatory measures that provided additional protection such that the likelihood of tornado missile effects were lessened. The licensee implemented actions to track the more

comprehensive actions to resolve the nonconforming conditions within the required 60 days. These comprehensive actions were to remain in place until permanent repairs were completed, which for LaSalle were required to be completed by June 10, 2018, or until the NRC dispositioned the non-compliance in accordance with a method acceptable to the NRC such that discretion was no longer needed.

71111.19—Post Maintenance Testing

Failure to Update Throttle Valve Position in Accordance with Station Procedures			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000373/2018001-02 Closed	[H.12] – Avoid complacency	71111.19 – Post Maintenance Testing
<p>The inspectors identified a Green finding of very low safety significance and an associated NCV of LaSalle Technical Specifications 5.4.1, “Procedures,” for the licensee’s failure to implement station procedures recommended in Regulatory Guide 1.33, Appendix A, Section 9. Specifically, on two separate occasions while performing a flow balance on the Unit 1 ‘A’ DG cooling water system, procedural errors resulted in the licensee failing to update the throttle valve position to be used during manual backwash of the Unit 1 ‘A’ DG cooling water strainer with the correct position.</p>			
<p><u>Description:</u></p> <p>On March 4, 2018, following completion of Unit 1 ‘A’ DG cooling water system modifications, the licensee performed a system flow balance per station procedure LOS–DG–SR6, “Division 2 Cooling Water System Test,” Revision 23 and WO 838371. While performing step E.2.19.2, the licensee noted that the required position of the Unit 1 ‘A’ DG cooling water strainer backwash valve, 1DG011, used during a manual backwash of the cooling water strainer had changed with the implementation of modifications to the system completed in the recent refueling outage (L1R17). This was annotated by a marking “Yes” next to step E.2.19.3, indicating that a procedure change was required for the Unit 1 ‘A’ DG cooling water strainer manual backwash implementing procedures, LOP–DG–04, “Diesel Generator Special Operations,” and LOS–DG–Q2, “1A/2A Diesel Generator Auxiliary Inservice Test.” The step had been properly marked in accordance with the station’s place keeping process as complete and the supervisory review was complete.</p> <p>After the Unit 1 ‘A’ DG was restored to operable on March 4, 2018, the inspectors reviewed the applicable documentation and noted that the required position of valve 1DG011 had changed from 3 turns open to 2 turns open to ensure that sufficient cooling was provided to the safety related components when backwashing the strainer. The inspectors identified that the licensee failed to assign an action to request a revision to procedures LOP–DG–04 and LOS–DG–Q2 to update the required position of the throttle valve to be used by operators if manual backwashing was performed. The inspectors informed the licensee of the issue, which was documented in the CAP as AR 4113635.</p> <p>The inspectors reviewed AR 4113635 for operability and to review corrective actions assigned. The inspectors noted an action was designated to update the procedures in question by April 4, 2018, and did not include interim corrective actions to inform operators of the required throttle position until the procedures were updated. The inspectors raised the concern with the licensee that in the event of a loss of offsite power, manual backwash of the</p>			

Unit 1 'A' DG cooling water strainer is relied upon to support Unit 1 'A' DG mission time, as described in Updated Final Safety Analysis Report (UFSAR) 9.2.1.1, and that with the throttle valve open further than required would be diverting more flow than intended from the safety-related components. The licensee captured the inspectors concerns in AR 4119714, and determined that positioning valve 1DG011 open more than desired would not impact system operability due to thermal margins documented in Design Analysis L-002404, "CSCS Cooling Water System "Road Map" Calculation."

While investigating additional NRC questions regarding post-maintenance testing of the Unit 1 'A' DG cooling water system, the licensee noted a calculation error for the required position of valve 1DG011 during the recent flow balance that was conducted under WO 4757136 on March 17, 2018. The error resulted in the required position for valve 1DG011 being documented as 1.5 turns open instead of 2.5 turns open. The licensee documented the calculation error in the CAP as AR 4120174. The licensee determined that the decrease in backwash flow associated with positioning the throttle valve 1.5 turns open instead of 2.5 turns open would not have affected the ability to backwash the Unit 1 'A' DG cooling water strainer, and therefore system operability.

Corrective actions: As immediate corrective actions the licensee placed an equipment status tag to designate the required position of valve 1DG011 for manual backwash until the procedure change could be completed. After improperly calculating the correct numbers of turns open the licensee updated the previously hung equipment status tags for valve 1DG011 to indicate the number of turns open for backwash.

Corrective Action Program References: AR 4113635, AR 4119714, 4120174

Performance Assessment:

Performance Deficiency: The inspectors determined that the failure to implement station procedures covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Appendix A, Section 9 was a performance deficiency. Specifically, on two separate occasions, procedural errors resulted in failing to update the throttle valve position to be used during manual backwash of the Unit 1 'A' DG cooling water strainer with the correct position. The inspectors determined the issues associated with WOs 838371 and 4757136, two activities affecting quality, constituted two examples of the same performance deficiency.

Screening: The performance deficiency was more than minor because the finding was associated with the procedure 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. Specifically, the licensee failed to update procedures LOP-DG-04 and LOS-DG-Q2 with the correct position of the valve 1DG011, adversely affecting the operation of Division 2 components by altering cooling flow to safety-related components due to valve 1DG011 being out of its required position for manual backwash of the Unit 1 'A' DG cooling water strainer.

Significance: Using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, 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: The inspectors determined this finding affected the cross-cutting area of human performance in the aspect of avoid complacency, where individuals recognize and

plan for the possibility of mistakes, latent issues and inherent risks, even while expecting successful outcomes and implement appropriate error reduction tools. Specifically, during execution of WO 838371, station place keeping requirements failed to ensure step E.2.19.3 of procedure LOS–DG–SR6 was completed, and in both instances supervisory reviews performed failed to identify that the actions had not been completed properly. [H.12]

Enforcement:

Violation: Technical Specification 5.4.1, “Procedures,” states that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in RG 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Appendix A, Section 9, requires, in part, that maintenance that can affect the performance of safety-related equipment be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstance.

Procedure LOS–DG–SR6, “Division 2 Cooling Water System Test,” is a maintenance procedure for the safety related DG cooling water system. Step E.2.19.3 of the procedure states, “If either or both of these procedures do not match the number of turns in step E.2.19.1, ensure an AT [Action tracking item] is written to have these procedures revised to match the new number of turns for the 1DG011, 1A DG cooling water strainer backwash valve.”

Procedure LOS–DG–SR6, step E.2.19.1, states, in part, to “calculate the number of turns for the hand wheel of 1DG011, 1A DG cooling water strainer backwash valve, ...”

Contrary to the above, the licensee failed to implement a safety related maintenance procedure recommended by RG 1.33 on two separate occasions. Specifically:

- On March 4, 2018, the licensee failed to implement step E.2.19.3 of procedure LOS–DG–SR6, “Division 2 Cooling Water System Test,” after performing maintenance on the Unit 1 ‘A’ DG cooling water system that required a flow balance in accordance with WO 838371. The maintenance changed the throttle position of valve 1DG011 for manual backwash of the 1A DG cooling water strainer and the licensee failed to update station procedures LOP–DG–04 and LOS–DG–Q2 with the correct throttle position per step E.2.19.3 of LOS–DG–SR6.
- On March 17, 2018, the licensee failed to implement step E.2.19.1 of procedure LOS–DG–SR6 after performing maintenance on the Unit 1 ‘A’ DG cooling water system that required another flow balance in accordance with WO 4757136. The maintenance also changed the throttle position of valve 1DG011 and the licensee failed to calculate the correct throttle position per step E.2.19.1 of procedure LOS–DG–SR6.

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

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 April 18, 2018, the inspector presented the quarterly resident inspector inspection results to Mr. W. Trafton and other members of the licensee staff.
- On March 3, 2018, the inspector presented the occupational radiation safety inspection results to H. Vinyard, and other members of the licensee staff.
- On February 27, 2018, the inspector presented the inservice inspection activities results to Mr. H. Vinyard, and other members of the licensee staff.

DOCUMENTS REVIEWED

71111.01—Adverse Weather Protection

- LOA-WL-001; River Screen House and Lake Abnormal; Revision 12a
- OP-AA-108-107-1001; Station Response to Grid Capacity Condition; Revision 7
- Plant Status, Nuclear Steam Supply System; 1/2/2018

71111.04—Equipment Alignment

- AR 4091551; RCIC Isolation Alarm Received
- AR 4091820; Non-Tech Spec Flow Switch Brok, Causing RCIC Isolation
- AR 4098863; "NRC Question Regarding 2E12-F099A/B Breaker Position"
- AR 41404134; Div 3 Scaffold Built Not Per Schedule on Div 1 Day
- Fig. 32-1; RCIC Piping Diagram; 4/2009
- Fig. 32-1A; RCIC Steam Piping Diagram; 4/2009
- Fig. 32-1B; RCIC Water Piping Diagram 4/2009
- Fig. 32-2; RCIC Control Panel Mimic; 4/2009
- Fig. 32-3; RCIC Turbine Trip Throttle Valve; 10/1999
- Fig. 32-4; RCIC Turbine Governor System; 4/2009
- Fig. 32-5; RCIC Turbine Speed Control; 10/1999
- Fig. 32-6; RCIC Turbine Governor Startup; 10/1999
- Fig. 32-7; RCIC Turbine Lube Oil System; 10/1999
- Fig. 32-8; RCIC Barometric Condenser Assembly; 10/1999
- Fig. 32-9; RCIC Rupture Diaphragm (sic); 10/1999
- Fig. 64-01; Shutdown Cooling/Head Spray Overview; 8/2004
- Fig. 64-02; Alternate Shutdown Cooling Overview; 10/1999
- Fig. 64-03; Supppression Pool Cooling/Full Flow Test Overview; 10/1999
- Fig. 64-04; LPCI Overview; 10/1999
- Fig. 64-05; Suppression Chamber / Drywell Spray Overview; 8/2001
- Fig. 64-06; Plant Support Functions Overview; 8/2004
- Fig. 64-07; Shutdown Cooling Flow Paths; 8/2004
- Fig. 64-08; Alternate Shutdown Cooling 1st Example; 8/2004
- Fig. 64-09; Alternate Shutdown Cooling 2nd Example; 9/2004
- Fig. 64-10; Suppression Pool Cooling/Full Flow test; 8/2004
- Fig. 64-11; LPCI Flow Paths; 8/2004
- Fig. 64-12; Containment Spray; 8/2004
- Fig. 64-13; RHR System Loop B; 3/2001
- Fig. 64-14;RHR System Components; 8/2004

- Fig. 64-15; RHR System Loop A; 10/1999
- Fig. 64-16; RHR System Loop B; 5/2008
- Fig. 64-17; RHR Pump Start/Override Control; 10/1999
- Fig. 64-18; E12-F024 Interlocks; 10/1999
- Fig. 64-19; E12-F042 Interlocks; 10/1999
- Fig. 64-20; E12-F027 Interlock; 10/1999
- Fig. 64-21; E12-F016 / E12-F017 Interlock; 10/1999
- Fig. 64-22; Typical LPCI Initiation Logic; 8/2004
- Fig. 64-23; Suppression Pool Cleanup System; 10/1999
- LOP-RH-04E; Unit 2 Residual Heat Removal System Electrical Checklist; 1/30/2018
- LOP-RH-11; Preparation for Standby Operation of the Low Pressure Coolant Injection (LPCI) System; Revision 30
- LOP-RH-15; RHR Fuel Pool Cooling Assist and Alternate Fuel Pool Cooling Modes; Revision 18
- LOP-RH-2AM; Unit 2 A Residual Heat Removal System Mechanical Checklist; 1/29/2018
- LOP-RI-05; Preparation for Standby Operation of the Reactor Core Isolation Cooling System; Revision 34
- M-134; P&ID Core Standby Cooling System Equipment Cooling Water System; Revision S
- M-141; P&ID High Pressure Core Spray (HPCS); Revision AS
- M-142; P&ID Residual Heat Removal System (RHRS); Revisions AD, BC
- M-147; P&ID Reactor Core Isolation Coolant System (R.C.I.C); Revisions BL, AP
- RH-1; Training Document: Residual Heat Removal System; Revision 2
- RI-1; Training Document: RCIC System; Revision 5

71111.05AQ—Fire Protection Annual/Quarterly

- FZ 2B2; LaSalle County Generating Station Pre-Fire Plan, RX Bldg 820'-6" Elev. U1 General Area & RT Area
- FZ 3I3; LaSalle County Generating Station Pre-Fire Plan, RX Bldg. 673'-4" Elev. U2 RHR Pump Room "B" and "C" Cubicle; Revision 1
- FZ 3I5; LaSalle County Generating Station Pre-Fire Plan, RX Bldg. 673'-4" Elev. U2 RHR Pump Room "A" Cubicle; Revision 1
- FZ 4C1; LaSalle County Generating Station Pre-Fire Plan, Aux Bldg. 768'-0" Elev. Control Room; Revision 2
- FZ 7B3; LaSalle County Generating Station Pre-Fire Plan, DG Bldg. 710'-0" Elev. U1 Division 1 Standby Diesel Generator Room; Revision 2

71111.08—Inservice Inspection Activities

- WO 01840546-01; M2 Replace Bonnet and Stem on 2B33-F067A per EC#618120; 02/29/2017
- WO 04631004-03; Addition of New Stainless Steel Valve in Pipe Line 1DG14A-6"; 02/13/2018
- EC 0000618338; Evaluate Indication in Reactor Vessel Vertical Weld (IR 3975049) and in Jet Pump Weld RS-1C During L2R16; 03/09/2017
- L-004189; LaSalle Unit 2 RPV Vertical Weld Flaw Evaluation; Revision 000
- L1R17-UT-001; Ultrasonic Calibration/Examination Report for Component 1-STUD-01; 02/20/2018
- L1R17-MT-002; Magnetic Particle Examination Report for Component FW02-1004V; 02/26/2018
- L1R17-UT-003; Ultrasonic Calibration/Examination Report for Component IMS-1001-09; 02/22/2018

- L1R17-UT-004; Ultrasonic Calibration/Examination Report for Component IMS-1001-10; 02/22/2018
- L1R17-UT-006; Ultrasonic Calibration/Examination Report for Component IMS-1002-07; 02/22/2018
- L1R17-UT-007; Ultrasonic Calibration/Examination Report for Component IMS-1002-12; 02/22/2018
- L1R17-UT-005; Ultrasonic Calibration/Examination Report for Component IMS-1002-20; 02/22/2018
- 2018-MT-001; Magnetic Particle Examination Report for Component 1DG14A-6” and 2DG14A-6”; 02/23/2018
- L1R17-MT-001; Magnetic Particle Examination Report for Component GEL-1009-AG; 02/23/2018
- R-007; Examination Summary Sheet for Component LCS-1-N3C; 02/25/2018
- R-002; Examination Summary Sheet for Component 1-NIR-3C; 02/25/2018
- GEH-PDI-UT-1; PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds; Revision 12
- GEH-PDI-UT-2; PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds; Revision 12
- GEH-PDI-UT-5; PDI Generic Procedure for Straight Beam Ultrasonic Examination of Bolts and Studs; Revision 11
- GEH-UT-300; Procedure for Manual Examination of Reactor Vessel Assembly Welds in Accordance with PDI; Revision 12
- GEH-UT-311; Procedure for Manual Ultrasonic Examination of Nozzle Inner Radius, Bore and Selected Nozzle to Vessel Regions; Revision 19
- EPRI-DMW-PA-1; Procedure for Manual Phased Array Ultrasonic Examination of Dissimilar Metal Welds; Revision 6

71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

- LGP-1-1; Normal Unit Start-up; Revision 122
- LOP-TG-02; Turbine Generator Start-up; Revision 81
- S-18-1-6, 18-1 TSG; LORT Dynamic Simulator Scenario Guide; Revision 0
- AR 4070501; Active License Proficiency Watches, 11/3/17
- ROI-17-25; Clarification of Complete vs. Truncated Shift for Proficiency Watches, 3/20/18
- OP-LA-101-111-1002; LASALLE OPERATIONS PHILOSOPHY HANDBOOK, Revision 70

71111.12—Maintenance Effectiveness

- AR 1417131; 1PL78J-F1 Fuse Bad on 1PL78J Start-up
- AR 1489107; Need LaSalle Specific Procedure for Fuse Control
- AR 1593516; Installed Fuse Found with Loose End Caps
- AR 2630349; Blown Fuse was Replaced and 1CM025A Found Open
- AR 3885958; Bad Fuse End Caps
- AR 3946455; Replaced Safety Related Fuse in 1PM13J for 1CM030
- AR 3950129; 1CM019B Fuse End Caps Loose
- AR 3986927; Fuse Replaced During Clearance Order
- AR 4100844; 1D RHRSW Pump Auto Tripped on Start
- AR 4101058; Fuse Replacement for D RHR WS Breaker
- CAP Search, “Fuse”; 1/1/2010–2/8/2018
- Cat ID 1428726; Quality Receipt Inspection Package, Fuse, Cartridge; 3/7/2001
- Cat ID 341082; Materials Catalog Search “FUSE”; undated

- Cat ID 452011, Evaluation 92 300; Fuses; Revisions 0–2
- Cat ID Various; Quality Fuse Log; Dates Various, 2015–2018
- FUSE 803F90; Material Identification Tag
- FUSE 803F93; Material Identification Tag
- WO 1692907–01; 1RE024 Indication; 2/5/2014
- WO 1808868–01; 2E12–F090B Lost Position Indication in MCR; 2/22/2015

71111.13—Maintenance Risk Assessments and Emergent Work Control

- CC–AA–201; Plant Barrier Control Program; Revision 11
- ER–AA–600–1042; On-Line Risk Management; Revision 11
- OP–AA–108–117; Protected Equipment Program; Revision 5
- WC–AA–101–1006; On-Line , Risk Management & Assessment; Revision 2
- WC–AA–104; Integrated Risk Management; Revision 25

71111.15—Operability Determinations and Functionality Assessments

- 1E–1–4226AD; Schematic Diagram Reactor Core Isolation Cooling System “RI” (E51) Part 4; Revision AA
- 1E–1–4226AF; Schematic Diagram Reactor Core Isolation Cooling “RI” (E51) Part 6; Revision AK
- 1E–1–4226AJ; Schematic Diagram Reactor Core Isolation Cooling Alarms System RI (E51) Part 9; Revision AF
- 1E–1–4652AA; Internal / External Wiring Diagram Reactor Core Isolation Cooling Panel B 1H22–P029; Revision N
- AR 1324828; Potential Non-Conservatism in TRM 3.7.b Snubbers
- AR 1329795; Spherical Bearing on Snubber EPN 1MS00–1015S Protruding From
- AR 1336369; Technical Requirements Manual Section 3.7.H—Snubbers
- AR 1435575; “Spurious Isolation of RCIC On High Steam Flow”
- AR 1493477; “Crew Clock Reset —Failed to Capture Pressure Input Data”
- AR 1493477; “Crew Clock Reset—Failed to Capture Pressure Input Data”
- AR 1502232; “Replace 1E31–N007BA Switch with New Model”
- AR 4091820; “Non-Tech Spec Flow Switch Broke, Causing RCIC Isolation”
- AR 4093219; “ODG023A Failed PMT After Repairs Under WO 1933262–01”
- AR 4104391; TMP: “A” VC Train—Nonconforming Condition
- AR 4104393; TMP: “A” VE Train—Nonconforming Condition
- AR 4104397; TMP: “B” VE Train—Nonconforming Condition
- AR 4106645; APS: Scope Add to Test Snubber 1M200–1015S
- AR 4108606; Snubber 1M200–1015S Failed Functional Test
- AR 44104401; TMP: 2AP78E: Div II 480V MCC 236X–1—Nonconforming Condition
- ASME OM Code–2004; Code Case OMN–13 Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants; Expiration Date 2/12/2007
- Assignment Report 1435575; “Perform Failure Classification Complete MRFF per ER–AA310–1004”
- Calc L001821; Allowable Leakage for the DG Air Start Subsystems Divisions 1,2,3; Revision 00
- EC 3344538; TRM 3.7.i Study; System Operability When Snubber Removed; undated
- EC 334581; Acceptability of Use of the 72-hour Provision During Removal of Snubber for Surveillance Testing; undated
- EC 623453; Evaluation of Snubber Failure for Snubber 1MS00–1015S; 3/9/2018
- ER–AA–330–010; Snubber Functional Testing; Revision 6

- LOP–RH–17; Alternate Shutdown Cooling; Revision 34
- LOS–DG–Q1; 0 Diesel Generator Auxiliaries Inservice Test; Revision 68
- LS8743R06–07; True North Consulting, LLC, Snubber Program Document, LaSalle County Generating Station, Technical Approach and Position: 14T–01S; Revision 0
- LTS–500–14; Mechanical Snubber Functional Test 1MS00–1015S; 1/12/2002
- M–101; P&ID Reactor Core Isolation Coolant (R.C.I.C.); Revisions BH, AS
- M–83; P& ID Diesel Generator Auxiliary System; Revision AF
- M–844; Reactor Core Isolation Coolant Piping
- MA–AA–733–1001; Guidance for Check Valve General Visual Inspection; Revision 10
- PMRQ 63161–02; Replace SOR D/P Switch; undated
- Training Document; 064 Residual Heat Removal; undated
- WO 1327178–01; Safety Related Snubber Visual Examination—Inaccessible; 3/2/2012
- WO 1516475–01; Spherical Bearing on Snubber EPN 1MS00–1015S Protruding From; 7/12/2012
- WO 1791812; CM Remove / Replace 1B21–F013E SRV Bench Test for IST
- WO 1933262–02; Disassemble, Clean, Inspect Starting Air Check Valve; 1/12/2018
- WO 4733171–02; Unit 1 1E31–N007BA, Inspect Switch Housing Due to Trip; undated
- WO 4733171–2; Inspect Unit 1 RHR / RCIC Steam Supply High Flow Pressure Switch 1E31–N007BA; 1/11/2018
- WO 4735163–02; 0DG023A Failed PMT After Repairs Under WO 1933262–01; 1/17/2018

71111.19—Post Maintenance Testing

- 94–13733; 4”–150 Welding Ends, Carbon Steel, Globe Valve with Handwheel; Revision D
- AR 122389; NRC 2002 SSDI Identified; LOP–DG–02 has Improper Water Flow
- AR 2618561; “Degraded Condition Observed on CSCS Piping Line 2HP55A–4”
- AR 4098426; “Level 3 PCE During System Draining”
- AR 4098430; “NRC Question Regarding Unit 2 Div 3 CSCS Work 01/29/18”
- AR 4098488; “Data Points Do Not Support Welding for 2HP55BB Line”
- AR 4111254; PCRA LOS–DG–SR6, LOS–DG–06M
- AR 4111255; Operations to Update Position of 1DG009 to Throttled
- AR 4112184; 1FI–DG029 Flow Indicating Upscale
- AR 4112499; LPCS Pump Failed to Start During RTT
- AR 4113635; Procedure Change for LOS–DG–Q2 and LOP–DG–04
- AR 4113656; 1C11–R018 Vessel Temperature Point 4 Reading Low
- AR 4113740; RM–U1 Control Rod 22–19 Declared Slow During Scram Timing
- AR 4113825; L1R17 Hydro—Packing Leak on B RR Loop Sampling INB STP VLV
- AR 4115913; PCRA For LOS–DG–Q2 and LOP–DG–04
- AR 4119714; NRC Identified Action not Taken to Revise Procedures
- AR 4120174; NRC Identified. Computational Error for Valve Position
- EC 349192; Design Consideration Summary, CC–AA–102, Revision 10, VY Area Cooler Outlet Throttle Valves Locking Device Equivalent Change; Revision 001
- EC 367163; DG Backwash Strainer MOV Handwheel Conversion; Revision 000
- EC 401705; CSCS Valve 1E12–F336B and 1DG011 Replacement CS to SS; Revision 002
- EC 402303; 1Vy03A Replacement; 3/10/2018
- EC 403264; Minimum Wall Thicknesses for Unit 2 Div 3 VY Cooler Piping for Extent of Condition; Revision 2
- EC 403762; Request that Engineering Evaluate the Pipe Stress for the Removal and Replacement of the Pipe on Line 2HP55A–4” and 2HP54A–4”; Revision 1
- IT–7000–M–PP–14; Generic Locking Device Details for Throttle Valves; Revision L
- IT–7000–M–PP–16; Generic CSCS Valves Replacement Details; Revision AB

- L-002404; CSCS Cooling Water System "Road Map" Calculation; Revision 004A
- LOS-DG-109; Unit 1 Integrated Division I Response Time Surveillance; Revision 24
- LOS-DG-SR7; Division 3 Cooling Water System Test; Revision 17
- LSCS-UFSAR 9.2-1; Water System; Revision 13
- M-134; P&ID CSCS Equipment Cooling Water System; Revisions AZ, S
- OP-AA-108-101; Control of Equipment and System Status; Revision 14
- WO 1714220-01; LOS-RH-R1 1B RHR SDC Return Line Testable Check VLV Att 1E; 2/15/2016
- WO 1715977-01; Integrated Division I ECCS Response Time; 3/10/2018
- WO 1727015-01; LOS-RH-R1 1A LPCI INJ Line Flush Att 1A; 2/15/2016
- WO 1727016-01; LOS-RH-R1 1B LPCI INJ Line Flush Att 1B; 2/15/2016
- WO 1727019-01; LOS-HP-R2 U1 HPCS INJ Line Flush Att 1A; 2/16/2016
- WO 1727028-01; LOS-RH-R1 1A RHR SDC Return Line Testable Check VLV Att 1D; 2/15/2016
- WO 1791813-01; CM Remove / Replace 1B21-F013R SRV Bench Test for IST; 3/5/2018
- WO 1791822-01; CM Remove / Replace 1B21-F013H SRV Bench Test for IST; 3/5/2018
- WO 1853695-02; MM (Contingency) Replace Section of Line 2HP55A-4"; 1/31/2018
- WO 1908307-01; Unit 1 Main Steam Safety Relief Valve Operability; 3/8/2018
- WO 1908508-01; LOS-RI-R3 U1 RCIC Att 1A; 3/14/2018
- WO 1910578-01; Reactor Vessel Leakage Test; 3/12/2018
- WO 1910609-01; SRV's Support MMD as Required on SRV Maintenance; 3/7/2018
- WO 1910609-02; SRV's Support MMD as Required on SRV Maintenance; 3/6/2018
- WO 1910764-01; Scram Time Rods per LOS-RD-SR12 & Flush Rods at 00 or 48; 3/12/2018
- WO 191-597-01; U1 RCIC S/P Check Valve TST LOS-RI-R4, Att 1A/LOS-RI-Q3 Att.; 3/14/2018
- WO 4568757-01; L1R17 Contingency Work Order Needed for SRV 1B21-F013F; 3/7/2018
- WO 4568762-01; L1R17 Contingency Work Order Needed for SRV 1B21-F013S; 3/7/2018
- WO 4633536-23; EC 402303-1VY03A Cooler Replacement; 3/5/2018
- WO 4757136-01; 1A DG Flow Balance Test Per LOS-DG-SR6 Section E.1; 3/17/2018
- WO 838371-10; 1DG011: Inspect/Replace/Refurb Valve; 3/4/2018
- WP 1853995-01; Work Package to Replace Section of Line 2HP55A-4" between the Area Cooler 2VY02A and Isolation Valve 2E22-F315; Doc 1A

71111.20—Refueling and Other Outage Activities

- AR 1235020; "1E31-N013AA DP Switch Failed During LIS-RI-101"
- AR 1377629; "During LIS-RI-201 2E31-N013BA Stop Valve Leaking By"
- AR 1387441; "Scheduled Work Not Completed. (LIS-RI-201)"
- AR 2166163; "Replace 1E31-N010D During Next LIS-RI-102"
- AR 2478480; "Unit 1 'A' Narrow Range Reactor Level Indicator Reading High"
- AR 2641420; "1B RR Pump Tripped During Upshift"
- AR 4030274; "2FC02PB Will Not Spin"
- AR 4030405; "2B FC Filter High D/P Alarm"
- AR 4057111; "1FC057B Does Not Close"
- AR 4092230; "The "A" NR RX Level Indicator Reads High"
- AR 4093000; "Shutdown Safety Plan Independent Review Comments"
- AR 4106893; "1E12-F050A Spur Gear Misaligned"
- AR 4107803; "FME 1B33-F067B As-Found Condition L1R17"
- AR 4109860; "1B RHR HX Partition Plate Needs Repair"
- AR 4109865; "1B RHR HX Sill Plate Needs Repaired"
- AR 4112815; "LOS-MS-R4; SRV Vacuum Breaker Test Results"

- AR 4112840; "VOC Loading Added to U1 & U2 VG Charcoal Filters"
- AR 4113058; "Unit 1 Division I Battery Degraded"
- AR 4113792; "1A CW Pump Trip on Start-up"
- AR 4113809; "1C CW Pump Tripped on Attempts to Start"
- AR 4113840; "L1R17 Hydro Rollup—Packing Leaks Identified and Adjusted"
- AR 4113846; "L1R17 Hydro Rollup. Flange Gasket Leaks—No Action Needed"
- AR 4113873; "1B21—CV4 Fast Acting Solenoid Did Not Function"
- AR 4113925; "In-Service Inspection Program Examination Coverage <=90%"
- AR 4113993; "Scram time Data Missing for U1 CR 30—07"
- AR 4114057; "IEMA Question—1B RR FCV Insulation"
- AR 4114087; "L1R17 NRC Drywell Closeout"
- AR 4114146; "RM PPC Failed to Capture Rod Speed Data"
- AR 4114148; "RM L1R17 LOS—RD—SR5 Timing Results"
- AR 4114318; "RCIC Water Solid Issue During L1R17"
- AR 4114435; "NRC Identified an Unattended Ladder in U1 Div 2 CSCS PMP RM"
- AR 4114436; "NRC Identified Two Step Ladders Stored Behind U1 Div 3 SWGR"
- AR 4114501; "1B TDRFP Did Not Trip from MCR"
- AR 4114601; "Material Left on the Floor of the U—1 Cable Spreading Room"
- AR 4117722; "1A RR PP Failed to Downshift and Tripped to 0 Speed"
- AR 4117757; "1B33—F067B Vent Line Leak"
- AR 4117763; "1C RHRSW Extent of Condition for 1D RHRSW Failure to Start"
- AR 4117765; "2C RHRSW Extent of Condition for 1D RHRSW Failure to Start"
- AR 4117768; "2D RHRSW Extent of Condition for 1D RHRSW Failure to Start"
- AR 4118078; "0VC15YB Post Fire Positioning Mechanism Broken"
- Calc 97—196; Thermal Model of Com Ed/LaSalle Station Spent Fuel Pool Coolers; Revision A05
- Clearance 142065, Checklist 3; Clearance Activities for 142x Bus Drop; 2/2018
- EC 392831; Narrow Range Level Mismatch; 2018
- EC 403209; U1 MSIV Solenoid Status Indication – IRVR; Revision 000
- EC 621875; Alternate Decay Heat Removal (ADHR) System Qual for L1R17 Outage; Revision 000
- EC—354539; Double Block Valve Replacement (1B33—F066B/1B33—F069B) Reactor Recirculation System (B33); Revision 01
- EC—400261; ATWS Event Maintenance of MSIVs; Revision 000
- EC—618544; LaSalle U1 RR Pump Motor Lube Oil Level Instrumentation; Revision 001
- EC—619305; CSCS Valve Addition to Line 1DG14A—6" in the OG Bldg; Revision 000
- EC—620770; Pre-Job Brief; Replace 1B33—F067A/B Bonnets; 9/29/2017
- EC—620814; Installation of Anti Vibration System (AVS) on Unit 1 and Unit 2 Jet Pumps; Revision 000
- EC—622088; Refueling Outage Time to Boil Curves; Revision 0
- FC—1; Fuel Pool Cooling Training Diagram; 4/1/2009
- FC—2; Fuel Pool Cooling Training Diagram; 7/14/2000
- Figure 040—02; Vessel Level Ranges and Interrelationships; 5/1/2009
- Figure 040—06; ECCS Division 1 and RPS B2 Instrumentation; 11/16/2009
- Figure 040—07; ECCS Division 3 and RPS A2 Instrumentation; 11/16/2009
- Figure 040—08; ECCS Division 2 and RPS B1 Instrumentation; 11/16/2009
- Figure 040—09; ECCS Division 3 and RPS A1 Instrumentation; 11/16/2009
- Figure 30—01; Refuel Floor Diagram; 9/2004
- L1C18 Reactor Core, Cycle 18 Final (next cycle); 3/6/2018
- L1F46 Critical Path; 3/22/2018—3/24/2018
- L1R17 Modifications List, (EC Numbers)

- L1R17 Outage Schedule
- L1R17 Outage Summary
- L1R17 Overview; Revision 4
- L1R17 Refuel Outage Plan; February/March 2018
- L1R17 Safety Shutdown Plan; 1/26/2018
- L1R17 Scope Plan (Major Work)
- L1R17; FME Retrieval Tracking; 3/1/2018
- LFP-700-6; Preferred Engineering Jet Pump Plugs Installation and Removal; Revision 1
- LGP-1-1; Normal Unit Start-up; Revision 122
- LGP-2-1; L1F46 Reactor Vessel Temperature Pressure Log; 3/22/2018
- LGP-2-1; Normal Unit Shutdown; Revision 114
- LIS-RI-101; Unit 1 RCIC Steam Line High Flow Isolation Calibration; Revision 30
- LOP-AA-03; Reactor Mode Changes; Revision 37
- LOP-AP-03; Racking in a 6900 Volt or 4160 Volt Manually Operated Air Circuit Breaker to Test or Connected Position; Revision 19
- LOP-AP-142X; Preparation Procedure for De-energizing Unit 1 Bus 142X, Bus 132X, Bus 132Y, and/or Bus 138; Revision 14
- LOP-FC-03; Fuel Pool Cooling System Startup, Operation, Shutdown, Level Changes, and Flushing; Revision 57
- LOP-NB-03; Troubleshooting Drywell Leakage
- LOP-RH-15; RHR Fuel Pool cooling Assist and Alternate Fuel Pool Cooling Modes; Revision 18
- LOP-TG-02; Turbine Generator Start-up; Revision 81
- LOS-AA-S101; Unit 1 Shiftly Surveillance; Revision 102
- M-101; P&ID Reactor Core Isolation Coolant (RCIC); Revision B1
- M-144; P&ID Fuel Pool Cooling Filter & Demineralizing System; Revisions AP and Y
- M-96; P&ID Residual Heat Removal System (RHRS); Revision BB
- M-98; P&ID Fuel Pool Cooling Filter & Demineralizing System; Revisions AR and Z
- M-98; P&ID Fuel Pool Cooling Filter & Demineralizing System; Revision AR
- MA-AA-716-008-1008; Reactor Services, Refuel Floor FME Plan; Revision 13
- Numarc 93-01; NEI Industry Guidance For Monitoring the Effectiveness at NPPs; Revision 4A
- Operator Rounds for Narrow Range Reactor Level Indication; 1/10/2018
- OPS List; Work Orders: Items Required for Mode 2; 3/12/2018
- OU-LA-104; Shutdown Safety Management Program; Revision 21
- PE-D4253D; Jet Pump Plug Assembly Serial Numbers 1-10; Revision 4
- QU-AA-103; Shutdown Safety Management Program; Revision 18
- Reactor Building Ventilation System Training Document; undated
- RP-AA-300-1005; Removing Items From the Spent Fuel Pool, Reactor Cavity, and Equipment Pit; Revision 1
- Set-Pressure Testing of Class 1 Main Steam Safety Relief Valves during L1R17
- T.S. SR 3.4.11.1; L1R17 Reactor Vessel Temperature Pressure Log; 3/13/2018
- VPF3161-001; Setting Plan/Outline Drawing for 52" I.D. Residual Heat Removal Exchange, Revision 11
- VPF3161-002; Channel Details for Residual Heat Removal Heat Exchangers 52" I.D.; Revision B
- WO 1456118-01; Steam line High Flow RCIC Isolation Unit-01 Contingency; 8/5/2011
- WO 1642293; 1E12-F050A, Disassemble and Inspect Check Valve
- WO 1905797-01; LAP-200-3 U1 LV Position Checklist
- WO 4593998; Replace 1A DG CW Pump with Stainless Steel
- WO 463536; EC 402303-1VY03A Cooler Replacement
- WO 4733171; RCIC Isolation Alarm Received; 1/10/2018

- WO 4733171-01; RCIC Isolation Alarm Received; 1/9/2018
- WO 836371; 1DG011: Inspect/Replace/Refurb Valve

71111.22—Surveillance Testing

- AR 4091675; “Procedure Change for LOS-PC-Q1”
- AR 4106989; “PCRA: LTS-100-24”
- AR 4109047; “Mazon Alt Fac Surveillance Inventory Record Not Maintained”
- AR 4111107; “1A DG Flow Indicator Won’t Zero”
- AR 4111191; “1DG01P D/P Found Outside 1st Acceptable Range”
- LTS-900-8; Operation of High/Low Pressure Water Leak Rate Test Rig; Revision 21
- WO 1904232-01; LPCS PIV 1E21-F005 High Pressure Water Leak Test
- WO 459399-8-33; Replace 1A DG CW Pump with Stainless Steel; 3/4/2018

71114.06—Drill Evaluation

- Exelon URI Release Pathway Logic Summary—LaSalle; undated
- NARS Drill, EAL CS6; Utility Message 3; 1/31/2018
- NARS Drill, EAL CA6; Utility Message 2; 1/31/2018
- EN 123456 (DRILL); Event Notification / Alert; 1/31/2018
- EN 123456 (DRILL); Event Notification / Site Area Emergency; 1/31/2018

71124.01—Radiological Hazard Assessment and Exposure Controls

- Radiation Work Permit and Associated ALARA Files; LA-01-18-00622; L1R17: RB Valve Work; Various Dates
- Radiation Work Permit and Associated ALARA Files; LA-01-18-00511; L1R17: Drywell Valve Maintenance Activities; Various Dates
- Radiation Work Permit and Associated ALARA Files; LA-01-18-00623; L1R17: RB FAC and ISI Prep; Various Dates
- RP-AA-800; Attachment 2; Source Leak Test Record; 10/11/2017
- RP-AA-800; Attachment 2; Source Leak Test Record; 09/19/2017
- Byproduct Source Inventory; 06/05/2017
- RP-AA-800; Attachment 2; Source Leak Test Record; 06/05/2017
- RP-AA-800; Attachment 2; Source Leak Test Record; 05/08 /2017
- AR 03971891; Elevated Dose Rates During Rx Head Lift; 02/09/2017
- AR 03997347; U1/U2 Ops Rounds ALARA Walkdown; 04/12/2017
- AR 04002310; L2R16 HE-UFC Source Term Redistribution; 04/25/2017
- AR 04009490; Removing Locked High Rad Area Deviation; 05/11/2017
- Radiological Surveys; U1 2018 Refueling Outage; Various Documents
- RWP LA-01-18-00513 Task 2; Control Rod Drive Exchange; Revision 0

71124.03—In-Plant Airborne Radioactivity Control and Mitigation

- RP-AA-301; Radiological Air Sampling Program; Revision 11
- NISP-RP-003; Radiological Air Sampling; Revision 0
- Issue # 04110479; NRC Questioned the Dew Point Specified for SCBA Compressed Air; 03/02/2018
- RP-AA-440; Respiratory Protection Program; Revision 14

- Results from Quarterly Service Air and Self Contained Breathing Apparatus; Various Dates from 1Q2016 through 1Q2018
- Byproduct Source Inventory; 11/07/2017
- RP-AA-825-1011; Inspection and Use of the Mururoa V4 MTH2 and V4 F1 Air Supplied Suits; Revision 5

71124.04—Occupational Dose Assessment

- Electronic Dosimeter Dose and Dose Rate Alarm Logs; 2017-2018
- Personnel Exposure Investigation; February 15, 2017
- Multiple Dosimetry EDE Evaluation Sheet; Control Rod Drive Exchange; February 22, 2018

71151—Performance Indicator Verification

- AR 3965520; “Unit 2 Manually Scrammed Due to a GC Runback”
- AR 3973724; “Unit 1 Scram from 100% Power”
- AR 3975576; “1FW005 Feed Reg Valve Positioner Arm Broken”
- AR 3981145; “Initiate Root Cause Investigation for GC Event”
- AR 3995406; “NRC Id’d Discrepancy in ROP Initiating Event Perf Indicators”
- AR 4018727; “RM—Received Alarm for 2B RR Upper Reservoir Hi Level”
- AR 4048633; “RM—1C71A—K10C Failed to De-Energize During LOS—RP—Q2”
- U1 Performance Indicator Charts; 2016–2017
- Unit 2 Outages Dates and Reasons Listing; 2017

71152—Problem Identification and Resolution

- AR 2422592; “Work Not Performed: LES—GM—13 112Y CB—12”
- AR 2424612; “PM Deferral Not Technically Justified Need PHC Approval”
- AR 3965520; “Unit 2 Manually Scrammed Due to a GC Runback”
- AR 3995406; “NRC Id’d Discrepancy in ROP Initiating Event Perf Indicators”
- AT 2429133—03; Document Evaluation for Justifying Continued Use of Westinghouse HFB Breakers for Greater than 20—year Service Life; 1/30/2015
- Binder EQ—LS037; System Control 250 VDC Motor Control Center; Revision 8
- Breaker Test Listing by EPN; 2004–2012
- Change Order 100702A, Purchase Order 186455; Additional Panels for Completion of Containment Isolation; 5/2/1980
- ER—AA—200; Preventive Maintenance Program; Revision 1
- LTR—NRC—06—47; Westinghouse Letter, B. F. Maurer: Westinghouse Motor Control Center (MCC) Breakers; 8/8/2006
- PMCR 87613; PMs for Trip Testing of DC Breakers Moved from Online to Outage; 2016–2017
- Request 163—0; CDBI FASA at 1006735—02; 11/5/2010
- Service Request 87513; PD Chg: L1R16 LTE 7/7/2016 DC BRKR Trip TST & Replace Online—Outage
- TB—14—2; Westinghouse Technical Bulletin: Aging Issues and Subsequent Operating Issues for Molded Case Circuit Breakers; 5/13/2014
- WO 1341405—01; Perform LES—GM—130 For 2H13P604 @ 211Y CB—12 (2DC11E); 4/18/2014
- WR 950002946—01; Perform Breaker Inspection per LES—GM—130; 3/15/1995