



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

November 18, 2015

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
LICENSE RENEWAL SCOPING, SCREENING, AND AGING MANAGEMENT
INSPECTION REPORT 05000373/2015008; 05000374/2015008**

Dear Mr. Hanson:

On October 16, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed a License Renewal inspection at your LaSalle County Station, Units 1 and 2. On October 16, 2015, the NRC inspectors discussed the results of this inspection with Mr. Harold Vinyard, and other members of your staff. The results of this inspection are documented in the enclosed report.

The purpose of this inspection was to examine activities that support the license renewal application for LaSalle County Station, Units 1 and 2. The inspection addressed the processes of scoping and screening plant equipment to select equipment subject to an aging management review, and development and implementation of aging management programs to support a period of extended operation. As part of the inspection, the NRC examined procedures and representative records, interviewed personnel, and visually examined accessible portions of various systems, structures, or components, to verify license renewal boundaries, and to observe any equipment aging effects.

The team concluded that the scoping, screening, and existing aging management license renewal activities, were generally conducted as described in LaSalle County Station, Units 1 and 2, License Renewal Application and as supplemented through your responses to requests for additional information from the NRC. The team also concluded that documentation supporting the application was generally in an auditable and retrievable form. In addition, the team concluded the implementation of the proposed aging management programs, as described in the License Renewal Application with the proposed enhancements and, as supplemented through your responses to NRC requests for additional information and inspection observations, should provide reasonable assurance that the intended functions of vital plant systems, structures, and components will be maintained through the period of extended operation.

B. Hanson

-2-

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Christine Lipa, Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure:
Inspection Report 05000373/2015008; 05000374/2015008

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 05000373; 05000374
License Nos: NPF-11; NPF-18

Report No: 05000373/2015008; 05000374/2015008

Licensee: Exelon Generation Company, LLC

Facility: LaSalle County Station, Units 1 and 2

Location: Marseilles, IL

Dates: September 28 - October 16, 2015

Inspectors: Stuart Sheldon, Senior Reactor Engineer (Lead)
Benny Jose, Senior Reactor Engineer
Jennifer Bishop, Reactor Engineer
Michael Jones, Reactor Engineer
Gerard O'Dwyer, Reactor Engineer
Lionel, Rodriguez, Reactor Engineer

Approved by: Christine Lipa, Chief
Engineering Branch 2
Division of Reactor Safety

Enclosure

TABLE OF CONTENTS

SUMMARY	2
REPORT DETAILS	3
1. Inspection Scope	3
2. Visual Observation of Plant Equipment	3
3. Review of Scoping and Screening Methodology	3
4. Review of Aging Management Programs	4
5. Exit Meeting Summary	29
SUPPLEMENTAL INFORMATION.....	1
Key Points of Contact	1
List of Items Opened, Closed and Discussed	1
List of Documents Reviewed	2
List of Acronyms Used	14

SUMMARY

Inspection Report 05000373/2015008; 05000374/2015008; 09/28/2015 – 10/16/2015; LaSalle County Station, Units 1 & 2; License Renewal Inspection.

This inspection of the applicant's license renewal scoping, screening, and aging management processes was performed by five inspectors based in the Region III office. The team applied U.S. Nuclear Regulatory Commission (NRC) Manual Chapter 2516 and NRC Inspection Procedure 71002 as guidance for performing this inspection. No findings as defined in NRC Manual Chapter 0612 were identified.

NRC-Identified and Self-Revealing Findings

No findings of significance were identified

Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

1. INSPECTION SCOPE

This inspection was conducted by U.S. Nuclear Regulatory Commission (NRC) Region III inspectors. The inspection was performed in accordance with NRC Manual Chapter 2516 and NRC Inspection Procedure (IP) 71002, "License Renewal Inspection," dated November 23, 2011.

This inspection looked at both the applicant's scoping and screening methodology and Aging Management Programs (AMPs), as described in the applicant's license renewal application (LRA) titled, "Application for Renewed Operating Licenses," dated December 9, 2014, (ADAMS Accession Nos. ML14343A840, ML14343A841, ML14343A842, ML14343A883, and ML14343A897), and as revised in subsequent correspondence from the applicant to the NRC.

The Attachments to this report list the documents reviewed, and the acronyms used.

2. VISUAL OBSERVATION OF PLANT EQUIPMENT

During this inspection, the team performed walkdowns of portions of plant systems, structures, and components (SSCs). These walkdowns were intended to determine the acceptability of the scope boundaries, to observe the current condition of the SSCs, and to assess the likelihood that a proposed AMP would successfully manage the associated aging effects. Specifically, the team conducted walkdowns of accessible portions of:

- Auxiliary Building;
- Condensate Storage Tanks;
- Containment Tendons;
- Cooling Lake Intake Flume;
- Diesel Fuel Oil Storage Tanks;
- Diesel Generator Buildings;
- Fire Protection and Fire Water System in Turbine Building and Reactor Building;
- Lake Screen House ;
- Masonry Walls in Reactor Building, Auxiliary Building and Turbine Building;
- Turbine Building;
- Unit 2 Core Standby Cooling System- Essential Cooling Water System Divisions 1, 2 and 3 Pump Rooms;
- Unit 2 Service Air System;
- Unit 2 Nonessential Cooling Water System; and
- U1 Standby Liquid Control System.

Any issues identified were entered into the applicant's Corrective Action Program (CAP) and are listed under documents reviewed.

3. REVIEW OF SCOPING AND SCREENING METHODOLOGY

In order to assess the applicant's scoping and screening methodology, the team reviewed a sample of SSCs including nonsafety-related SSCs that the applicant determined were not within the scope of license renewal in accordance with Title 10,

Code of Federal Regulations (CFR), Part 54.4(a)(2). Specifically, the team reviewed applicable documents, interviewed applicant staff, and conducted walkdowns of accessible portions of the following SSCs:

- Cathodic Protection System;
- Diesel Generator Buildings;
- Miscellaneous Instrumentation System

The team also reviewed documentation evaluating the equipment associated with the regulated events listed in 10 CFR 54.4(a)(3).

Based on the portions of systems reviewed, the team concluded the applicant had performed scoping and screening of SSCs in accordance with the methodology described in the LRA and the rule.

4. REVIEW OF AGING MANAGEMENT PROGRAMS

The team assessed the adequacy of current implementation of existing AMPs credited in the applicant's LRA. This included verification the current AMPs would ensure aging effects would be managed so that there was reasonable assurance an SSC's intended function would be maintained throughout the period of extended operation. For those programs indicated by the applicant as being consistent with NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," the team confirmed the applicant's program included the GALL attributes. For those programs which the applicant indicated were new or being enhanced, the team confirmed commitments existed and were sufficient to support future implementation. For those programs where the applicant indicated they intended to take exception to the GALL, the team reviewed the exceptions against the GALL recommendations and evaluated the acceptability of the applicant's proposal.

The team also conducted walkdowns of selected in-scope SSCs to assess how plant equipment was being maintained under the current operating license and to visually observe examples of nonsafety-related equipment determined to be in-scope due to their proximity to safety-related equipment and their potential for failure due to aging effects.

The inspectors reviewed the following AMPs referenced by their section in the applicant's LRA.

- (1) American Society of Mechanical Engineers Section XI Inservice Inspection, Subsections IWB, IWC, and IWD (B.2.1.1)

The Inservice Inspection (ISI) Program is an existing program intended to be consistent with the program described in NUREG-1801, Rev. 2, Section XI.M1, "[American Society of Mechanical Engineers] ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD." The program is intended to manage the aging effects of cracking and reduction in fracture toughness for ASME Class 1, 2, and 3 piping and components exposed to the reactor coolant environment using visual, surface, and/or volumetric and leakage testing as specified in the ASME Code Edition of record, Section XI, for Class 1, 2, and 3 pressure-retaining components and their integral attachments. The examinations, scheduling, acceptance criteria, flaw evaluation, and re-examinations are in accordance with the requirements identified in ASME Section XI with NRC-approved alternatives. Repair and replacement activities for these components are covered in Subsection IWA of the ASME Code Edition of record.

Additional limitations, modifications, and augmentations approved under the provisions of 10 CFR 50.55a with NRC-approved alternatives are included as a part of this program. Every 10 years this program is updated to the latest ASME Section XI Code Edition and addendum approved by the NRC per 10 CFR 50.55a.

The team reviewed the License Renewal Program basis documentation, implementing procedures, ISI Program documents, completed ISI records, corrective action documents, and the LRA. The team also interviewed the responsible applicant staff.

The team concluded the continued implementation of the ISI Program, as described in the LRA, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(2) Water Chemistry (B.2.1.2)

The Water Chemistry aging management program is an existing program that is intended to be consistent with the program described in NUREG-1801, Section XI.M2, "Water Chemistry," with one exception to use more recent guidance. The program manages loss of material, cracking, and fouling in components exposed to a treated water environment through periodic monitoring and control of water chemistry. The Water Chemistry Program monitors and controls water chemistry parameters such as pH, chloride, conductivity, and sulfate. The applicant's program is based on Boiling Water Reactor Vessel and Internals Project (BWRVIP)-190, "[Boiling Water Reactor] BWR Water Chemistry Guidelines – Mandatory, Needed, and Good Practice Guidance," Revision 1 which is a revision to the guidance cited in NUREG-1801.

The team reviewed the LRA, License Renewal Program basis documentation, plant specific operating history documents, recent surveillance results, and corrective action documents. The team compared implementing procedures against industry guidance to verify the applicant's program was consistent with NUREG-1801, Section XI.M2. In addition, the team interviewed the AMP owner, and other applicant staff.

The team concluded continued implementation of the Water Chemistry AMP, as described in the LRA, should provide reasonable assurance the applicable aging effects will be managed for the period of extended operation, consistent with the licensing basis.

(3) Reactor Head Closure Stud Bolting (B.2.1.3)

The Reactor Head Closure Stud Bolting Program is an existing program intended to be consistent with the program described in NUREG-1801, Rev. 2, Section XI.M3, "Reactor Head Closure Stud Bolting," with the following two exceptions.

NUREG-1801 recommends, as a preventive measure, using bolting material that has an actual measured yield strength less than 1,034 megapascals (150 kilo-pounds per square inch) for closure studs to reduce the potential for stress corrosion cracking (SCC) or intergranular stress corrosion cracking (IGSCC). LaSalle is taking an exception to NUREG-1801 because they have test data indicating that all installed bolting components on Unit 1, and 12 of the studs on Unit 2 may have an actual measured yield strength greater than the recommendation. LaSalle is also taking an additional exception to NUREG-1801 because they have test data indicating that uninstalled replacement studs previously purchased for Units 1 and 2 may have an actual measured yield strength greater than the recommendation.

The program intends to manage the aging effects of cracking due to SCC or IGSCC, and loss of material due to wear or corrosion, for reactor vessel closure stud bolting. It intends to do this by the use of ISI examinations required by the ASME Code of record, Section XI, and the use of preventive measures. The program uses ISI visual, surface, and volumetric examination and inspection requirements to detect cracking, loss of material, and leakage. Acceptance criteria and evaluation of indications are in accordance with ASME Section XI. Preventive measures used to address reactor head closure stud degradation, as recommended in NUREG-1339 and NRC Regulatory Guide (RG) 1.65, include avoiding the use of metal-plated stud bolting, use of an acceptable surface treatment, and use of stable lubricants.

The team reviewed the License Renewal Program basis documentation, aging management review documents, implementing procedures, completed ISI records, corrective action documents, and the LRA. The team also interviewed the responsible applicant staff.

The team concluded the continued implementation of the Reactor Head Closure Stud Bolting Program, as described in the LRA with the proposed exceptions, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(4) Boiling Water Reactor Vessel ID Attachment Welds (B.2.1.4)

The BWR Vessel Inside Diameter (ID) Attachment Welds Program is an existing program intended to be consistent with the program described in NUREG-1801, Rev. 2, Section XI.M4, "BWR Vessel ID Attachment Welds." The program is intended to manage the aging effects of cracking of reactor vessel internal attachments in conformance with the guidelines of BWRVIP-48-A. The guidelines of BWRVIP-48-A include inspection recommendations and evaluation methodologies for the attachment welds between the vessel wall, and vessel ID brackets that attach safety-related components to the vessel. The guidelines include: information on the geometry of the vessel ID attachments; evaluate susceptible locations and safety consequences of failure; provide recommendations regarding the method, extent, and frequency of inspection; and discuss acceptable methods of evaluating the structural integrity significance of flaws detected during these examinations.

The program also provides for repair and/or replacement, as needed, to maintain the ability to perform the intended function. The program is applicable to structural welds for BWR reactor vessel internal integral attachments and provides reasonable assurance of the long-term integrity, and safe operation of BWR vessel ID attachment welds.

The team reviewed the License Renewal Program basis documentation, implementing procedures, completed inspection records, corrective action documents, and the LRA. The team also interviewed the responsible applicant staff.

The team concluded the continued implementation of BWR Vessel ID Attachment Welds Program, as described in the LRA, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(5) Boiling Water Reactor Feedwater Nozzle (B.2.1.5)

The BWR Feedwater Nozzle Program is an existing program intended to be consistent with the program described in NUREG-1801, Rev. 2, Section XI.M5, "BWR Feedwater Nozzle." The program is intended to manage the aging effects of cracking due to cyclic loading in the feedwater nozzles. It monitors for cracking through the use of examinations performed in accordance with the recommendations GE-NE-523-A-71-0594, Rev. 1, and the requirements of the ASME Code Edition of record, Section XI. Cracking is evaluated and dispositioned in accordance with the ASME Code. The licensee has also implemented recommendations in NUREG-0619, "BWR Feedwater Nozzle and CRD Return Line Nozzle Cracking," to mitigate or prevent thermally induced fatigue cracking of the feedwater nozzles.

The team reviewed the License Renewal Program basis documentation, existing plant drawings, implementing procedures, program documents, completed inspection records, and the LRA. The team also interviewed the responsible applicant staff.

The team concluded continued implementation of the BWR Feedwater Nozzle Program, as described in the LRA, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(6) Boiling Water Reactor Control Rod Drive Return Line Nozzle (B.2.1.6)

The BWR Control Rod Drive (CRD) Return Line Nozzle Program is an existing program intended to be consistent with the program described in NUREG 1801, Rev. 2, Section XI.M6, "BWR CRD Return Line Nozzle." The program is intended to manage the aging effect of cracking of the CRD return line nozzle through the performance of inspections in accordance with the ASME Code Edition of record. Cracking found during ISIs is evaluated in accordance with ASME Code Section XI requirements. The licensee implemented the recommendations in NUREG-0619 to mitigate cracking due to thermal fatigue. The CRD return line nozzles for Units 1 and 2 were capped and the CRD return lines to the reactor vessels were removed and not rerouted prior to power operations. Therefore, consistent with the recommendations of NUREG-0619, no augmented ISI examinations are required.

The team reviewed the License Renewal Program basis documentation, implementing procedures, design documents, completed inspection records, and the LRA. The team also interviewed the responsible applicant staff.

The team concluded continued implementation of the BWR CRD Return Line Nozzle Program, as described in the LRA, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(7) Boiling Water Reactor Stress Corrosion Cracking (B.2.1.7)

The BWR SCC Program is an existing program intended to be consistent with the program described in NUREG-1801, Rev. 2, Section XI.M7, "BWR SCC." The program is intended to manage SCC and IGSCC in stainless steel and nickel-based alloy piping and piping welds containing reactor coolant. Scheduled volumetric examinations are conducted to detect IGSCC and leakage of coolant in accordance with the methods, inspection guidelines, and flaw evaluation criteria delineated in: (1) the ASME Code

Edition of record; (2) NUREG-0313, Revision 2; (3) NRC Generic Letter (GL) 88-01, including its Supplement 1; and (4) NRC-approved BWRVIP-75-A. The program also includes preventive measures such as induction heating stress improvement and mechanical stress improvement to minimize SCC. Reactor coolant water chemistry is also controlled to reduce susceptibility to SCC or IGSCC.

The team reviewed the License Renewal Program basis documentation, implementing procedures, completed inspection records, corrective action documents, responses to request for additional information (RAIs), and the LRA. The team also interviewed the responsible applicant staff.

The team concluded continued implementation of the BWR SSC Program, as described in the LRA and with acceptable resolution of the associated RAIs, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(8) Boiling Water Reactor Penetrations (B.2.1.8)

The BWR Penetrations Program is an existing program intended to be consistent with the program described in NUREG-1801, Rev. 2, Section XI.M8, "BWR Penetrations." The program is intended to manage the aging effect of cracking of the instrument penetrations, CRD housing and incore-monitoring housing (ICMH) penetrations, and the standby liquid control (SLC)/Core Plate differential pressure (dP) penetrations due to cyclic loading or SCC and IGSCC. The program monitors the penetrations as part of the ISI Program per the ASME Code Edition of record, Section XI, and uses the inspection and flaw evaluation recommendations of NRC-approved BWRVIP-49-A for instrumentation penetrations, BWRVIP-47-A for CRD housing and ICMH penetrations, and BWRVIP-27-A for SLC/Core Plate dP penetrations.

The team reviewed the License Renewal Program basis documentation, implementing procedures, completed inspection records, a program self-assessment, and the LRA. The team also interviewed the responsible applicant staff.

The team concluded continued implementation of the BWR Penetrations Program, as described in the LRA, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(9) Boiling Water Reactor Vessel Internals (B.2.1.9)

The BWR Vessel Internals Program is an existing program that, with the following enhancements, is intended to be consistent with the program described in NUREG-1801, Rev. 2, Section XI.M9, "BWR Vessel Internals." The applicant, under commitment number nine of the LRA, plans to enhance their existing program by performing assessments of reactor vessel internal components fabricated from cast austenitic stainless steels (CASS) to determine their susceptibility to loss of fracture toughness due to thermal aging embrittlement and neutron irradiation embrittlement. The information will then be used to specify required periodic inspections of CASS components determined to be susceptible, with initial inspections to be performed either prior to or within 5 years after entering the period of extended operation.

The program is intended to manage the aging effects of cracking, loss of material, and loss of fracture toughness for BWR vessel internal components due to SCC, IGSCC, or irradiation-assisted stress corrosion cracking using inspection and flaw evaluation in accordance with Section XI of the ASME Code Edition of record, and applicable BWRVIP reports. The BWR vessel internal components included in the program are the core shroud, core plate, core spray, shroud support, jet pump assembly, low-pressure coolant injection (LPCI) coupling, top guide, CRD housings, lower plenum, and steam dryer. The effects of cracking are monitored by the use of in-vessel visual inspection and volumetric examination techniques. The program also includes inspections of components fabricated from X-750 material to identify cracks that may be indicative of degradation due to thermal aging and neutron irradiation embrittlement.

The team reviewed the License Renewal Program basis documentation, corrective action documents, implementing procedures, completed inspection records, responses to RAIs, and the LRA. The team also interviewed the responsible applicant staff.

The team concluded the continued implementation of the BWRVIP with the proposed enhancements, as described in the LRA and with adequate resolution of the associated RAIs, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(10) Flow-Accelerated Corrosion (B.2.1.10)

The Flow Accelerated Corrosion (FAC) AMP is an existing program that is intended to be consistent with the program described in NUREG-1801, Section XI.M17, "Flow Accelerated Corrosion," as modified by License Renewal Interim Staff Guidance (ISG) License Renewal ISG 2012 01, "Wall Thinning Due to Erosion Mechanisms" with one proposed exception. The program manages the loss of material due to wall thinning caused by FAC for carbon steel piping and components through: (a) performing an analysis to determine systems susceptible to FAC; (b) conducting appropriate analysis to predict wall thinning; (c) performing wall thickness measurements based on wall thinning predictions and operating experience; and (d) evaluating measurement results to determine the remaining service life and the need for replacement or repair of components.

The exception identified during NRC audit (ML15196A115) was that LRA Section B.2.1.10 stated the FAC Program is based on NSAC-202L, Revision 3; however the program had been revised to incorporate Revision 4 which had not been approved by the NRC for License Renewal. The Office of Nuclear Reactor Regulation (NRR) issued RAI B.2.1.10, which required justification of the use of Revision 4 vice Revision 3. Applicant responded in letter RS-15-193 (ML15218A421) with justifications for the use of Revision 4 vice Revision 3.

The team reviewed the LRA, License Renewal Program basis documentation, implementing procedures, program documents, and procedures. The team also interviewed the FAC AMP owner, other knowledgeable site personnel, corporate License Renewal personnel, and reviewed the determination of systems susceptible to FAC.

The team concluded that other than the exception, which will be evaluated in the Safety Evaluation Report (SER), the AMP appears to be consistent with the GALL Report and should provide reasonable assurance that the aging effects will be managed. In addition, the final evaluation of the AMP, the response to the RAI and the proposed exception will be documented in the SER.

(11) Bolting Integrity (B.2.1.11)

The Bolting Integrity AMP is an existing program intended to be consistent with the program described in NUREG-1801, Section XI.M18, "Bolting Integrity," with six enhancements as described in the LRA and revised by RAI response letter RS-15-194 dated August 6, 2015. The program manages the aging affects associated with closure bolting on pressure retaining joints within the scope of license renewal for loss of preload, cracking, and loss of material due to corrosion with enhancements to include various non-pressure retaining bolting. This program credits inspection of pressure retaining bolted joints which is performed in accordance with the applicable requirements of ASME Section XI, and plant operating experience and includes consideration of the guidance contained in NUREG-1339, "Resolution of Generic Safety Issue 29: Bolting Degradation or Failure in Nuclear Power Plants," Electric Power Research Institute (EPRI) documents NP 5769, "Degradation and Failure of Bolting in Nuclear Power Plants," and TR 104213, "Bolted Joint Maintenance and Application Guide."

The team reviewed License Renewal Program basis documentation, existing inspection procedures, corrective action documents, and the LRA. The team also interviewed the AMP owner, other responsible site and corporate applicant staff and associated license renewal contractors. The team also walked down a sample of safety-related pressure retaining bolting on the components of the plant open cycle cooling water system (Essential Cooling Water System (ECWS)) located inside the Unit 2 Division 1, 2, and 3 ECWS pump rooms for evidence of visible leakage or other age-related degradation. No significant issues were identified.

A previous NRC Audit (ML15196A115) verified that Enhancements 1 and 5 had been implemented. During this inspection, the team verified that Enhancements 2, 3, 4, and 6 had also been accomplished or would be accomplished before the period of extended operation.

The team concluded continued implementation of the Bolting Integrity AMP, as described in the LRA with the proposed enhancements should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation. The final evaluation of the program with enhancements will be documented in the SER.

(12) Open-Cycle Cooling Water System (B.2.1.12)

The Open-Cycle Cooling Water (OCCW) system AMP is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.M20, "OCCW System." The program manages loss of material and fouling for safety related service water system components and some non-safety-related service water systems (as described in the LRA) fabricated from carbon steel, copper alloys, and stainless steel and exposed to raw water as described in the LaSalle response to NRC GL 89-13, and the LRA.

This existing program will include four enhancements as described in the LRA. These enhancements, as documented in Commitment 12, are to perform a minimum of 10 microbiologically influenced corrosion (MIC) degradation inspections for aboveground piping in the Essential and Non-Essential Cooling Water Systems every 24 months until the rate of MIC occurrences no longer meets the criteria for recurring internal corrosion; select an inspection method that will provide indication of suitable wall thickness to perform inspections on a representative sample of buried piping to supplement the aboveground piping inspection locations; and perform visual inspections of the interior surface of buried portions of the Essential Cooling Water System and Non-Essential Cooling Water System whenever the piping internal surface is made accessible due to maintenance and repair activities.

The team reviewed License Renewal Program basis documentation, existing procedures and surveillance results, corrective action documents, license renewal boundary drawings, and the LRA. The team also interviewed the licensee's designated AMP owner, other responsible applicant staff and associated license renewal contractors and corporate staff. The team walked down portions of the nonsafety-related Unit 2 Non-Essential Service Water System, and did not identify any evidence of visible leakage or other age-related degradation. The team also conducted walkdowns of portions of the safety-related OCCW systems, which include the subsystems of residual heat removal service water, diesel generator cooling water and emergency makeup. No significant issues were identified.

The team concluded the implementation of the OCCW system AMP, as described in the LRA with the proposed enhancements, should provide reasonable assurance that the aging effects will be managed, consistent with the licensing basis, during the period of extended operation. The final evaluation of the program with enhancements will be documented in the SER.

(13) Closed Treated Water Systems (B.2.1.13)

The Closed Treated Water Systems AMP is an existing program that is intended to be consistent with the program described in NUREG-1801, Section XI.M21A, "Closed Treated Water Systems." This is a mitigating and condition monitoring program that includes: (a) nitrite-based water treatment, including pH control and the use of corrosion inhibitors to modify the chemical composition of the water such that the function of the equipment is maintained and such that the effects of corrosion are minimized; (b) chemical testing of the water to ensure that the water treatment program maintains the water chemistry within acceptable guidelines; and (c) inspections to determine the presence or extent of corrosion, stress corrosion cracking, or fouling. The program will be enhanced to inspect a representative sample of piping and components at least once every 10 years during the period of extended operation.

The team reviewed the LRA, License Renewal Program basis documentation, plant specific operating history documents, recent surveillance results, and corrective action documents. The team compared implementing procedures against industry guidance in EPRI TR-1007820, "Closed Cooling Water Chemistry Guideline" Rev.1 to verify the applicant's program was consistent with NUREG-1801, Section XI.M21A. In addition, the team interviewed the AMP owner, and other applicant staff.

The team concluded continued implementation of the Closed Treated Water Systems AMP, as described in the LRA, should provide reasonable assurance the applicable aging effects will be managed for the period of extended operation, consistent with the licensing basis.

(14) Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems (B.2.1.14)

The Inspection of Overhead Heavy-Load and Light-Load (Related to Refueling) Handling Systems AMP is an existing program that, with enhancement, is intended to be consistent with the program described in NUREG 1801, Section XI.M23, "Inspection of Overhead Heavy-Load and Light-Load (Related to Refueling) Handling Systems." This program is intended to manage the effects of loss of material on the bridge rails, bridge, and trolley structural components for those cranes, hoists, rigging beams, and refueling equipment used to handle light-loads that are within the scope of license renewal. The program will also manage loss of preload of associated bolted connections. The components are in an air indoor or treated water environment.

Enhancements include providing additional guidance to consistently include inspection of structural components, rails, and bolting for loss of material due to corrosion; rails for loss of material due to wear; and bolted connections for loss of preload.

The team reviewed License Renewal Program basis documentation, implementing inspection procedures, response to RAIs, Condition Reports, and the LRA. In addition, the team interviewed the responsible applicant staff and performed walkdowns and remote visual inspection of the refueling crane and auxiliary building hoists for visible evidence of structural degradation and cracks. No significant concerns were identified during the walkdown.

The team concluded the implementation of the Overhead Heavy-Load and Light-Load (Related to Refueling) Handling Systems AMP, as described in the LRA with the proposed enhancements, should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(15) Compressed Air Monitoring (B.2.1.15)

The Compressed Air Monitoring AMP is an existing program which, with an enhancement, is intended to be consistent with NUREG-1801, Section XI.M24, "Compressed Air Monitoring," with an exception to monitor dew point quarterly as opposed to recording and trending daily dew point readings. The program manages material loss in compressed air systems by periodically monitoring air samples for moisture and contaminants, and inspecting internal surfaces within compressed air systems. Current program activities include that periodic internal visual inspections of critical components are performed to detect signs of corrosion and air quality is monitored, and trended to determine if alert levels or limits are being approached or exceeded.

The team reviewed the License Renewal Program basis documentation, implementing procedures, CAP documents, procedures, work documents and the LRA. The team walked down portions of the Unit 2 Service Air System and did not identify any issues (e.g., instances of previously unidentified corrosion). The team also interviewed the Compressed Air AMP owner, and other knowledgeable site and corporate license renewal personnel.

The team concluded implementation of the Aboveground Metallic Tanks AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation. The final evaluation of the program with enhancements and proposed exception will be documented in the SER.

(16) Fire Protection (B.2.1.16)

The Fire Protection AMP is an existing Condition Monitoring Program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.M26, "Fire Protection." This program includes fire barrier and low-pressure carbon dioxide system visual inspections and functional tests. The Fire Barrier Inspection Program requires periodic visual inspection of fire barrier penetration seals, fire barrier walls, ceilings, floors, and other materials that perform a fire barrier function. Periodic visual inspection of and functional testing of the fire rated doors and visual inspection of fire rated dampers is performed to ensure their functionality is maintained. The program also includes visual inspections and periodic functional tests of the low-pressure carbon dioxide fire suppression systems using the National Fire Protection Association (NFPA) codes and standards for guidance.

The applicant has proposed the following enhancements to the program in the LRA:

- Perform periodic visual inspection of combustible liquid spill retaining curbs.
- Perform periodic visual inspection for identifying corrosion that may lead to loss of material on the external surfaces of the low-pressure carbon dioxide fire suppression systems.
- Provide additional inspection guidance to identify aging effects as follows:
 - Fire barrier walls, ceilings, and floors degradation such as spalling, cracking, and loss of material for concrete.
 - Elastomeric fire barrier material degradation such as loss of material, shrinkage, separation from walls and components, increased hardness, and loss of strength.
- Provide additional inspection guidance to identify degradation of fire barrier penetration seals for aging effects such as loss of material, cracking, increased hardness, shrinkage, and loss of strength.

The team reviewed License Renewal Program basis documents, program health report, condition reports, aging management review documents, and existing procedures. The team also interviewed the program owner to determine current condition and results of the inspection and surveillance requirements. To evaluate the material condition of components managed by this AMP, the team conducted walkdowns of the carbon dioxide tanks, and the fire protection piping in turbine and reactor buildings.

The team concluded the implementation of the Fire Protection AMP should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(17) Fire Water System (B.2.1.17)

The Fire Water System AMP is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.M27, "Fire Water System." This program manages loss of material and biofouling for components in fire water systems. The program is implemented using inspection and monitoring activities, including flush test and testing or replacing sprinkler heads using the guidance of NFPA Standard 25, 2011 Edition. The applicant has proposed 10 enhancements to the program in the LRA to perform various tests including volumetric, visual and flow in different sections and components of the fire water system.

The team reviewed program basis documentation, AMP documents, existing procedures and surveillance results, condition reports, license renewal boundary drawings, and the application. The team also interviewed responsible applicant staff and conducted walkdowns of accessible portions of the fire water system, including components such as pumps, sprinklers, hose stations, and piping.

The team concluded the implementation of the Fire Water System AMP, as described in the LRA with the proposed enhancements, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(18) Aboveground Metallic Tanks (B.2.1.18)

The Aboveground Metallic Tanks AMP is an existing program intended to be consistent with the program described in NUREG-1801, Section XI.M29, "Aboveground Metallic Tanks," as modified by License Renewal ISG-2012-02 with enhancements. During the audit, the staff identified a difference between the LRA AMP and the GALL Report AMP that should have been identified as an exception. The evaluation of the staff-identified difference will be documented in the SER.

The team reviewed License Renewal Program basis documentation, drawings, tank photos, CAP documents, work order documents and effectiveness data. The team interviewed the AMP owner, other responsible applicant site and corporate staff and associated license renewal contractors. During an NRC audit (ML15196A115) degradation of the caulking at the bottoms of the Unit 1 Condensate Storage Tank (CST) and the Unit 2 CST was identified and entered into the CAP. The team conducted walkdowns of the in-scope Unit 1 CST and Unit 2 CST. During the walkdowns, the inspectors identified that the caulking at the bottom of the tanks had been repaired and was in good condition.

The team concluded implementation of the Aboveground Metallic Tanks AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation. The final evaluation of the program with enhancements and the NRR staff-identified difference will be documented in the SER.

(19) Fuel Oil Chemistry (B.2.1.19)

The Fuel Oil Chemistry AMP is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.M30, "Fuel Oil Chemistry." This program includes surveillance and maintenance activities that monitor fuel oil chemistry to provide assurance that contaminants are maintained at acceptable levels, verify the program's effectiveness through inspections that confirm the insignificance of any aging effects. The program will be enhanced to include additional chemistry sampling and periodic inspections of fuel oil storage equipment.

The team reviewed the LRA, License Renewal Program basis documentation, plant specific operating history documents, surveillance results, work orders, and corrective action documents. In addition, the team interviewed the AMP owner, and other applicant staff.

The team concluded continued implementation of the Fuel Oil Chemistry AMP, as described in the LRA, should provide reasonable assurance the applicable aging effects will be managed for the period of extended operation, consistent with the licensing basis.

(20) Reactor Vessel Surveillance (B.2.1.20)

The Reactor Vessel Surveillance AMP is an existing program that is intended to be consistent with the program described in NUREG 1801, Section XI.M31, "Reactor Vessel Surveillance," with two proposed enhancements and a proposed exception. The multiple aspects of the proposed exception related to neutron fluency levels are specified in the applicant's response to RAI B.2.1.20-2 in docketed letter RS-15-165 (ML15176A348) dated June 25, 2015. The final evaluations of the AMP, enhancements, proposed exception and licensee responses to RAI B.2.1.20-1 through RAI B.2.1.20-4 will be documented in the SER.

The program manages the aging effect of reduction of fracture toughness of reactor vessel materials.

The team reviewed License Renewal Program basis documentation, implementing procedures, the LRA, corrective action documents and plant specific operating history documents. In addition, the team interviewed the AMP owner, other responsible applicant site and corporate staff and associated license renewal contractors.

The team concluded continued implementation of the Reactor Vessel Surveillance AMP, as described in the LRA with enhancements and one potential exception should provide reasonable assurance the aging effects will be managed for the period of extended operation, consistent with the licensing basis. The final evaluation of the AMP, proposed exception, enhancements and RAI responses will be documented in the SER.

(21) One-Time Inspection (B.2.1.21)

The One-Time Inspection Program is a new program intended to be consistent with the program described in NUREG-1801, Section XI.M32, "One-Time Inspection." Inspections that verify unacceptable degradation is not occurring will be performed within the 10 years prior to the period of extended operation. This program will be used to verify the system-wide effectiveness of the Water Chemistry, Fuel Oil Chemistry, and Lubricating Oil Analysis Programs which are designed to prevent or minimize aging to

the extent that it will not cause a loss of intended function during the period of extended operation. Determination of the sample size will be 20 percent of the components in each material-environment-aging effect group up to a maximum of 25 components. Identification of inspection locations will be based on the potential for the aging effect to occur. Examination techniques will use established Non-Destructive Examination methods with a demonstrated history of effectiveness in detecting the aging effect of concern, including visual, ultrasonic, and surface techniques. Acceptance criteria will be based on applicable ASME or other appropriate standards, design basis information, or vendor-specified requirements and recommendations. Any indication or relevant condition of degradation will be evaluated.

The team reviewed License Renewal Program basis documentation and interviewed responsible applicant staff.

The team concluded implementation of the One-Time Inspection Program, as described in the LRA, should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(22) Selective Leaching (B.2.1.22)

The Selective Leaching AMP is a new program intended to be consistent with the program described in NUREG-1801, Section XI.M33, "Selective Leaching" as modified by LR-ISG-2011-03 and LR-ISG-2012-02. The program includes inspections to verify the absence of selective leaching to ensure the integrity of components that may be susceptible to this aging mechanism. These components include those made of gray cast iron and copper alloy (with greater than 15 percent zinc or greater than 8 percent aluminum) exposed to raw water, closed cycle cooling water, treated water, waste water or soil. This AMP will include one-time visual inspection, supplemented by hardness measurements (where feasible, based on form and configuration) or mechanical examination techniques to determine whether loss of materials due to selective leaching is occurring and whether selective leaching will affect the ability of the components to perform their intended function for the period of extended operation.

The team reviewed the associated AMP basis document, plant specific operating history documents including corrective action documents, scoping and screening reports, and the LRA. In addition, the team interviewed responsible applicant and site staff. The team was unable to review the implementing documents associated with this new program because they were being developed at the time of this inspection

The team concluded implementation of the Selective Leaching AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(23) One-time Inspection of ASME Code Class 1 Small-Bore Piping (B.2.1.23)

The Unit 1 One-Time Inspection of ASME Code Class 1 Small-Bore Piping program is a new program intended to be consistent with the program described in NUREG-1801, Rev. 2, Section XI.M35, "One-Time Inspection of ASME Code Class 1 Small-Bore Piping." The program is intended to manage the aging effect of cracking in Unit 1 ASME Code Class 1 small-bore piping with a nominal pipe size less than 4 inches and greater than or equal to 1 inch, by augmenting the requirements of the ASME Code Edition of record, Section XI. The program includes pipes, fittings, branch connections,

and full penetration (butt) and partial penetration (socket) welds. The augmented ASME Code Section XI requirements include a one-time volumetric examination of a sample of small-bore piping butt welds and socket welds. The program also includes controls to implement a plant-specific periodic inspection aging management program if small-bore piping cracking caused by IGSCC or fatigue is identified through the one-time inspections or other Unit 1 operating experience.

The team reviewed License Renewal Program basis documentation, operating experience, corrective action documents, engineering changes, responses to RAIs, and the LRA. The team also interviewed the responsible applicant staff.

The team concluded implementation of the new Unit 1 One-Time Inspection of ASME Code Class 1 Small-Bore Piping Program, as described in the LRA and with adequate resolution of the associated RAIs, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(24) External Surfaces Monitoring of Mechanical Components (B.2.1.24)

The External Surfaces Monitoring Program is a new program that is intended to be consistent with the program described in NUREG 1801, Section XI.M36, "External Surfaces Monitoring of Mechanical Components," as modified by LR ISG 2012 02, "Aging Management of Internal Surfaces, Fire Water Systems, Atmospheric Storage Tanks, and Corrosion Under Insulation," and LR ISG 2013 01, "Aging Management of Loss of Coating or Lining Integrity for Internal Coatings/Linings on In Scope Piping, Piping Components, Heat Exchangers, and Tanks," dated November 14, 2014. The program manages aging effects of components fabricated from metallic and elastomeric components such as piping, piping components, ducting, and other components within the scope of license renewal exposed to air–indoor uncontrolled, air–outdoor, and condensation environments through periodic visual inspection. The program manages the aging effects of cracking, hardening and loss of strength, loss of material, and reduced thermal insulation resistance of metallic and elastomeric materials through visual inspection of external surfaces. Visual inspections will be supplemented by physical manipulation, when appropriate, to detect hardening and loss of strength in elastomers.

The team reviewed License Renewal Program basis documentation, AMP documents, existing procedures, and Action Requests. The team also interviewed responsible applicant staff. The team was unable to review some implementing documents associated with this new program because they were being developed at the time of this inspection

The team concluded implementation of the External Surfaces Monitoring of Mechanical Components AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(25) Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components (B.2.1.25)

The Inspection of Internal Surfaces In Miscellaneous Piping And Ducting Components AMP is a new program intended to be consistent with the program described in NUREG-1801, Section XI.M38, "Internal Surfaces in Miscellaneous Piping and Ducting Components," as modified by LR-ISG-2012-02.

The program will manage internal surfaces of metallic and elastomeric components such as piping, piping components and piping elements, ducting components, tanks, heat exchanger components, elastomers, and other components that are exposed to environments of condensation, diesel exhaust, and waste water environments. The program also consists of visual inspections of the internal surfaces of elastomeric components that are exposed to condensation, augmented by physical manipulation to detect hardening or loss of strength where appropriate. The program will manage the aging effects of loss of material, reduction of heat transfer, flow blockage, and cracking for metallic components. The program will also manage the aging effects of loss of material and hardening and loss of strength for elastomeric components. The program includes provisions for visual inspections of the internal surfaces of components not managed under other AMPs.

The team reviewed the AMP basis document, applicable NRC requests and RAIs, implementing procedures, and Updated Final Safety Analysis Report changes proposed for the AMP. The team also interviewed the AMP owner and other responsible applicant staff.

The team concluded implementation of the Internal Surfaces in Miscellaneous Piping and Ducting Components AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(26) Lubricating Oil Analysis (B.2.1.26)

The Lubricating Oil Analysis AMP is an existing program that is intended to be consistent with the program described in NUREG-1801, Section XI.M39, "Lubricating Oil Analysis." The program includes periodic sampling and analysis, and trending to confirm the oil environment is not conducive to loss of material or reduction of heat transfer.

The team reviewed the LRA, License Renewal Program basis documentation, plant specific operating history documents, oil sample results, and corrective action documents. In addition, the team interviewed the AMP owner, and other applicant staff.

The team concluded continued implementation of the Lubricating Oil Analysis AMP, as described in the LRA, should provide reasonable assurance the applicable aging effects will be managed for the period of extended operation, consistent with the licensing basis.

(27) Monitoring of Neutron-Absorbing Materials Other Than Boraflex (B.2.1.27)

The Monitoring of Neutron-Absorbing Materials Other Than Boraflex AMP is an existing program that is intended to be consistent with the program described in NUREG-1801, Section XI.M40, "Monitoring of Neutron-Absorbing Materials Other than Boraflex." This program includes periodic inspection and analysis of test coupons of the

neutron-absorbing material in the spent fuel storage racks to determine if the neutron absorbing capability of the material has degraded. This program ensures that a 5 percent sub-criticality margin in the spent fuel pool is maintained during the period of extended operation by monitoring for loss of material, changes in dimension, and loss of neutron-absorption capacity of the material.

The team walked reviewed License Renewal Program basis documentation, existing procedures, recent surveillance results, and calculations. In addition, the team interviewed the AMP owner, and other applicant staff.

The team concluded continued implementation of the Neutron-Absorbing Material Monitoring Program, as described in the LRA, should provide reasonable assurance the applicable aging effects will be managed, consistent with the license basis, for the period of extended operation.

(28) Buried and Underground Piping (B.2.1.28)

The Buried and Underground Piping AMP is existing program that will be enhanced to be consistent with the program described in NUREG-1801, Section XI.M41, "Buried and Underground Piping and Tanks," as modified by LR-ISG-2011-03, "Changes to the GALL Report," Revision 2, AMP XI.M41, "Buried and Under Ground Piping and Tanks." The program manages the external surface aging effects of cracking and loss of material for buried and underground piping in soil and air–outdoor environments. The program manages aging through preventive, mitigative (e.g., coatings, backfill quality, and cathodic protection), and inspection activities for piping and components within the scope of license renewal.

The Buried and Underground Piping AMP will be enhanced, prior to the period of extended operation, to:

- Manage cracking for stainless steel piping, utilizing a method that has been demonstrated to be capable of detecting cracking, whenever coatings are removed and expose the base material.
- Ensure all underground carbon steel Essential Cooling Water System and Non-Essential Cooling Water System piping and components within the scope of license renewal are coated in accordance with Table 1 of National Association of Corrosion Engineers (NACE) SP0169-2007.
- Define acceptable coating conditions as coating exhibiting either no evidence of degradation, or, the type and extent of coating damage evaluated as insignificant by an individual possessing a NACE Coating Inspector Program Level 2 or 3 operator qualification, or by an individual who has attended the EPRI Comprehensive Coatings Course and completed the EPRI Buried Pipe Condition Assessment and Repair Training Computer Based Training Course.
- Perform inspection quantities of buried piping within the scope of license renewal in accordance with LR-ISG-2011-03, Element 4.b and Table 4a, during each 10-year period, beginning 10 years prior to the period of extended operation. The number of inspections of buried piping will be based upon the as-found results of cathodic protection system availability and effectiveness.
- Perform direct visual inspections of underground Essential Cooling Water System and Non-Essential Cooling Water System piping within the scope of license renewal during each 10-year period, beginning 10 years prior to the period of extended operation

- Double the inspection sample sizes within the affected piping categories if adverse indications are detected during inspection. If adverse indications are found in the expanded sample, an analysis will be conducted to determine the extent of condition and extent of cause. The size of the follow-up inspections will be determined based on the analysis. Timing of the additional inspections will be based on the severity of the identified degradation and the consequences of leakage. In all cases, the additional inspections will be performed within the same 10-year inspection interval in which the original adverse indication was identified. Expansion of sample size may be limited by the extent of piping subject to the observed degradation mechanism.
- Use only the -850mV polarized potential criterion specified in NACE SP0169-2007 for acceptance criteria for steel piping and determination of cathodic protection system effectiveness in performing cathodic protection surveys. Alternatively, soil corrosion probes may also be used to demonstrate cathodic protection effectiveness during the annual surveys. An upper limit of -1200mV for pipe-to-soil potential measurements of coated pipes will also be established, so as to preclude potential damage to coatings.
- Conduct an extent of condition evaluation if observed coating damage caused by non-conforming backfill has been evaluated as significant. The extent of condition evaluation will be conducted to ensure that the as-left condition of backfill in the vicinity of the observed damage will not lead to further degradation.

The inspectors reviewed the applicable License Renewal Program basis documentation and existing procedures related to the program. The inspectors interviewed the buried and underground piping AMP owner, other relevant plant staff and associated license renewal staff.

The inspectors concluded implementation of the Buried and Underground Piping AMP as described in the LRA, with the proposed enhancements, should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(29) ASME Section XI, Subsection IWE (B.2.1.29)

The ASME Section XI, Subsection IWE Program is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.S1, "ASME Section XI, Subsection IWE." This program provides for periodic visual and volumetric examinations of steel containments and steel liners for concrete containments to determine general mechanical and structural condition or degradation. The program is credited in the LRA to provide for periodic examination of the steel containments and steel liners for concrete containments and also includes the drywell floor, the down comers, and the connecting piping, their supports, containment hatches, airlocks, moisture barriers and pressure retaining bolting. The ASME Section XI, Subsection IWE Program is implemented through plant procedures which provide administrative controls, including corrective actions, for the conduct of activities that are necessary to fulfill the requirements of ASME Section XI, as mandated by 10 CFR 50.55a(b)(2).

The team reviewed the License Renewal Program basis documentation, implementing procedures, condition reports, responses to RAI's and the LRA. The team also interviewed the program owner and the responsible site engineer. LaSalle was

operating during this inspection period which precluded observation of physical condition of containment surfaces and components, however a walkdown was completed during the Unit 2 outage with no concerns identified.

The team concluded continued implementation of the ASME Section XI, Subsection IWE Program, as described in the LRA with the proposed enhancements should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(30) ASME Section XI, Subsection IWL (B.2.1.30)

The ASME Section XI, Subsection IWL Program is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.S2, "ASME Section XI, Subsection IWL." This program includes periodic visual examinations and testing of reinforced and pre-stressed concrete containments, which includes reinforced concrete and unbonded post tensioning systems. The ASME Section XI, Subsection IWL Program is implemented through plant procedures which provide administrative controls, including corrective actions, for the conduct of activities that are necessary to fulfill the requirements of ASME Section XI, as mandated by 10 CFR 50.55a

The team reviewed the License Renewal Program basis documentation, implementing procedures, condition reports, and the LRA. The team also interviewed the program owner and the responsible site engineer and performed walkdowns of the vertical and horizontal tendons. No significant concerns were identified during the walkdowns.

The team concluded continued implementation of the ASME Section XI, Subsection IWL Program, as described in the LRA with the proposed enhancements should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(31) ASME Section XI, Subsection IWF (B.2.1.31)

The ASME Section XI, Subsection IWF Program is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.S3, "ASME Section XI, Subsection IWF." This program includes periodic visual examinations of ASME Class 1, 2, 3, and MC piping and component supports to determine general mechanical and structural condition or degradation of component supports, such as verification of clearances, settings, physical displacements, loose or missing parts, debris, corrosion, wear, erosion, or the loss of integrity at welded or bolted connections. The ASME Section XI, Subsection IWF Program is implemented through plant procedures which provide administrative controls, including corrective actions, for the conduct of activities that are necessary to fulfill the requirements of ASME Section XI, as mandated by 10 CFR 50.55a

The team reviewed the License Renewal Program basis documentation, implementing procedures, responses to RAIs, condition reports, and the LRA. The team also interviewed the program owner and the responsible site engineer.

The team concluded continued implementation of the ASME Section XI, Subsection IWF Program, as described in the LRA with the proposed enhancements should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(32) 10 CFR Part 50, Appendix J (B.2.1.32)

The 10 CFR Part 50, Appendix J Program is an existing program intended to be consistent with the program described in NUREG-1801, Section XI.S4, "Title 10 CFR Part 50, Appendix J." This program consists of tests performed in accordance with the regulations and guidance provided in 10 CFR Part 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," Option B, Regulatory Guide 1.163, "Performance-Based Containment Leak-Testing Program," Nuclear Energy Institute 94-01, "Industry Guideline for Implementing Performance-Based Options of 10 CFR Part 50, Appendix J," and American National Standards Institute/ANS 56.8, "Containment System Leakage Testing Requirements."

The team reviewed the License Renewal Program basis documentation, implementing procedures, condition reports, and the LRA. The team also interviewed the program owner and the responsible site engineer.

The team concluded continued implementation of the 10 CFR Part 50, Appendix J Program, as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(33) Masonry Walls (B.2.1.33)

The Masonry Wall Program is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.S5, "Masonry Walls." This program manages masonry walls for loss of material and cracking and is implemented as part of the structures monitoring AMP (B.2.1.34). This AMP relies on inspection activities and was based on guidance provided in IE Bulletin 80-11, "Masonry Wall Design," and NRC Information Notice 87-67, "Lessons Learned from Regional Inspections of Licensee Actions in Response to IE Bulletin 80-11."

The team reviewed License Renewal Program basis documentation, implementing inspection procedures, responses to RAIs, Condition Reports, and the LRA. The team also interviewed the program owner and the responsible site engineer and performed walkdowns of a sample of masonry walls in the reactor building, auxiliary building and secondary containment for visible evidence of structural degradation and cracks. No significant concerns were identified during the walkdown.

The team concluded continued implementation of the Masonry Wall Program, as described in the LRA with the proposed enhancements, should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(34) Structures Monitoring (B.2.1.34)

The Structures Monitoring AMP is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.S6, "Structures Monitoring." This program is intended to implement the requirements of 10 CFR 50.65.

This program was based on Revision 2 of Nuclear Management and Resources Council 93 01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and Revision 2 of RG 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." This program relies on periodic visual inspections and condition monitoring of concrete structures, steel components, elastomers, and masonry block walls. This program also includes elements of the masonry walls AMP (B.2.1.33) and Water Control Structures AMP (B.2.1.35).

The team reviewed License Renewal Program basis documentation, implementing inspection procedures, responses to RAIs, Condition Reports, scoping and screen reports, aging management review, and the LRA. The team also interviewed the program owner and the responsible site engineer and performed walkdowns of the auxiliary building and the diesel generator building for visible evidence of structural degradation and cracks. No significant concerns were identified during the walkdown.

The team concluded continued implementation of the Structures Monitoring AMP, as described in the LRA with the proposed enhancements, should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(35) Regulatory Guide 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants (B.2.1.35)

The RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants AMP is an existing program that, with enhancements, is intended to be consistent with the program described in NUREG-1801, Section XI.S7, "RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants." This program manages the aging effects of the canals, intake structures, intake flume, and other water controls structures associated with emergency cooling water systems or flood protection. In addition to reinforced concrete, this program includes steel piling, structural steel, bolting, and miscellaneous steel components associated with the water-control structures. This program relies on inspection and surveillances based on Revision 1 of RG 1.127.

The team reviewed License Renewal Program basis documentation, implementing inspection procedures, responses to RAIs, condition reports, and the LRA. The team also interviewed the program owner and the responsible site engineer and performed a walkdown of the Lake Screen House and Cooling Lake Intake Flume. No significant concerns were identified during the walkdown.

The team concluded continued implementation of the RG 1.127, Inspection of Water Control Structures Associated with Nuclear Power Plants AMP, as described in the LRA with the proposed enhancements, should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(36) Protective Coating Monitoring and Maintenance Program (B.2.1.36)

The Protective Coating Monitoring and Maintenance Program is an existing mitigative and condition monitoring program that is intended to be consistent with the program described in NUREG-1801, Section XI.S8, "Protective Coating Monitoring and Maintenance Program."

The program manages the aging of Service Level I coatings applied to carbon steel and concrete surfaces inside containment that are exposed to Air-indoor and treated water environments, for Loss of Coating Integrity/Blistering, Cracking, Flaking, Peeling, and Physical Damage. This program ensures only that the Service Level I coatings maintain adhesion so as to not affect the intended function of the ECCS suction strainers.

The LRA describes this AMP as comparable with Revision 1 or the latest revision of RG 1.54, "Quality Assurance Requirements for Protective Coatings Applied to Water Cooled Nuclear Power Plants," which was identified as an acceptable method for developing this AMP by Section XI.S8, of NUREG-1801.

The team reviewed License Renewal Program basis documentation, existing procedures and inspection results, condition reports, and the LRA. The team also interviewed responsible applicant staff. LaSalle Units 1 and 2 were at full power during this inspection period which precluded observation of physical condition of coatings. Instead, the team reviewed recent outage related inspections and work orders where the condition of Service Level I coatings were assessed.

The team concluded implementation of the Protective Coating Monitoring and Maintenance Program, as described in the LRA, should provide reasonable assurance the aging effects will be managed for the period of extended operation consistent with the licensing basis.

(37) Insulation Material for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements (B.2.1.37)

The Non-Environmental Qualification (EQ) Insulated Cables and Connections AMP is a new program that is intended to be consistent with the program described in NUREG-1801, Section XI.EI., "Insulation Material for Electrical Cables and Connections not Subject to 10 CFR 50.59 EQ Requirements." The program will be a Conditioning Monitoring Program that provides reasonable assurance that intended functions of insulated cables and connections exposed to adverse localized environments (caused by heat, radiation, or moisture) can be maintained consistent with the current licensing basis through the period of extended operation. Accessible insulated cables and connections within scope of license renewal installed in an adverse localized environment will be visually inspected, at least every 10 years, for cable and connection jacket surface anomalies such as embrittlement, discoloration, cracking, swelling, or surface contamination. If unacceptable conditions or situation is identified the applicant will enter it into the CAP.

The team reviewed the License Renewal Program basis documents and confirmed the applicant had a commitment in place to implement the program prior to the period of extended operation. The team also interviewed the Non-EQ Insulated Cables and Connections Program owner to determine how and when the testing and monitoring requirements for this AMP will be developed and implemented.

The team concluded implementation of the Non-EQ Insulated Cables and Connections AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(38) Insulation Material for Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits (B.2.1.38)

The Insulation Material for Non-EQ Electrical Cables and Connections used in Instrumentation Circuits is a new program that is intended to be consistent with the program described in NUREG-1801, Section XI.E2, "Electrical Cables and Connections Not Subject to 10 CFR 50.49 EQ Requirements Used in Instrumentation Circuits." The program will manage the aging effects of applicable cables in the Neutron Monitoring, Process Radiation Monitoring, and area Radiation Monitoring Systems. This AMP will provide reasonable assurance that the intended function of sensitive, high-voltage, low-current cables exposed to adverse localized environments can be maintained consistent with the current licensing basis through the extended period of operation. This will be accomplished by reviewing calibration and surveillance testing results every 10 years with the first review occurring prior to the extended period of operation. Cable tests for the in-scope local power range monitors is every 6 months, and for source range and intermediate range monitors is every 2 years. Neutron Monitoring System cable test results will be periodically monitored via performance monitoring once every 10 years.

The team reviewed the License Renewal Program basis documents and confirmed the applicant had a commitment in place to implement the program prior to the period of extended operation. The team also interviewed the staff responsible for Non-EQ instrumentation circuits subject to sensitive, high-voltage, and low-level signals, to determine current practice and test procedures to be developed under the program.

The team concluded implementation of the Insulation Material for Non-EQ Electrical Cables and Connections used in Instrumentation Circuits as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(39) Inaccessible Power Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements (B.2.1.39)

The Non-EQ Inaccessible Power Cables AMP is a new program that is intended to be consistent with the program described in NUREG-1801, Section XI.E3, "Inaccessible Power Cables Not Subject to 10 CFR 50.49 EQ Requirements." This program will manage the aging effect of reduced insulation resistance on inaccessible power cables that have a license renewal intended function. The cables that are included in this program are routed underground in conduits, duct banks or direct buried. In scope cables exposed to significant moisture will be tested, using a proven commercially available test, at least every 10 years. The program will also include periodic inspections of manholes within scope of this program at least once every year. In addition, inspections of manholes for water after events such as heavy rains or flooding will be performed. Inspection frequency of the manholes will be adjusted as necessary.

The team reviewed the License Renewal Program basis documents, condition reports, and confirmed the applicant had a commitment in place to implement the program prior to the period of extended operation. The team also interviewed the Non-EQ Inaccessible Power Cables Program owner.

The team concluded implementation of the Non-EQ Inaccessible Power Cables AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(40) Metal Enclosed Bus (B.2.1.40)

The Metal Enclosed Bus (MEB) Inspection AMP is an existing program that is consistent with the program described in NUREG-1801, Section XI.E4, "MEB". The program includes inspections of internal and external portions of MEB to identify age related degradation of the bus, bus connections, the bus enclosure, and the bus insulators. This program inspects the internal portions of the MEB for cracks, corrosion, foreign debris, excessive dust buildup, and evidence of water intrusion. The program will be enhanced to provide internal and external inspection of insulating material and metallic and elastomeric components. The program will be enhanced to also inspect 20 percent of the metal enclosed bolted connections on a frequency of every 10 years. The bus insulation will be visually inspected for signs of reduced insulation resistance, such as embrittlement, cracking, chipping, melting, swelling, discoloration, or surface contamination, which may indicate overheating or aging degradation. The internal bus insulating supports will be visually inspected for structural integrity and signs of cracks.

The team reviewed License Renewal Program basis documents and confirmed the applicant had an existing MEB Program. The team also interviewed the program owner to determine how and when the enhancements for this AMP will be developed and implemented.

The team concluded the MEB Inspection AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(41) Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements (B.2.1.41)

The Non-EQ Electrical Cables Connections AMP is a new program that is intended to be consistent with the program described in NUREG-1801, Section XI.E6, "Electrical Cables Connections Not Subject to 10 CFR 50.49 EQ Requirements." Cable connections associated with this program are those connections which are susceptible to age-related degradation that are not subject to the requirements of 10 CFR 50.49. The program is a One-Time Testing Program, on a sampling basis, applicable to low and medium voltage cable connections, to confirm the absence of age-related degradation due to thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion and oxidation. The program consists of a representative sample of electrical connections within the scope of license renewal. Testing may include thermography, contact resistance testing, or other appropriate testing methods. A representative sample of non-EQ electrical cable connections will be selected based on application (medium and low-voltage), circuit loading (high-loading), connection type, and location (high-temperature, high-humidity and vibration). The sample tested will be 20 percent of the population with a maximum sample size of 25 connections. The technical basis for the sample selected will be documented.

The team reviewed License Renewal Program basis documents, condition reports and confirmed the applicant had a commitment in place to implement the program prior to the period of extended operation. The team also interviewed the Non-EQ Electrical cables connections program owner to determine how and when the testing and monitoring requirements for this AMP will be developed and implemented.

The team concluded implementation of the Non-EQ Electrical Cables Connections AMP as described in the LRA should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(42) Service Level III and Service Level III Augmented Coatings Monitoring and Maintenance Program (B.2.2.1)

The Service Level III and Service Level III Augmented Coatings Monitoring and Maintenance Program is a new, plant-specific condition monitoring program that is intended to be consistent with the program described in NUREG-1801, Section XI.M42, "Aging Management of Loss of Coating or Lining Integrity for Internal Coatings/Linings on In-scope Piping, Piping Components, Heat Exchangers, and Tanks," and Draft LR-ISG-2013-01, "Aging Management of Loss of Coating or Lining Integrity for Internal Coatings/Linings on In-scope Piping, Piping Components, Heat Exchangers, and Tanks." This program manages the loss of coating integrity in heat exchangers, piping, piping components, piping elements, strainer bodies, and tanks exposed to raw water, waste water, and lubricating oil environments. This program manages the aging effect loss of coating integrity by visual inspections intended to identify internal coatings that do not meet acceptance criteria. Physical testing is intended to identify potential delamination of the coating. Internal coatings are visually inspected for signs of coating failures and precursors to coating failures including peeling, delamination, blistering, cracking, flaking, chipping, rusting, and mechanical damage.

The team reviewed License Renewal Program basis documentation, existing procedures, RAI Responses, and the LRA. The team also interviewed responsible applicant staff. LaSalle Units 1 and 2 were at full power during this inspection period which precluded observation of physical condition of coatings.

The team concluded implementation of the Service Level III and Service Level III Augmented Coatings Monitoring and Maintenance Program, as described in the LRA, with revisions as identified in Letter RS-15-165, "Response to NRC Requests for Additional Information, Set 2, dated May 29, 2015, related to the LaSalle County Station, Units 1 and 2, License Renewal Application (TAC Nos. MF5347 AND MF5346)," dated June 25, 2015, should provide reasonable assurance the aging effects will be managed for the period of extended operation consistent with the licensing basis.

(43) Unit 2 Inspection of ASME Code Class 1 Small-Bore Piping Program (B.2.2.2)

The Unit 2 Inspection of ASME Code Class 1 Small-Bore Piping program is a new plant-specific program that includes guidance described in NUREG-1801, Rev. 2, Section XI.M35, "One-Time Inspection of ASME Code Class 1 Small-Bore Piping." This new program is intend to manage the aging effect of cracking in Unit 2 ASME Code Class 1 small-bore piping with a nominal pipe size less than 4 inches and greater than or equal to 1 inch, by augmenting the requirements of the ASME Code Edition of record, Section XI. The program includes pipes, fittings, branch connections, and full

penetration (butt) and partial penetration (socket) welds. The augmented ASME Code Section XI requirements include volumetric examinations of a sample of small-bore piping butt welds and socket welds.

NUREG-1801, Rev. 2, Section XI.M35, suggests that a plant-specific AMP be developed to manage periodic inspections for systems that have experienced cracking and where operating experience indicates that design changes have not been implemented to effectively mitigate cracking. Since LaSalle Unit 2 experienced a failure of an ASME Code Class 1 small-bore piping socket weld in 2005 that was not demonstrated to have been effectively mitigated, the licensee developed a plant-specific program. The program includes controls to perform an evaluation of all Unit 2 systems with ASME Code Class 1 small-bore piping to determine whether other welds are susceptible to the cause of the 2005 failure. Welds determined to be susceptible are then included in a population that will be inspected periodically. The rest of the ASME Code Class 1 small-bore piping welds determined not to be susceptible are included in a population that will be inspected via a one-time inspection prior to the period of extended operation. If additional ASME Class 1 small-bore piping welds experience age-related failures, or cracking is identified by the inspections, the program uses the same evaluation process to identify additional susceptible welds to be included in the population to be inspected periodically.

The team reviewed operating experience, corrective action documents, engineering changes, and responses to RAIs. The team also interviewed the responsible applicant staff.

The team concluded implementation of the new plant-specific Unit 2 Inspection of ASME Code Class 1 Small-Bore Piping program, as described in the responses to RAIs and with adequate resolution of the associated RAIs, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(44) Fatigue Monitoring (B.3.1.1)

The Fatigue Monitoring AMP is an existing program that enhancements is intended to be consistent with the program described in NUREG-1801, Section X.M1, "Fatigue Monitoring." The program is intended to ensure that fatigue usage remains within allowable limits for components identified to have a Time Limited Aging Analysis. Program activities include monitoring and tracking the actual number of operational transients to ensure the number of cycles used in the design analysis is not exceeded, and component cumulative usage factors are maintained below the allowable limit.

The team reviewed License Renewal Program basis documentation, existing procedures and surveillance results, corrective action documents, work order documents, license renewal boundary drawings, and the LRA. The team also interviewed the AMP owner, other responsible applicant site and corporate staff and associated license renewal contractors.

The team concluded continued implementation of the Fatigue Monitoring AMP, as described in the LRA with the proposed enhancements, should provide reasonable assurance the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

(45) Concrete Containment Tendon Pre-Stress (B.3.1.2)

The Concrete Containment Tendon Pre-Stress AMP is an existing program with an enhancement that is intended to be consistent with the program described in NUREG-1801, Section X.S1, "Concrete Containment Tendon Pre-Stress."

The team reviewed License Renewal Program basis documentation, existing procedures and surveillance results, corrective action documents, license renewal boundary drawings, and the LRA. The team also interviewed the AMP owner, other responsible site and corporate applicant staff and associated license renewal contractors.

The team concluded continued implementation of the Concrete Containment Tendon Pre-Stress AMP, as described in the LRA with the proposed enhancement as revised in docketed letter RS-15-194 dated August 6, 2015, (ML15218A424) should provide reasonable assurance the aging effects will be managed, consistent with the license basis, for the period of extended operation.

(46) Environmental Qualification of Electric Components (B.3.1.3)

The EQ of Electric Components AMP is an existing program, required by 10 CFR 50.49, which demonstrates that certain electrical components located in harsh environments are qualified to perform their safety function in those harsh environments. In the existing EQ Program components are refurbished, replaced, or their qualification is extended to 60 years by analysis. This program will continue to ensure EQ of the applicable components. This program is consistent with NUREG-1801, Section X.E1, "EQ of Electric Components".

The team reviewed License Renewal Program basis documents, program health report, condition reports, aging management review documents, and existing procedures. The team also interviewed the program owner to determine current practice of extending components EQ life.

The team concluded, continued implementation of the EQ of Electric Components AMP will provide reasonable assurance that the aging effects will be managed, consistent with the licensing basis, for the period of extended operation.

5. EXIT MEETING SUMMARY

On October 16, 2015, the team presented the inspection results to Mr. Harold Vinyard and other members of the applicant's staff. The applicant acknowledged the issues presented. The inspectors confirmed none of the potential report input discussed was considered proprietary.

The team noted that proprietary documents were reviewed during the course of the inspection. The applicant confirmed all such proprietary documents were returned and the likely content of the report would not involve proprietary material.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Applicant

H. Vinyard, LaSalle Station Plant Manager
M. Gallagher, Vice President, License Renewal
D. Warfel, License Renewal Manager
J. Hilditch, License Renewal Project Manager
J. Hufnagel, License Renewal Licensing Lead
P. Weyhmuller, License Renewal Technical Lead
C. Scheidt, LaSalle Station Licensing Lead
G. Becknell, License Renewal
D. Clohecy, License Renewal
M. Guthrie, License Renewal
J. Jordan, License Renewal
M. Kowalski, License Renewal
M. Miller, License Renewal
D. Spammer, License Renewal
P. Tamburro, License Renewal

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened, Closed, and Discussed

None

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC team reviewed the documents in their entirety, but rather, that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

LICENSE RENEWAL DOCUMENTS

Corrective Action Documents (Written as a Result of the Inspection)

- 02536823; Floor Drain System Degraded; dated 08/03/15
- 02563865; NRC Identified Corrosion on Leaking Valve 2DG011; dated 09/30/15
- 02563882; NRC Identified Corrosion on Baseplate, 2E12-C300D; dated 09/30/15
- 02563894; NRC Identified Dirt and Corrosion Inside Air Intakes on 2DG01P; dated 09/30/15
- 02563899; NRC Identified Corrosion on Casing of 2E12-C300D; dated 09/30/15
- 02563905; NRC Identified Corrosion on Leaking Valve, 2E12-F336A; dated 09/30/15
- 02563912; NRC Identified Oil Dripping from Valve Operator, 2E12-F336A; dated 09/30/15
- 02563914; NRC Identified Possible Corrosion on Sump Discharge Piping 2DT16B-3; dated 09/30/15
- 02563964; Typo on Event Log Titles Discovered During LR Audit Process; dated 10/1/15
- 02563987; NRC Identified Crushed Insulation on 0WS009A Check Valve; dated 10/1/15
- 02564001; NRC Identified Lake Screen House Exposed FDN. Wall Dowels; dated 10/1/15
- 02564441; NRC Identified LSH Fire Header Test Line Surface Corrosion; dated 10/1/15
- 02564544; NRC Identified LSH Groundwater Seepage; dated 10/1/15
- 02564548; NRC Identified General Corrosion of 0FP26P FP Jockey Pump; dated 10/1/15
- 02570776; Identified 2 Broken Cable ties During NRC Walkdown of SBLC; dated 10/14/15
- 02570824; Discrepancy Between Vendor Manual J-0183 and LMS-HC-01A; dated 10/1/15
- 02571185; Post Outage Report Discrepancies; dated 10/15/15
- 02571210; Update to LTS-600-8 Required; dated 10/15/15
- 02571451; NRC Identified Debris Present in Floor Drains; dated 10/15/15

License Renewal Application

- Letter from Michael P. Gallagher, Exelon Generation Company, LLC to NRC Document Control Desk; Application for Renewed Operating Licenses(ML14343A840); dated 12/9/14

License Renewal Basis Documents

- LA-PBD-AMP-X.E1; LSCS Units 1 and 2 LR Project EQ of Electrical Components; Rev. 0
- LA-PBD-AMP-X.M1; Fatigue Monitoring; Rev. 0
- LA-PBD-AMP-X.S1; Concrete Containment Tendon Pre-Stress; Rev. 1
- LA-PBD-AMP-XI.E1; Insulation Material for Electrical Cables and Connections not Subject to 10 CFR 50.49 EQ Requirements; Rev. 1
- LA-PBD-AMP-XI.E2; Insulation Material for Electrical Cables and Connections not Subject to 10 CFR 50.49 EQ Requirements Used in Instrumentation Circuits; Rev. 0
- LA-PBD-AMP-XI.E3; Inaccessible Power Cables not Subject to 10 CFR 50.49 EQ Requirements; Rev 1
- LA-PBD-AMP-XI.E4; Metal Enclosed Bus; Rev. 1
- LA-PBD-AMP-XI.E6; Electrical Cable Connections not Subject to 10 CFR 50.49 EQ Requirements; Rev. 1

- LA-PBD-AMP-XI.M1; ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD; Rev. 2
- LA-PBD-AMP-XI.M2; Water Chemistry; Rev. 1
- LA-PBD-AMP-XI.M3; Reactor Head Closure Stud Bolting; Rev. 2
- LA-PBD-AMP-XI.M4; BWR Vessel ID Attachment Welds; Rev. 0
- LA-PBD-AMP-XI.M5; BWR Feedwater Nozzle; Rev. 0
- LA-PBD-AMP-XI.M6; BWR Control Rod Drive Return Line Nozzle; Rev. 0
- LA-PBD-AMP-XI.M7; BWR Stress Corrosion Cracking; Rev. 0
- LA-PBD-AMP-XI.M8; BWR Penetrations; Rev. 0
- LA-PBD-AMP-XI.M9; BWR Vessel Internals; Rev. 1
- LA-PBD-AMP-XI.M17; Flow-Accelerated Corrosion; Rev. 0
- LA-PBD-AMP-XI.M18; Document Bolting Integrity; Rev. 2
- LA-PBD-AMP-XI.M20; Open Cycle Cooling Water; Rev. 2
- LA-PBD-AMP-XI.M21A; Closed Treated Water Systems; Rev. 1
- LA-PBD-AMP-XI.M24; Compressed Air Monitoring; Rev. 1
- LA-PBD-AMP-XI.M26; Fire Protection; Rev. 1
- LA-PBD-AMP-XI.M27; Fire Water Program; Rev. 3
- LA-PBD-AMP-XI.M29; Aboveground Metallic Tanks; Rev. 1
- LA-PBD-AMP-XI.M30; Fuel Oil Chemistry; Rev. 2
- LA-PBD-AMP-XI.M31; Reactor Vessel Surveillance; Rev. 0
- LA-PBD-AMP-XI.M32; One-Time Inspections; Rev. 1
- LA-PBD-AMP-XI.M35; One-Time Inspection of ASME Code Class 1 Small-Bore Piping; Rev. 0
- LA-PBD-AMP-XI.M36; External Surfaces Monitoring of Mechanical Components; Rev. 2
- LA-PBD-AMP-XI.M39; Lubricating Oil Analysis; Rev. 1
- LA-PBD-AMP-XI.M40; Monitoring of Neutron-Absorbing Materials Other Than Boraflex; Rev. 0
- LR-PBD-AMP XI.M41; Buried and Underground Piping and Tanks; Rev. 2
- LA-PBD-AMP-XI.S1; ASME Section XI, Subsection IWE, Rev. 1
- LA-PBD-AMP-XI.S2; ASME Section XI, Subsection IWL, Rev. 1
- LA-PBD-AMP-XI.S3; ASME Section XI, Subsection IWF; Rev. 4
- LA-PBD-AMP-XI.S4; 10 CFR Part 50, Appendix J; Rev. 0
- LA-PBD-AMP-XI.S5; Masonry Walls Program; Rev. 1
- LA-PBD-AMP-XI.S6; Structures Monitoring Program; Rev. 3
- LA-PBD-AMP-XI.S7; RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants, Rev. 3
- LA-PBD-AMP-XI.S8; Protective Coating Monitoring and Maintenance Program; Rev. 0
- LA-SSBD-ATES; ATWS Systems Scoping and Screening Basis Document; Rev. 1

License Renewal Drawings

- LR-LAS M-82, Sheet 3; Unit1 License Renewal Boundary Drawing P&ID Service Air System Model; Rev. Q
- LR-LAS-M-66, Sheet 11; License Renewal Boundary Drawing P&ID Drywell Unit 2 Pneumatic System Critical Control Room Drawing Model; Rev. A
- LR-LAS-M-66; License Renewal Boundary Drawing P&ID Drywell Pneumatic System Unit 1 Sheet 1; Rev. 0
- LR-LAS-M-68; License Renewal Boundary Drawing P&ID Service Water System Unit 1 Sheets 1, 2 and 3; Rev. 0
- LR-LAS-M-71; License Renewal Boundary Drawing P&ID Fire Protection Units 1 & 2; Rev. 0
- LR-LAS-M-71; P&ID Fire Protection; Rev. 0
- LR-LAS-M-82, Sheet 5; License Renewal Boundary Drawing P&ID Unit 2 Service Air System Critical Control Room Drawing Model; Rev. T

- LR-LAS-M-87, Sheet 3, License Renewal Boundary Drawing P&ID CSCS Equipment Cooling Water System Unit 1 Sheet 2; Rev. 0
- LR-LAS-M-87; License Renewal Boundary Drawing P&ID CSCS Equipment Cooling Water System Unit 1 Sheet 1; Rev. 1
- LR-LAS-M-87; License Renewal Boundary Drawing P&ID CSCS Equipment Cooling Water System Unit 1 Sheet 2; Rev. 0
- LR-LAS-M-99; License Renewal Boundary Drawing P&ID Standby Liquid Control System Unit 1; Rev. 0
- LR-LAS-M-125, Sheet 1; License Renewal Boundary Drawing Unit 2 Service Water Critical Control Room Drawing Model (1); Rev. AH
- LR-LAS-M-127; License Renewal Boundary Drawing P&ID Cycled Condensate Storage System Unit 2; Rev. AL
- LR-LAS-M-134; License Renewal Boundary Drawing P&ID CSCS Equipment Cooling Water System Unit 2 Sheets 1, 2 and 3; Rev. 0
- LR-LAS-M-145; License Renewal Boundary Drawing P&ID Standby Liquid Control System Unit 2; Rev. 0
- LR-LAS-M-1464, License Renewal Boundary Drawing P&ID CSCS Unit 1 Equipment Cooling Water System Critical Control Room Drawing Model; Rev D
- LR-LAS-M-1465, sheet 1; License Renewal Boundary Drawing P&ID CSCS Unit 2 Equipment Cooling Water System Critical Control Room Drawing Model; Rev. 0
- LR-LAS-M-EDGE CW; Diesel Generator Cooling Water System; Rev. 0
- LR-M-3; License Renewal Boundary Drawing Composite Site Plan U1&2; dated 10/17/14
- LR-M-3; License Renewal Boundary Drawing Composite Site Plan Units 1 & 2; Rev. 0

License Renewal Miscellaneous Documents

- Cooling Lake Aging Management Review Report; Rev 0
- Cooling Lake System and Structure Scoping Report; Rev. 0
- Cooling Lake System and Structure Screening Report; Rev. 0
- Diesel Generator Building Aging Management Review Report; Rev. 0
- Diesel Generator Building System and Structure Screening Report; Rev. 0
- ER-AA-300-110; LR Insulation Material for Electrical Cables and Connections not Subject to 10 CFR 50.49 EQ Requirements Used in Instrumentation Circuits Program
- ER-AA-300-120; Electrical Cable Connections not Subject to 10 CFR 50.49 EQ Requirements Program; Rev. 2
- ER-AA-300-140; LR Metal Enclosed Bus Program; Rev. 1
- ER-AA-300-150; Cable Condition Monitoring Program; Rev. 1
- ER-AA-700-301; LR One-Time Inspection Program; Rev. 0
- LA-700-402-10041; External Surfaces Monitoring of Mechanical Components Aging Management Program, Implementing Procedure; Rev. 0
- LRCR-REGION-2; Revise LA-PBD-AMP-XI.M7 for BWR SSC, Element 5; dated 09/29/15
- LRCR-REGION-3; Revise LA-PBD-AMP-XI.M4 for BWR ID Attach Welds, Element 4; dated 09/29/15
- LRCR-REGION-4; Revise LA-PBD-AMP-XI.M8 for BWR Penetrations, Element 6; dated 09/30/15
- LRCR-REGION-5; Revise LA-PBD-AMP-XI.S8 for Protective Coatings, Element 4; dated 10/2/15
- LRCR-REGION-10; Revise LRA, and LA-PBD-AMP-XI.M5 for BWR Feedwater Nozzles, Operating Experience; dated 10/2/15
- MA-AA-723-500; Inspection of Non-EQ Cables and Connections for Managing Adverse Localized Environments; Rev. 6

- RS-15-165; Response to NRC Requests for Additional Information, Set 2; dated 06/25/15
- RS-15-165; Response to NRC Requests for Additional Information, Set 2, dated 05/29/15 related to the LaSalle County Station, Units 1 and 2, License Renewal Application (TAC Nos. MF5347 AND MF5346); dated 06/25/15
- RS-15-171; Response to NRC Requests for Additional Information, Set 3; dated 07/1/15
- RS-15-180; Response to NRC Requests for Additional Information, Set 4; dated 06/08/15
- RS-15-193; Response to NRC Requests for Additional Information, Set 5; dated 08/6/15
- RS-15-232; Response to NRC Requests for Additional Information, Set 9; dated 09/15/15
- Standby Liquid Control System – System and Structure Scoping Report; Rev. 1

CURRENT PLANT DOCUMENTS

Calculations

- GE Hitachi Nuclear Energy Report 0000-0113-8720-R1, Reactor Pressure Vessel Washer Indications, LaSalle I; dated 02/10
- L-002051; ECCS Strainer Head Loss Performance Analysis; Rev. 2A

Corrective Action Documents

- ACE 311917-03; Pressure Boundary Leakage At Weld Joint Between 2B21-F028D and Line 2MS20AD-2"; dated 4/14/05
- 00195988; UT Indications in LP and HP Piping Inside the Reactor; dated 01/17/04
- 00300094; L2R10 – NDE of ISI Component Exhibits Surface Indications; dated 02/10/05
- 00311917; Pressure Boundary Leakage Noted During VT-2; dated 03/12/05
- 00314183; NDE Not Performed After Removing Thermocouple Attachments; dated 03/17/05
- 00465798; Flaws Observed in Core Shroud Examination; dated 03/13/06
- 00734740; Wear of Steam Dryer Support Lut at 185 Deg; INR 08-31; dated 02/11/08
- 00735547; Minor Wear on Feedwater Sparger End Brackets; INR 08-34; dated 02/13/08
- 00735887; LP Core Spray Piping Bracket Indication; INR08-35; dated 02/13/08
- 00747893; Results of UT of Core Spray Piping Inside U1 Reactor; dated 03/11/08
- 01033619; INR L1R13 IVVI-10-59; Dryer Upper Support Ring 180-270; dated 02/21/10
- 01358865; LPCS Flaw Inside RPV Re-Sized in L1R14; OK Until L1R16; dated 04/26/12
- 01358938; Results from L1R14 Exam of Core Shroud Horizontal Welds; dated 04/26/12
- 01464425; Category D IGSCC Weld Status; dated 01/18/13
- 01477597; Additional Minor Wear on FW Sparger End Bracket Pins; dated 02/20/13
- 01682506; IGSCC Generic Letter 88-01 Limited Examinations; dated 07/16/14
- 02539023; 2B33-F067B Leakage, Cracked Weld on Inspection Port; dated 08/07/15
- 00092281; Damaged Cables in Unit 1 Heater Bay; dated 01/25/02
- 00157920; Degraded Tendon; dated 05/08/03
- 00168513; 1PCCW Shows Signs of Microbiological Growth; dated 07/22/03
- 00234403; Evaluation of LaSalle 06/28/04 Seismic Event; dated 07/07/04
- 00253085; Upper Block of Removable Wall Loose, dated 09/15/04
- 00464187; Pits Observed in Drywell Containment Liner; dated 03/08/06
- 00477112; Borescope Inspection Found Accumulation of Macrofoulants; dated 04/10/06
- 00530632; Lake Level at 700.2' Due to High Amount of Overnight Rainfall; dated 09/13/06
- 00591281; Response to NRC GL 2007-01; dated 04/05/07
- 00602337; Supp. Pool Underwater IWE Exam Observations; dated 02/11/08
- 00602378; Water Dripping from Top 3 Tendons on East Side of RB Cont.; dated 03/12/07
- 00688945; Clean and Recoat CSCS Line in LSH; dated 10/24/07
- 00734244; 1E MPT Isophase Bus B Phase Duct Insulator Brocken; dated 02/11/08

- 00760587; SEN 272 Follow-up; dated 08/18/08
- 00809660; NSRB ID: CSCS(FC EMU) Hanger Baseplate Corrosion; dated 08/21/08
- 00895068; Lake Condition Require Starting CO2 Injections into Cooling Water; dated 02/04/09
- 00915308; Pinhole Leak on Flange Weld in Cable Spreading Room Deluge System; dated 05/04/09
- 00958737; Corrosion on Piping Supports; dated 08/28/09
- 00989226; SER 5-09, Non-Segregated Bus Failure and Complicated Scram; dated 11/05/09
- 01023419; High Shield to Ground Resistance; dated 01/29/10
- 01029119; High Resistance at UAT to Non-Seg Bus Duct Bolted Connection; dated 02/11/10
- 01033311; SRM-A Insulation Shield to Ground is Degraded; dated 02/20/10
- 01056715; Compile List of Cables Routed Underground; dated 05/31/10
- 01086083; Defective Weld Allows Water Leakage into Surrounding Contain.; dated 05/12/10
- 01118465; Annual Cooling Lake Dike Inspection 2010; dated 09/27/10
- 01132103; 0WW076A Leak in Check Valve Casing; dated 10/28/10
- 01139043; Steam Leak Identified on 1HD026C; dated 11/11/10
- 01140699; Turbine Lube Oil Differences Between Units; dated 11/15/10
- 01160199; Safety – 2B DG Cooling Water Leak Getting Worse; dated 01/8/11
- 01160838; Install Oil Filter System Similar to Those on Unit 2; dated 01/10/11
- 01161936; 0DO03T Security/TSC Diesel Fuel Oil Storage Tank Analysis Failed; dated 01/12/11
- 01162432; Loss of FME – 2C CW pump bay; dated 01/11/11
- 01162505; 2CW01DB Ball Collector has Pin Hole Leak; dated 01/14/11
- 01185030; U2 Rx Conductivity and Sulfates Exceeded Action Level 1; dated 03/08/11
- 01190932; Particulate Increasing in Oil Samples from CW Pumps; dated 03/23/11
- 01191254; B.5.B PDDP Fuel Oil Analysis Results Were Not Within Spec; dated 03/23/11
- 01192063; Particulate Increasing in Oil Samples from WL Pumps; dated 03/25/11
- 01194867; Found Leak in Heater Bay from 2CB023; dated 03/30/11
- 01196152; EHC Oil Sample Results were Out of Spec for Particulate; dated 04/01/11
- 01208422; U2 FW Dissolved Oxygen Enters Action Level 1; dated 04/27/11
- 01209127; Perform Oil Quality Test on 0CB1-13; dated 04/28/11
- 01211901; 2B DG Oil Tank Critique Item; dated 05/04/11
- 01215327; 2B DG Fuel Oil Tank Cleaning Initial Critique; dated 05/12/11
- 01233351; Reactor Building Crane 90 Day (Annual) Inspection Results; dated 07/27/11
- 01244519; Leak in One One Inch CW Line for CO2 Injection; dated 07/27/11
- 01251077; Leak from Wrapped Elbow Seems to be Getting Worse; dated 08/13/11
- 01274095; Unit 1 Control Room CAM Panel Trouble Alarm; dated 10/08/11
- 01301908; No Single Point of Reference Exists for HVAC Comp Oil Type; dated 12/13/11
- 01324814; Insufficient Change Management for Diesel Fuel Oil Standard; dated 02/09/12
- 01328655; LLRT on 1VQ034/35 Exceeds Admin Limit L1R14; dated 02/18/12
- 01333083; Leak at Pipe Reducer on 1FP024 in LP Heater Bay; dated 02/28/12
- 01333652; Unit 2 Turbine Building Crane Structural Bolting Issues; dated 02/28/12
- 01334674 One Bolt Head Sheared Off, Several Bolts Loose; dated 02/28/12
- 01335674; Loose Bolts Identified on Unit 2 Turbine Building Crane; dated 03/03/12
- 01343440; 1A FC Emergency Makeup Piping is Degraded; dated 03/20/12
- 01358830; Lessons Learned from 1R14; dated 04/26/12
- 01362726; We Need a Proceduralized Way to Add Fuel; dated 05/04/12
- 01365191; 2B D/G Cooler Hx has Approx. 2 GPM Leak; dated 05/11/12
- 01381927; 2B IN Compressor Oil is a Dark Charcoal Color; dated 06/26/12
- 01382012; 1B IN Compressor Oil is a Dark Charcoal Color; dated 06/26/12
- 01387625; Oil Sample PMs Not Useful; dated 07/11/12
- 01418722; Annual Cooling Lake Dike Inspection 2012; dated 08/14/12

- 01423888; Service Water Piping Found in Degraded Condition; dated 10/08/12
- 01438576; Oil in Instrument Nitrogen Compressor is Discolored; dated 11/11/12
- 01447063; Oil Removed from Pump 1GC03P Very Dark; dated 12/03/12
- 01466168; IEMA Questions on 1VQ034 LLRT; dated 01/23/13
- 01473793; Unit 2 Inboard MSIV Limit Switch EQ Service Life; dated 02/11/13
- 01473941; Pin Hole Leak in Weld – 2CD Pump; dated 02/11/13
- 01475099; Loose Pipe Clamp Bolting on 2RI24-2813X; dated 02/19/13
- 01475099; Loose Pipe Clamp Bolting on 2RI24-2854X; dated 02/14/13
- 01490778; FASA EQ Binder; dated 03/21/13
- 01492238; Cannot inspect 0E12-F300 in open position for safety reasons; dated 03/25/13
- 01504542; Thru Wall Leak on 1G33-F042 Valve Body; dated 04/20/13
- 01533778; Failed Sample Results on 0DO03T TSC DO Tank; dated 07/9/13
- 01544267; Thermal Anomaly Identified on 1VP01PB Contactor; dated 06/13/13
- 01570789; Metal clip found during inspection of 2A Inlet CW Bay; dated 10/11/13
- 01570884; Traveling Screen chain rollers have indications of wear; dated 10/11/13
- 01570931; Lessons learned to be incorporated on future dives; dated 10/11/13
- 01576795; Coolant Leak on South Service Building EDG; dated 10/25/13
- 01598754; Oil Analysis Indicates Continues Wear; dated 12/18/13
- 01617426; EHC Oil Sample Had High Particulate; dated 02/05/14
- 01618284; Unit 1 Safety Relief Valve Tailpipe Corrosion; dated 02/07/14
- 01620948; Bad Grease Sample on 1GSESFV2; dated 02/13/14
- 01624568; Procedural Enhancement Needed for LMS-HC-01
- 01652917; Grease Sample Results; dated 04/29/14
- 01655406; Flex pump #2 Fuel Sample Results; dated 05/03/14
- 01658189; Upper B Tendon Inspection Needed; dated 04/23/14
- 01661595; 2A RR HPU Increase in Oil Sample Particulate Level; dated 05/19/14
- 01671875; NOS ID'd Many Instances of Concrete Cracking and Spalling; dated 06/16/14
- 02420888; Unit 2 Reactor Cavity Skirt Plate to Drain Line Leakage; dated 12/04/14
- 02436667; Fire Protection Header Debris; dated 01/13/15
- 02441942; 1DT93A Through Wall Pipe Leak; dated 01/24/15
- 02447966; Leak Identified on Reactor Cavity Wall; dated 02/05/15
- 02449566; L2R15 – UT found line 2DB05A in degraded condition; dated 02/09/15
- 02451812; 2DG05A pipe leak in “B” RHR corner room; dated 02/12/15
- 02452035; Through wall seepage on 2DG05A in Raceway; dated 02/13/15
- 02459417; ERVR – WR Flex Hose Vulnerability; dated 02/26/15
- 02465764; Monthly Oil Analysis Identifies Increase in Silver on 1DG01K; dated 03/09/15
- 02465764; Monthly Oil Analysis Identifies Increase in Silver on 1DG01K; dated 03/09/15
- 02468055; Lake Screen House Masonry Wall Condition; dated 03/13/15
- 02468056; Power Block Exterior Concrete Wall Cracks; dated 03/13/15
- 02468704; Seal Cooling Flex Hose to U2 MDRFP Has A 100dpm Leak; dated 03/14/15
- 02477424; Repairs needed for caulking around base of Unit 1 CY Tank; dated 03/31/15
- 02477426; Repairs needed for caulking around base of Unit 2 CY Tank; dated 03/31/15
- 02479439; Water and Particulate in TSC/IS Diesel Storage Tank; dated 04/03/15
- 02482022; TSC DG Fuel Oil Sample Failure; dated 04/08/15
- 02486437; LaSalle Structural Monitoring Issue; dated 04/16/15
- 02489831; Oil Analysis IDS Increased Particulate in Unit 2 EHC Fluid; dated 04/23/15
- 02489831; Oil Analysis IDs Particulate in Unit 2 EHC Fluid; dated 04/23/15
- 02496318; Outage Lessons Learned- LLRT/IST; dated 05/06/15
- 02501253; Unit 2 Quarterly Trending in Action Level II Due to CO-60; dated 05/14/15
- 02519555; Check-In Deficiency for MIC/Under Deposit Analysis; dated 06/25/15
- 02536629; Primary Containment Tendons Leaking Oil; dated 08/03/15

- 02538562; TSC DG Fuel Oil Sample Failure; dated 08/06/15
- 02560371; Diesel Generator Building Structures Monitoring Walkdown OBS; dated 09/25/15
- 02573898; Structure Monitoring Incomplete for 20009-2014; dated 03/25/15

Drawings

- 2RR-131; 2" and Under As Built; Rev. C
- A-280; Diesel Generator Room Ground Floor Plan Elevation 710'-6"; Rev. AD
- A-65; Typical Masonry Wall Detail Sheet-2; Rev. W
- LR-LAS-M-66 Sh. 5; Drywell Pneumatic System Unit 1; Rev. O
- M-57 Sheet 1; LaSalle Unit 1, P&ID Feedwater and Zinc; Rev. S
- M-102; P&ID Station Heat Recovery; Rev. C
- M-118 Sheet 1; LaSalle Unit 2, P&ID Feedwater and Zinc; Rev. O
- M-766; Outdoor Piping Rev. AC
- M-776; Fire Protection, Equipment Location Outdoor; Rev. D
- M-829; Residual Heat Removal Piping; Rev. AW
- N04-4048; Valve Assy, Motor Opr (Less Motor); Rev. D
- S-16B; Composite Lake Drawing Sheet 2; Rev. B
- S-30; Site Plan Area S-30; Rev. W
- S-926; Diesel Generator Room Basement Foundation Plan Elevation 674'-0"; Rev. U
- VPF 3073-405; Bushing for Stud; Rev. 2

Miscellaneous

- 2014 Cathodic Protection System Survey Report; dated 10/21/14
- 90-Day Post Outage ISI Letter; dated 07/09/99
- AT 01471626; LaSalle Reactor Vessel and Internals Program Pre-BWRVIP/INPO FASA
- BWRVIP-190; BWR Water Chemistry Guidelines – Mandatory, Needed, and Good Practice Guidance; Rev. 1
- CB&I Unit 2 NCRS for the Reactor Vessel (Stud 35 Bushing); dated 01/09/74
- Containment Coatings Program UDC/UQF Log, Rev. 11-001
- EC 402390; Number of Class 1 Small Bore Welds for LaSalle License Renewal; dated 07/21/15
- EC 402621; EOC Eval. Small Bore Piping Weld Failure; dated 07/20/15
- EPRI TR-1007820; Closed Cooling Water Chemistry Guideline; Rev. 1
- Evaluation Report, Safety Related Coatings Service Level 1; dated 02/23/15
- FAC Report 2015-UT-014; Component 2HP09C-EXP-01 examination completed 02/05/15
- FAC Report 2015-UT-042; Component 2RH12BC-EL-01 examination completed 02/07/15
- FAC Report 2015-UT-099; Component 2RH12AA-FE-01 examination completed 02/14/15
- LAS-07661; Evaluation of Bearings from the 'A' Diesel Fire Pump, 0FP01KA; dated 07/09/12
- LaSalle (Unit 1, L1R15) Post Outage 90-Day ISI Summary Report; dated 05/29/14
- LaSalle (Unit 2, L2R09) Post Outage 90-Day ISI Summary Report; dated 06/10/05
- LaSalle (Unit 2, L2R14) Post Outage 90-Day ISI Summary Report; dated 05/31/13
- LaSalle (Unit 2, L2R15) Post Outage 90-Day ISI Summary Report; dated 06/26/15
- LaSalle Station Aux Chemistry Report; dated 01/15/15
- LaSalle Unit 1 N10 Cap and Nozzle Modification Report, Project 391N0136, dated 01/24/98
- LaSalle Unit 2 N10 Cap and Nozzle Modification Report, Project 391N0136, dated 02/01/98
- LER 05-002-00; Pressure Boundary Leakage Discovered in 2D MSIV Drain Line Weld During Refueling Outage VT-2 Inspection; dated 05/04/05
- LER 13-005-00; Technical Specification Required Shutdown Due to Pressure Boundary Leakage; dated 06/26/13

- LER 86-019-00; Reactor Coolant Pressure Boundary Pipe Leaks on LPCI Lines; dated 06/16/86
- Letter; Dresden Station Units 2 and 3, Quad Cities Units 1 and 2, LaSalle County Station Units 1 and 2, Response to Generic Letter 88-01; dated 07/29/88
- Letter; Request for Enforcement Discretion Concerning Performance of an Augmented Examination of Weld RH-2005-29; dated 02/18/00
- PMID 092384-01; Perform Boral Coupon Removal and Shipment
- PMID 092385-01; Perform General Long Term Surveillance Coupon Removal and Shipment
- Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 02/26/1990
- Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 05/06/02
- Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 05/21/03
- Primary Containment Coating Inspections; dated 02/11/13
- RA05-048; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 06/10/05
- RA07-045; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 06/1/07
- RA08-035; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 05/28/08
- RA09-041; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 05/8/09
- RA10-023; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 06/4/10
- RA11-024; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 06/3/11
- RA12-018; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 06/5/12
- RA13-023; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 05/31/13
- RA14-018; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 05/29/14
- RA15-028; Post-Outage 90-Day Inservice Inspection (ISI) Summary Report; dated 06/26/15
- Refueling Outage L1R14 Primary Containment Coatings Inspections; dated 02/13/12
- SEAG Letter 13-000053; Outage Summary Report for LaSalle Unit 2; dated 06/21/13
- SEAG Letter 14-000058; Outage Summary Report for LaSalle Unit 1; dated 05/19/14
- TMPE-08-0005; Results of Maintenance Rule Periodic Inspection of Existing Structures in Accordance with MMR14; dated 01/09/08
- TMPE-08-0005; Results of Maintenance Rule Periodic Inspection of Existing Structures in Accordance with MMR14; dated 01/09/08
- Unit 1 Integrated Leakage Rate Test Final Report; dated 04/12/08
- Unit 2 Integrated Leakage Rate Test Final Report; dated 03/13/09
- Units 1 & 2 Chemistry Report; dated 09/28/15
- Updated Final Safety Analysis Report; Rev. 20

Procedures

- CC-AA-203; Environmental Qualification Program; Rev. 1
- CC-AA-205; Control of Undocumented/Unqualified Coatings Inside the Containment; Rev. 7
- CC-AA-406; Maintenance Specification: General Structural Installations Into Concrete Walls; Rev. 4
- CC-AA-501-1017; Welding Filler Material Procurement Requirements; Rev. 5
- CY-AA-120-400; Closed Cooling Water Chemistry; Rev. 15
- CY-AA-120-4000; Closed Cooling Water Chemistry Strategic Plan; Rev. 5
- CY-AA-120-500; Fuel Oil Chemistry Aging Management Program; Rev. 2
- CY-AB-120-100; Reactor Water Chemistry; Rev. 16
- CY-AB-120-110; Condensate and Feedwater Chemistry; Rev. 19
- CY-AB-120-120; BWR Startup Chemistry; Rev. 9
- CY-AB-120-130; BWR Shutdown Chemistry; Rev. 11
- CY-AB-120-200; Storage Tanks Chemistry; Rev. 10
- CY-AB-120-300; Spent Fuel Pool; Rev. 14
- CY-AB-120-310; Suppression Pool/Torus Chemistry; Rev. 9

- CY-AB-120-320; Control Rod Drive Water Chemistry; Rev. 7
- CY-AB-120-1100; Reactor Water Hydrogen Water Chemistry, Noble Chem and Zinc Injection; Rev. 11
- ER-AA-310-1004; Maintenance Rule – Performance Monitoring; Rev. 13
- ER-AA-330; Conduct of Inservice Inspection Activities; Rev. 10
- ER-AA-330; Conduct of Inservice Inspection Activities; Rev. 11
- ER-AA-330-001; Section XI Pressure Testing; Rev. 12
- ER-AA-330-002; Inservice Inspection of Section XI Welds and Components; Rev. 11
- ER-AA-330-003; Inservice Inspection of Section XI Component Supports; Rev. 10
- ER-AA-330-004; Visual Examination of Snubbers; Rev. 09
- ER-AA-330-006; Inservice Inspection and Testing of the Pre-Stressed Concrete Containment Post Tensioning Systems, Rev. 7
- ER-AA-330-008; Exelon Service Level 1, and Safety-Related (Service Level III) Protective Coatings, Rev. 9
- ER-AA-330-009; ASME Section XI Repair/Replacement Program; Rev. 10
- ER-AA-330-009; ASME Section XI Repair/Replacement Program; Rev. 7
- ER-AA-330-012; ASME Code Class 1 Small-Bore Piping Aging Management Program; Rev. 1
- ER-AA-335-001; Qualification and Certification of Nondestructive Examination(NDE) Personnel; Rev. 07
- ER-AA-335-014-2003; VT-1 Visual Examination in Accordance with ASME 2001 Edition, 2003 Addenda; Rev. 0
- ER-AA-335-016; VT-3 Visual Examination of Component Supports, Attachments and Interiors of Reactor Vessels; Rev. 9
- ER-AA-335-018; Visual Examination of ASME IWE Class MC and Visual Metallic Liners of IWL Class CC Components; Rev. 11
- ER-AA-335-019; Visual Examination of ASME IWL Class CC Containment Components, Rev. 0
- ER-AA-380; Primary Containment Leakrate Testing Program; Rev. 10
- ER-AA-450; Structures Monitoring; Rev. 4
- ER-AA-450-1006; LaSalle Structures Monitoring Instructions; Rev. 0
- ER-AA-700-401; Selective Leaching Aging Management Program; Rev. 0
- ER-AA-700-403; Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components AMP; Rev. 0
- ER-AA-5400; Buried Piping and Raw Water Corrosion Program (BPRWCP) Guide; Rev. 5
- ER-AA-5400-1002; Underground Piping and Tank Examination Guide; Rev. 6
- ER-AA-5400-1002; Underground Piping and Tank Examination Guide; Rev. 6
- ER-AB-331; Reactor Internals Program Management; Rev. 14
- ER-AB-331-1001; Boiling Water Reactor (BWR) Internals Program; Rev. 8
- ER-AB-331-101; Evaluation for Thermal Aging/Neutron Embrittlement of BWR Reactor Internal Components; Rev. 3
- ER-LA-700-403-1003; Planner's Guide to Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components AMP; Rev. 0
- LA-AMPBD-CUI; Inspection for Corrosion Under Insulation, Sample Basis Document; Rev. 0
- LA-AMPBD-SLI; Selective Leaching Inspection Basis Document; Rev. 0
- LAS03.G03; ISI Program Plan – Third Ten-Year Inspection Interval; Rev. 2
- LAS03.G05; ISI Selection Document – Third Ten-Year Inspection Interval; Rev. 1
- LEP-AP-101; Unit 1 Non-Segregated Bus Duct Preventive Maintenance Inspection; Rev. 6
- LEP-AP-201; Unit 2 Non-Segregated Bus Duct Preventive Maintenance Inspection; Rev. 6
- LEP-GM-113; Cable Terminations; Rev. 16
- LEP-GM-120; Minimum Insulation Resistance Megger Test; Rev. 16
- LES-CO-03; CO2 Fire Protection System Functional and Flow Test; Rev. 20

- LMS-DG-01; Main Emergency Diesel Unit Surveillances; Rev. 53
- LMS-DO-01; Diesel Fuel Oil Storage Tank Cleaning; Rev. 9
- LMS-FP-22; Fire Damper Visual Inspection; Rev. 12
- LMS-HC-01; Stations Cranes and Hoists Preventive Maintenance and Examination; Rev. 43
- LMS-HC-01A; Reactor Building and Turbine Building Crane Monthly and Annual Preventive Maintenance and Examination; Rev. 12
- LMS-HC-01H, Electric Hoist Monthly and Annual Preventive Maintenance and Examination; Rev. 17
- LOP-DO-01; Receiving And Sampling New Diesel Fuel Oil; Rev. 38
- LOS-DG-Q3; 1B(2B) Diesel Generator Auxiliaries Inservice Test; Rev. 70
- LOS-DO-M1; Diesel Fuel Oil Monthly Analysis Verification (Stored Fuel Oil); Rev 10
- LOS-FP-M6; Diesel Fire Pump Operational Check; Rev. 14
- LOS-RH-Q4; Cycling CSCS Bypass Line Isolation Valve; Rev 4
- LTS-1000-4; CSCS Pond Surveillance; Rev. 14 (dated 11/16/10)
- LTS-1000-32; LaSalle Cooling Pond Major Dike Inspection; Rev. 9 (dated 11/08/13)
- LTS-1000-40; Mechanical Fire Penetration Inspections; Rev. 9
- LTS-100-15; Type "B" Local Leak Rate Test; Rev. 31 (dated 01/30/14)
- LTS-1200-8; Inservice Surveillance Program for Boral Neutron Absorbing Material; Rev. 4
- LTS-1200-10; LaSalle Unit 2 Long Term Surveillance Program for NETCO Snap-In Inserts; Rev. 0
- LTS-300-5; Primary Containment Leak Rate Testing Program; dated 05/18/15
- LTS-300-10; Drywell Floor Bypass Leakage Test; Rev. 21 (dated 02/07/09)
- LTS-600-3; Primary Containment Inspection; Rev. 12 (dated 11/24/10)
- LTS-600-3; Primary Containment Inspections; Rev. 12
- LTS-600-23; CSCS Cooling Water Screen Bypass Supply Line and CW Pump Inlet Bays Inspection; Rev. 11 (dated 12/12/13)
- LTS-600-41; Primary Containment Inspections for ECCS Suction Strainer Debris Sources; Rev. 9
- LTS-600-8; LaSalle Station Unit 1 and 2 Technical Surveillance, Reactor Vessel Internals Inservice Inspection During Reactor Refueling; Rev. 25
- MA-AA-716-006; Control of Lubricants Program; Rev. 2
- MA-AA-716-021; Rigging and Lifting Program; Rev. 22
- MA-AA-716-026; Station Housekeeping/Material Condition Program; Rev. 13
- MA-AA-716-230; Predictive Maintenance Program; Rev. 8
- MA-AA-716-230; Predictive Maintenance Program; Rev. 9
- MA-AA-716-230-1001; Oil Analysis Interpretation Guideline; Rev. 18
- MA-AA-716-230-1003; Thermography Program Guide; Rev. 4
- NES-EIC-30; Environmental Qualification Engineering; Rev. 1
- SA-AA-117; Excavation, trenching and Shoring; Rev. 16

Surveillances

- 2015-LAS-285; LaSalle Lake Monitoring Program Annual Field Surveillance Report; dated 09/15
- Contoured Depths Ultimate Heat Sink – Project #14ES031 – Drawing 1; dated 09/02/14
- L1R14-003; Nozzle Inside Radius Section Examination; dated 02/29/12
- L1R14-009; Nozzle to Shell Examination; dated 03/01/12
- LaSalle County Station – 3rd Interval 2nd Period – Outage L1R14 – Final Report; dated 02/12
- LTS-600-3; Primary Containment Inspection; dated 01/07/04
- LTS-600-19; Corbicula and Zebra Mussel Inspections; dated 11/07/13

- LTS-600-23; CSCS Cooling Water Screen Bypass Supply Line and CW Pump Inlet Bays Inspection; dated 11/15/12
- NET-235-01; Inspection and Testing of BORAL Surveillance Coupon from the LaSalle County Unit 1 Station; Rev. 0
- NET-332-01; Inspection and Testing of BORAL and Fast Start Surveillance Coupons from the LaSalle County Units 1 and 2 Stations; Rev. 0
- NET-300054-01; Inspection and Testing of Fast Start Surveillance Coupons F22-F11 from the LaSalle County Unit 2 Station; Rev. 0

Work Orders and Work Requests

- 1470953-23-01; Add a Clause to the CAT IDs for RPV Studs, Nuts and Washers; dated 08/11/14
- Job 02-07-205; 1CW01PA Bay Inspection Report; dated 03/27/13
- Job 02-07-205.815D; 2CW01PA Bay Inspection Report; dated 10/10/13
- PMID/RQ 95655-01; Unit 1 Thermal Cycle Monitoring Program Record Completed 12/18/14
- PMID/RQ 95655-01; Unit 1 Thermal Cycle Monitoring Program Record Completed 08/25/15
- PMID/RQ 95655-01; Unit 1 Thermal Cycle Monitoring Program Record Completed 02/16/15
- PMID/RQ 95656-01; Unit 2 Thermal Cycle Monitoring Program Record Completed 10/23/14
- PMID/RQ 95656-01; Unit 2 Thermal Cycle Monitoring Program Record Completed 02/17/15
- PMID/RQ 95656-01; Unit 2 Thermal Cycle Monitoring Program Record Completed 08/26/15
- WO 00465694; Primary Containment Inspection with ECCS suction strainers; dated 01/7/04
- WO 00574240; Replace Damaged Tendons at Locations (3), (13), and (29); dated 05/09/03
- WO 00708679; Confirmed Seismic Event; dated 06/25/04
- WO 00726374; Unit 1 ILRT, February 2008; dated 02/29/08
- WO 00763925; Unit 2 ILRT, February 2009; dated 12/23/08
- WO 00789955 01; MM Pressure Boundary Leakage Noted During VT-2 on 2MS20AD-2"; dated 03/13/05
- WO 00997728; Exterior U1Containment Concrete Surface Inspection VT-3; dated 04/27/09
- WO 01057484; 2B D/G Fuel Oil Storage Tank Cleaning; dated 05/12/11
- WO 01110178; Exterior Containment Concrete Surface Inspection (Unit 2); dated 05/03/10
- WO 01171535; 1A DG Fuel Oil Storage Tank Cleaning; dated 8/14/12
- WO 01318369; Deluge Test Auxiliary Transformer 142; dated 02/19/14
- WO 01346864; 2A DG Fuel Oil Storage Tank Cleaning; dated 03/25/15
- WO 01352886; Inspection of Various Fire Dampers; dated 07/08/12
- WO 01353194; Station Air Receiver 0SA01D pressure vessel internal and external inspection; dated 12/17/13
- WO 01385938; Station Air Dryer 2SA02D-A pressure vessel external and UT inspection; dated 08/6/13
- WO 01403956; Inspect/Clean Unit 2 C CW Inlet Bay; dated 11/15/12
- WO 01408084; Online Inspection of Aux Building Strainers and Screens for Cleanliness; dated 11/14/14
- WO 01414715; Repair the 2HG006A in L2R13 Due to LLRT Failure; dated 03/03/11
- WO 01415316; Inspection of Various Fire Seals; dated 02/18/13
- WO 01426286; Inspect/Clean Unit 1 A CW Inlet Bay and Bypass Line; dated 03/28/13
- WO 01427974; Inspect Unit 2 Primary Containment Drywell Coatings; dated 02/14/13
- WO 01431214; Inspect/Clean Unit 2 A CW Inlet Bay; dated 10/11/13
- WO 01445074; Station Air Dryer 2SA02D-B pressure vessel external and UT inspection; dated 08/06/13
- WO 01467091; Valve Operability and Flow Verification; dated 07/17/14
- WO 01519995; WO to Repair Snubbers Bearings/Clamp Issues; dated 02/17/13

- WO 01530389; Cracks Found in End Ties on Crane
- WO 01558669; 1A D/G Room CO2 Test; dated 04/11/14
- WO 01650399; Fire Hydrant Flush; dated 06/24/14
- WO 01658655; CO2 Hose Reel Test; dated 01/14/15
- WO 01677403; OHC02G, Annual Reactor Building Crane Inspection; dated 10/02/2014
- WO 01677403; 90 Day Inspection Per LMS-HC-01; dated 08/13/14
- WO 01692338; Manhole Inspection and Pumping if Required; dated 02/11/14
- WO 01732687; Inspection of Various Fire Doors; dated 10/31/14
- WO 01769374; LOS-FP-M6 B DFP Monthly Run; dated 10/11/14
- WO 01821597; Caulking around Unit 1 Cycled Condensate Storage Tank base was repaired; dated 08/14/15
- WO 01821598; Caulking around Unit 2 Cycled Condensate Storage Tank base was repaired; dated 08/14/15

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AMP	Aging Management Program
ASME	American Society of Mechanical Engineers
BWR	Boiling Water Reactor
BWRVIP	Boiling Water Reactor Vessel and Internals Project
CAP	Corrective Action Program
CASS	Cast Austenitic Stainless Steels
CFR	<i>Code of Federal Regulations</i>
CRD	Control Rod Drive
CST	Condensate Storage Tank
dP	Differential Pressure
ECWS	Essential Cooling Water System
EPRI	Electric Power Research Institute
EQ	Environmental Qualification
FAC	Flow Accelerated Corrosion
GALL	Generic Aging Lessons Learned
GL	Generic Letter
ICMH	Incore-Monitoring Housing
ID	Inside Diameter
IGSCC	Intergranular Stress Corrosion Cracking
IP	Inspection Procedure
ISG	Interim Staff Guidance
ISI	Inservice Inspection
LPCI	Low-Pressure Coolant Injection
LRA	License Renewal Application
MEB	Metal Enclosed Bus
MIC	Microbiologically Influenced Corrosion
NACE	National Association of Corrosion Engineers
NFPA	National Fire Protection Association
NRC	U.S. Nuclear Regulatory Commission
OCCW	Open-Cycle Cooling Water
PARS	Publicly Available Records
RAI	Request for Additional Information
RG	Regulatory Guide
SCC	Stress Corrosion Cracking
SER	Safety Evaluation Report
SLC	Standby Liquid Control
SSC	System, Structure, and Component

B. Hanson

-2-

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Sincerely,

/RA/

Christine Lipa, Chief
Engineering Branch 2
Division of Reactor Safety

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