

UNITED STATES NUCLEAR REGULATORY COMMISSION REGION III 2443 WARRENVILLE RD. SUITE 210 LISLE, IL 60532-4352

May 1, 2015

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

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 NRC INTEGRATED INSPECTION REPORT 05000373/2015001; 05000374/2015001

Dear Mr. Hanson:

On March 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your LaSalle County Station, Units 1 and 2. On April 9, 2015, the NRC inspectors discussed the results of this inspection with the Site Vice-President, Mr. P. Karaba, and other members of your staff. The inspectors documented the results of this inspection in the enclosed inspection report.

Two NRC-identified findings of very low safety significance (Green) were identified during this inspection. These findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the NRC Enforcement Policy. Additionally, a licensee-identified violation is listed in Section 4OA7 of this report.

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

If you disagree with the cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the LaSalle County Station.

B. Hanson

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 System (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <u>http://www.nrc.gov/reading</u>rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael Kunowski, Chief Branch 5 Division of Reactor Projects

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

Enclosure:

IR 05000373/2015001; 05000374/202015001 w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	05000373; 05000374
License Nos:	NPF–11; NPF–18
Report No:	050003732015001; 05000374/2015001
Licensee:	Exelon Generation Company, LLC
Facility:	LaSalle County Station, Units 1 and 2
Location:	Marseilles, IL
Dates:	January 1, 2015 – March 31, 2015
Inspectors:	 R. Ruiz, Senior Resident Inspector J. Robbins, Resident Inspector T. Bilik, RIII Senior Reactor Inspector J. Cassidy, RIII Senior Health Physicist G. Hansen, RIII Physical Security Inspector D. Krause, RIII Reactor Engineer N. McMurray, RIII NSPDP N. Valos, RIII Senior Reactor Analyst R. Zuffa, Resident Inspector Illinois Emergency Management Agency
Approved by:	M. Kunowski, Chief Branch 5 Division of Reactor Projects

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SUMMARY OF FINDINGS

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This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. The findings were considered non-cited violations (NCVs) of NRC regulations. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using inspection manual chapter (IMC) 0609, "Significance Determination Process [SDP]," dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," effective date December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG–1649, "Reactor Oversight Process," Revision 5.

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

<u>Green</u>. The inspectors identified a Green NCV of Title 10, Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion IX, "Control of Special Processes," for the licensee's failure, as of February 13, 2015, to properly qualify a non-destructive testing procedure in accordance with applicable codes. Specifically, a liquid penetrant test (PT) procedure was not qualified for its full applicability temperature range in accordance with American Society of Mechanical Engineers (ASME) Code, Section V, "Non-Destructive Examination." The licensee entered this issue into its corrective action program (CAP) as Action Request (AR) 02451872.

The failure to gualify a liquid PT procedure in accordance with ASME Section V was a performance deficiency. The performance deficiency was determined to be more than minor because, if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, since the liquid PT procedure was not qualified for its full applicability temperature range, liquid penetrant examinations would not be assured to detect flaws in the ungualified temperature range. As a consequence, the potential would exist for a rejectable flaw to go undetected affecting the operability of the affected system. This finding affected the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality; thus, the inspectors answered 'No' to all of the screening questions. Specifically, the licensee review completed liquid penetrant examination records and did not find an example where the procedure was implemented at the ungualified temperature ranges. The inspectors determined that the primary cause of the failure to properly qualify the PT procedure was related to the Problem Identification and Resolution cross-cutting area, Operating Experience aspect (P.5). Specifically, the organization failed to effectively implement external operating experience in a timely manner. (Section 1R08.1b.(1))

Cornerstone: Mitigating Systems

<u>Green</u>. The inspectors identified a Green NCV of Title 10, CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for a failure of the licensee on February 12, 2015, to measure the interpass temperature while performing welding on the 2 diesel generator cooling water (DGCW) piping system. Consequently, welding was performed without the Code-and procedure-required interpass temperature being monitored on a number of welds, a parameter, which could have affected the mechanical properties of the material being welded. To restore compliance, the welders proceeded to measure the interpass temperatures on the balance of the welds, and verified that the interpass temperature did not exceed that allowed by procedure. The licensee entered this issue into its CAP as AR 02451583.

The inspectors determined that this issue was a performance deficiency that was more than minor because it had the potential to lead to a more significant safety concern. Specifically, absent NRC inspector intervention, the welders would have completed all of the welds without having measured the interpass temperature, a welding parameter which can affect the mechanical properties (e.g., impact properties) of some materials being welded, and, if left uncorrected could lead to a potential failure of the weld in service. The inspectors determined this finding was of very low safety significance (Green) because the DGCW system maintained its operability or functionality. The welders proceeded to measure the interpass temperatures on the balance of the welds, and verified that the interpass temperature did not exceed that allowed by procedure, and the issue did not result in the actual loss of the operability or functionality of a safety system. The inspectors determined that the primary cause of the failure to measure the interpass temperature of the failure to measure the interpass temperature of the failure to measure the interpass temperature did not exceed that allowed by procedure, and the issue did not result in the actual loss of the operability or functionality of a safety system. The inspectors determined that the primary cause of the failure to measure the interpass temperature while performing a manual welding process was related to the cross-cutting area of Human Performance, Procedure Adherence aspect (H.8). Specifically, the welders failed to follow procedures. (Section 1R08.1b.(2))

Licensee-Identified Violations

A violation of very low safety or security significance that was identified by the licensee has been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. This violation and CAP tracking numbers are listed in Section 40A7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1

The unit began the inspection period operating at full power. On March 28, 2015, power was reduced to approximately 65 percent to perform control rod sequence exchange and scram time testing. The unit was restored to full power that same day, where it remained for the duration of the inspection period.

Unit 2

The unit began the inspection period operating at full power. On January 24, 2015, power was reduced to approximately 92 percent to perform a control rod sequence exchange. On February 1, Unit 2 began a downpower in preparation for refueling outage (RFO) L2R15, which began February 2, when the unit was disconnected from the grid. On February 27, following completion of the outage, the unit was restarted and synchronized to the grid. Power was maintained below 25 percent until March 15 due to operating restrictions associated with foreign material in the reactor (see Section 4OA2 of this report for more detail), when power was increased to 45 percent. On March 23, the final power ascension began and full power was achieved on March 25.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

- 1R04 Equipment Alignment (71111.04)
 - .1 Quarterly Partial System Walkdowns
 - a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- unit common diesel generator (DG) with 2A DG out-of-service; and
- 2A DG after day tank cleaning.

The inspectors selected these systems based on their risk-significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, the Updated Final Safety Analysis Report (UFSAR), Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed

operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted two partial system walkdown samples as defined in Inspection Procedure (IP) 71111.04–05.

b. Findings

No findings were identified.

- 1R05 Fire Protection (71111.05)
 - .1 <u>Routine Resident Inspector Tours</u> (71111.05Q)
 - a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- fire zone 7B3, unit common Division 1 DG room;
- fire zone 3H3, Unit 2 Residual Heat Removal (RHR) B corner room during hot work;
- fire zone 2H2, Unit 1 High Pressure Core Spray (HPCS) corner room;
- fire zone 3H2, Unit 2 HPCS corner room; and
- fire zone area 1, 843' refuel floor (RFF).

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and implemented adequate compensatory measures for out-of-service (OOS), degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk and their potential to impact equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment to this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted five quarterly fire protection inspection samples as defined in IP 71111.05–05.

b. Findings

No findings were identified.

1R07 <u>Annual Heat Sink Performance</u> (71111.07)

- .1 Heat Sink Performance
 - a. Inspection Scope

The inspectors reviewed WO 1528657, which was the licensee's Generic Letter 89-13 inspection and eddy current test of the 2B residual heat removal (RHR) Heat Exchanger to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions. Documents reviewed are listed in the Attachment to this document.

This annual heat sink performance inspection constituted one sample as defined in IP 71111.07–05.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

From February 9 through February 13, 2015, the inspectors conducted a review of the implementation of the licensee's Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system, risk-significant piping and components, and containment systems.

The ISIs described in Sections 1R08.1 and 1R08.5 below constituted one inspection sample as defined in IP 71111.08–05.

.0 Piping Systems Inservice Inspection

a. Inspection Scope

The inspectors either observed or reviewed the following non-destructive examinations (NDEs) mandated by the ASME Section XI Code to evaluate compliance with the ASME Code Section XI, and Section V requirements, and if any indications and defects were detected, to determine if these were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement:

- ultrasonic testing (UT) of RHR elbow-to-pipe weld on IRH–2004–02;
- UT of main seam pipe-to-fluted housing weld on IMS–2051–17;
- magnetic particle testing (MT) of RHR lug welds, RH53–2826X;

- MT RHR nozzle-to-shell weld, IRH-HX2B–07;
- visual examination (VT)–3, of reactor pressure vessel (RPV) bushing, 2–RPV;
- VT–1 examination of main-steam lug, MS04-2876X; and
- VT-1 examination of main-steam shear lugs, MS04-2651C.

The inspectors reviewed the following examination completed during the previous outage with relevant/recordable conditions/indications accepted for continued service to determine whether acceptance was in accordance with the ASME Code Section XI, or an NRC-approved alternative.

• Indication UT disposition rejected during valve-to-pipe weld (IRR–2006–08) examination (WO 1428188).

The inspectors reviewed records for the following pressure boundary weld repairs completed for risk-significant systems during the last outage to determine if the licensee applied the pre-service NDEs, and acceptance criteria required by the Construction Code, and/or the NRC-approved Code relief request. Additionally, the inspectors reviewed the welding procedure specifications (WPSs) and supporting weld procedure qualification records to determine whether the weld procedures were qualified in accordance with the requirements of the Construction Code and the ASME Code, Section IX for the following WOs:

- Install structural pad on line 2RH83AB–20," RHR service water (WO 1646738);
- Install replacement elbow in line 2HP09A–6," HPCS (WO 1635334); and
- Perform pipe replacement on 2DG05A, DGCW piping (WO 1704845).

b. Findings

(1) Liquid Penetrant Testing Procedure Was Not Qualified for Its Full Applicability Range

<u>Introduction</u>: The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for a failure to properly qualify a non-destructive testing procedure in accordance with applicable codes. Specifically, a liquid PT procedure was not qualified for its full applicability temperature range in accordance with ASME Code, Section V, "NDE."

<u>Description</u>: While reviewing the licensee's procedure qualification/verification for expanded temperature for visible dye penetrant Procedure ER–AA–335–002, the inspectors noted that the licensee had failed to properly qualify the procedure for expanded temperature application above 125 degrees Fahrenheit.

Section V, of the ASME Code, Article 6, "Liquid Penetrant Examination," states that "when it is not practical to conduct a liquid penetrant examination within the temperature range of 50 degrees Fahrenheit to 125 degrees Fahrenheit, the examination procedure at the proposed lower or higher temperature range requires qualification of the penetrant materials and processing in accordance with Mandatory Appendix III of this Article."

A methodology was established in Section V, Appendix III to qualify a procedure for use outside of the Code allowable range. Appendix III, Paragraph 641.2, "Temperature Greater Than 125 degrees Fahrenheit (52 degrees Celsius)," states, in part, that "to qualify a procedure for temperatures above 125 degrees Fahrenheit (52 degrees

Celsius), the upper and lower temperature limits shall be established, and the procedure qualified at these temperatures. [As an example, to qualify a procedure for the temperature range 126 degrees Fahrenheit (52 degrees Celsius) to 200 degrees Fahrenheit (93 degrees Celsius), the capability of a penetrant to reveal indications on the comparator shall be demonstrated at both temperatures]." As part of the qualification process, the Code requires that a "control" test be established to compare the proposed qualification temperature test such that the indications obtained under the proposed conditions are essentially the same as that obtained during examination at 50 degrees Fahrenheit to 125 degrees Fahrenheit (the Code established/qualified range).

The inspectors noted that the licensee had failed to follow the demonstration methodology as required by the ASME Code to qualify Procedure ER–AA–335–002 for use beyond the Code allowable upper limit of 125 degrees Fahrenheit, up to 240 degrees Fahrenheit. Per the ASME Code, this would have required tests to be performed at both 126 degrees Fahrenheit and 240 degrees Fahrenheit in order to bound the extended range. Specifically, the licensee failed to perform the lower bound demonstration (i.e., at 126 degrees Fahrenheit).

The licensee captured the concern in its CAP as AR 02451872. As an immediate corrective action, the licensee reviewed completed liquid penetrant examination records, and did not find an example where the procedure was implemented at the unqualified temperature range. The licensee planned to evaluate the procedure for possible revision for examinations above 125 degrees Fahrenheit, or demonstrate the procedure at 126 degrees Fahrenheit to bring the procedure back into compliance with the Code.

<u>Analysis</u>: The failure to qualify liquid PT procedure in accordance with ASME Section V was a performance deficiency. The performance deficiency was determined to be more than minor because, if left uncorrected, had the potential to lead to a more significant safety concern. Specifically, since the liquid PT procedure was not qualified for its full applicability temperature range, liquid penetrant examinations would not be assured to detect flaws in the unqualified temperature range. As a consequence, the potential would exist for a rejectable flaw to go undetected affecting the operability of the affected system. This finding affected the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, Attachment 0609.04, "Initial Characterization of Findings," dated June 19, 2012. Because the finding impacted the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones, the inspectors screened the finding through IMC 0609, Appendix A, "The SDP for Findings At-Power," dated June 19, 2012. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality; thus, the inspectors answered "No" to all of the screening questions. Specifically, the licensee completed a review of liquid penetrant examination records, and did not find an example where the procedure was implemented at the unqualified temperature range.

The inspectors determined that the primary cause of the failure to properly qualify the Dye Penetrant Examination procedure was related to the Problem Identification and Resolution cross-cutting area, Operating Experience aspect (P.5). Specifically, the

organization failed to effectively implement external operating experience in a timely manner.

<u>Enforcement</u>: The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion IX, for a failure to qualify a liquid PT procedure for its full applicability temperature range in accordance with ASME Code.

Title 10 CFR Part 50, Appendix B, Criterion IX, requires, in part, "measures to be established to assure that non-destructive testing are controlled and accomplished using qualified procedures in accordance with applicable codes."

Part T–653, "Techniques for Non-Standard Temperatures," of ASME Section V, Article 6, "Liquid Penetrant Examination," states that "when it is not practical to conduct a liquid penetrant examination within the temperature range of 50 degrees Fahrenheit to 125 degrees Fahrenheit, the examination procedure at the proposed lower or higher temperature range requires qualification of the penetrant materials, and processing in accordance with Mandatory Appendix III of this Article."

Appendix III, Paragraph 641.2, "Temperature Greater Than 125 degrees Fahrenheit (52 degrees Celsius)," states, in part that "to qualify a procedure for temperatures above 125 degrees Fahrenheit (52 degrees Celsius), the upper and lower temperature limits shall be established and the procedure qualified at these temperatures. [As an example, to qualify a procedure for the temperature range 126 degrees Fahrenheit (52 degrees Celsius) to 200 degrees Fahrenheit (93 degrees Celsius), the capability of a penetrant to reveal indications on the comparator shall be demonstrated at both temperatures]."

Contrary to the above, as of February 13, 2015, the licensee did not qualify liquid PT for non-standard temperatures above 125 degrees Fahrenheit for Procedure ER–AA–335–002. Specifically, the licensee did not qualify the procedure at the lower temperature bound.

The licensee was still completing its planned corrective actions at the end of the inspection; however, the inspectors determined that the continued non-compliance did not present a safety concern because the licensee demonstrated that there were no instances where the procedure was implemented at the unqualified temperature range.

Because this violation was of very low safety significance, and was entered into the licensee's CAP, as AR 02451872, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000373/2015001–01; 05000374/2015001–01, Liquid Penetrant Testing Procedure Was Not Qualified for Its Full Applicability Range).

(2) Failure to Measure InterpassTemperature

Introduction: The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for a failure to measure the interpass temperature while performing welding on the Unit 2 DGCW piping system. Consequently, welding was performed without the Code and procedure required interpass temperature being monitored—a parameter that can potentially affect the mechanical properties of materials being welded.

<u>Description</u>: On February 12, 2015, the inspectors observed that welders had failed to measure the interpass temperature while performing gas tungsten arc welding (GTAW) on DGCW piping. The inspectors also noted that there were no temperature-measuring devices readily available in the area.

The welders were to perform the welding activities in accordance with WPS 1–1–GTSM–PWHT, which specified an interpass temperature to ensure that temperature was not exceeded on the work piece between passes. Furthermore, Procedure MA–MW–796–101, "Welding, Brazing and Soldering Records," and Procedure CC–AA–501–1011, "Exelon Nuclear Welding Program Preheat, Interpass Temperature and Post-Weld Heat Treatment of Welds," used in conjunction with the WPS, required, in part, that "When interpass temperature is specified (on the WPS) **CHECK** the interpass temperature prior to initiating the arc for each pass using contact pyrometers, thermometers, or temperature indicating crayons." These procedural provisions implemented Article 1 of ASME Section IX, which states that welding must be performed as established in the WPS.

Multiple passes had already been performed on a number of welds as part of the repair of the DGCW piping before the inspectors observed the in-process welding and noted the failure to measure the interpass temperature. The inspectors were concerned that failing to follow procedures as required by the code and procedures could impact the quality of the welds and lead to susceptible material failing while in service, and thereby adversely affect the integrity of the associated systems. As a result of the inspectors' concern, the welders measured the interpass temperatures on the balance of the welding, and verified that the interpass temperatures did not exceed that allowed by procedure. Since the measured interpass temperatures were well below that permitted by procedure, the inspectors concluded that there was reasonable assurance that the previous weld passes would not have exceeded the interpass temperature. The issue was entered into the licensee's CAP as AR 02451583.

<u>Analysis</u>: The inspectors determined that the failure to measure the weld interpass temperature as required by the ASME Code Section IX and site procedures was a performance deficiency that warranted a significance evaluation. The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the more than minor question "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, absent NRC intervention, the welders would have completed all of the welds without having measured the interpass temperature–a welding parameter that can affect the mechanical properties (e.g., impact properties) of some materials being welded—and if left uncorrected, could have led to a potential failure of welds in service.

In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 0609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the "diesel inoperable" box under the Mitigating Systems Cornerstone because leakage on the DGCW piping system could make the diesel inoperable. The inspectors determined this finding was of very low safety significance (Green) based on answering "Yes" to the questions in Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The SDP for Findings At-Power," issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating Structures, Systems, and Components (SSCs), does the SSC maintain its operability or functionality"? The welders subsequently performed interpass temperature measurements and demonstrated that the temperature would remain below the required temperature of the welds in question, and the issue did not result in the actual loss of the operability or functionality of a safety system.

The inspectors determined that the primary cause of the failure to measure the interpass temperature while performing a manual welding process was related to the cross-cutting component of Human Performance, H.8, "Procedure Adherence." Specifically, the welders failed to follow procedures.

<u>Enforcement</u>: The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion IX, for a welder's failure to measure interpass temperature while performing welding on the DGCW piping system, contrary to station procedure.

Title 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," states that, "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements."

The WPS 1–1–GTSM–PWHT, used to perform welding on DGCW piping system welds, includes an interpass temperature.

Welding Procedure MA–MW–796–101, "Welding, Brazing and Soldering Records," requires, in part, that "When interpass temperature is specified (on the WPS) **CHECK** the interpass temperature prior to initiating the arc for each pass using contact pyrometers, thermometers, or temperature indicating crayons."

Contrary to the above, while performing welding on the DGCW piping system piping welds on February 12, 2015, the welders did not accomplish the welding in accordance with the WPS in that they failed to measure the interpass temperature. After identification by the inspectors, the welders proceeded to measure the interpass temperature on the balance of the weld passes, thereby proving that interpass temperatures had not been exceeded.

Because of the very low safety significance, and because the licensee entered this issue into its CAP (AR 02451583), it is being treated as an NCV consistent with Section 2.3.2 of the Enforcement Policy (NCV 05000373/2015001–02; 05000374/2015001–02, Failure to Measure InterpassTemperature).

- .2 <u>Reactor Pressure Vessel Upper Head Penetration Inspection Activities (Not Applicable)</u>
- .3 Boric Acid Corrosion Control (Not Applicable)
- .4 <u>Steam Generator Tube Inspection Activities (Not Applicable)</u>

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI-related problems entered into the licensee's CAP and conducted interviews with licensee staff to determine if:

- the licensee had established an appropriate threshold for identifying ISI-related problems;
- the licensee had performed a root cause (if applicable), and taken appropriate corrective actions; and
- the licensee had evaluated operating experience and industry generic issues related to ISI and pressure boundary integrity.

The inspectors performed these reviews to evaluate compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the Attachment to this report.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

- .1 <u>Resident Inspector Quarterly Review of Licensed Operator Regualification</u> (71111.11Q)
 - a. Inspection Scope

On March 27, 2015, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program simulator sample as defined in IP 71111.11.

b. Findings

No findings were identified.

.2 <u>Resident Inspector Quarterly Observation During Periods of Heightened Activity or Risk</u> (71111.11Q)

a. Inspection Scope

On March 13, 2015, the inspectors observed a Unit 1 rod pattern and flow adjustment activity. This was an activity that required heightened awareness or was related to increased risk. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms (if applicable);
- correct use and implementation of procedures;
- control board (or equipment) manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications (if applicable).

The performance in these areas was compared to pre-established operator action expectations, procedural compliance, and task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator heightened activity/risk sample as defined in IP 71111.11.

b. Findings

No findings were identified.

1R12 <u>Maintenance Effectiveness</u> (71111.12)

- .1 Routine Quarterly Evaluations
 - a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant system:

• core standby cooling system (CSCS)

The inspectors reviewed events, such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems, and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;

- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for SSCs/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly maintenance effectiveness sample as defined in IP 71111.12–05.

b. Findings

No findings were identified.

- 1R13 <u>Maintenance Risk Assessments and Emergent Work Control</u> (71111.13)
- .1 Maintenance Risk Assessments and Emergent Work Control
 - a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- international operating experience report of AREVA Atrium10 load chain failure; and
- Bus 236Y outage with concurrent failure led to loss of technical support center uninterruptible power supply.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

Documents reviewed are listed in the Attachment to this report.

These maintenance risk assessments and emergent work control activities constituted two samples as defined in IP 71111.13–05.

b. Findings

No findings were identified.

- 1R15 Operability Determinations and Functional Assessments (71111.15)
 - .2 Operability Evaluations
 - a. Inspection Scope

The inspectors reviewed the following issues:

- OE97052, RHR piping contacting floor penetration on 761' elevation;
- line 2DG5A wall thinning and extent of condition review;
- in-vessel visual inspection (IVVI) shroud crack on weld H–4;
- Unit 2 loss of jet pump plugs in reactor vessel;
- refueling bridge interlocks; and
- AREVA Atrium 10 fuel load chain issue.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and UFSAR to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of CAP documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted six samples as defined in IP 71111.15–05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

- .1 Plant Modifications
 - a. Inspection Scope

The inspectors reviewed the following modifications:

- engineering change (EC) 396069, Installation of high energy line break barrier (Temporary);
- various ECs for Unit 2 jet pump plug issue (Permanent); and
- WO 1786945 to remove and replace a strut and modify support 2RH14–2832X (Permanent).

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening against the design basis, the UFSAR, and the TSs, as applicable, to verify that the modification did not affect the operability or availability of the affected systems. The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modifications were installed as directed and consistent with the design control documents; the modifications operated as expected; post-modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one temporary modification sample and two permanent plant modification samples as defined in IP 71111.18–05.

b. Findings

(Opened) Unresolved Item–Core Operating Limits Report Revision Potentially Created Non-Conservative Technical Specifications

Introduction: The inspectors identified an unresolved item (URI) regarding Revision 1 of the Unit 2 Cycle 16 Core Operating Limits Report (COLR). Specifically, the licensee introduced new "Operating Limits for Lost Jet Pump Plug Seals Mitigation Strategy," which may have created new Limiting Conditions for Operations (LCOs) as defined by §50.36c(2). If this were the case, the current NRC-approved TS LCOs for the associated systems (discussed in the Description section below) would have been rendered non-conservative, and a license amendment would have been required to incorporate those new LCOs into the TSs.

<u>Description</u>: As part of the overall review of the Unit 2 Jet Pump Plug issue (described in greater detail in Section 4OA2.4 of this report), the inspectors reviewed the changes made to the Unit 2 COLR, Cycle 16, Revisions 1 and 2. The inspectors assessed the changes with respect to their potential impact on the current licensing basis, i.e., TSs and regulations such as 10 CFR 50.36.

In Revision 1 of LaSalle's Unit 2 Cycle 16 COLR, the licensee introduced a new section in the form of an Appendix, entitled "Operating Limits for Lost Jet Pump Plug Seals Mitigation Strategy." This appendix states "The following limits apply while the jet pump plug peripheral bundle blocked orifice condition exists." Specifically, item 4 entitled "Other Requirements," states in part that "All equipment must be in-service. This includes the EOOS [equipment out-of-service] assumed in the Base Case mentioned in Footnote 1 of COLR Section 10 EXCEPT LPRMs [local power range monitors] and TIPOOS [traversing in-core probe out-of-service] [...] In the event of an EOOS, take action in accordance with TS 3.2.2 ACTION statements." Those TS actions were to "Reduce THERMAL POWER to < 25% RTP [rated thermal power]" within a 4-hour completion time. The equipment referenced in the COLR Section 10 Base Case that have associated TS LCOs are safety relief valves (SRVs) (LCOs 3.4.4 and 3.5.1) and turbine bypass valves (TBVs) (LCO 3.7.7).

- LCO 3.4.4 states "The safety function of 12 SRVs shall be OPERABLE." Unit 2 has a total of 13 SRVs, so this LCO essentially allows one SRV to be OOS indefinitely with no further action required; however, since the COLR created a new operational restriction to prohibit *any* SRVs from being OOS in order to maintain the unit in an analyzed condition, the inspectors questioned the apparent non-conservatism that the COLR created for LCO 3.4.4. Specifically, under an identical condition of 1 SRV OOS, the COLR would have required the unit to downpower to less than 25 percent power, while the TSs would have allowed continuous operation at full power.
- LCO 3.5.1 states "[...] the Automatic Depressurization System (ADS) function of six safety/relief valves shall be OPERABLE." Unit 2 has a total of 7 ADS SRVs, so this LCO essentially allows one ADS SRV to be OOS indefinitely with no further action required; however, since the COLR created a new operational restriction to prohibit *any* SRVs from being OOS in order to maintain the unit in an analyzed condition, the inspectors questioned the apparent non-conservatism that the COLR created for LCO 3.5.1. Specifically, under an identical condition of 1 ADS SRV OOS, the COLR would have required the unit to downpower to less than 25 percent power, while the TSs would have allowed continuous operation at full power.
- LCO 3.7.7 states "The Main Turbine Bypass System shall be OPERABLE. OR LCO 3.2.2, 'MINIMUM CRITICAL POWER RATIO (MCPR),' limits for an inoperable Main Turbine Bypass System, as specified in the COLR, are made applicable." The Cycle 16 COLR Base Case was analyzed to allow 2 TBVs to be OOS without taking any further action or incurring any operational penalty; however, since the COLR created a new operational restriction to prohibit any TBVs from being OOS in order to maintain the unit in an analyzed condition, the inspectors questioned the apparent non-conservatism that the COLR created for LCO 3.7.7. Specifically, under an identical condition of 2 TBVs OOS, the COLR would have required the unit to downpower to less than 25 percent power, while the TSs would have allowed continuous operation at full power.

This issue is considered a URI pending additional internal discussion with the NRC Office of Nuclear Reactor Regulation to seek guidance on whether the above examples classify as LCOs and further, how NRC Administrative Letter 98–10 may apply (URI 05000374/2015001–03, COLR Revision Potentially Created Non-Conservative Technical Specifications).

1R19 <u>Post-Maintenance Testing</u> (71111.19)

.1 <u>Post-Maintenance Testing</u>

a. Inspection Scope

The inspectors reviewed the following post-maintenance testing (PMT) activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- WO 1794320, reactor building ventilation dampers 2VR04YA and 2VR05YA;
- WO 1806030, Bus 243 and 2B DG tripped unexpectedly; and
- Unit common DG PMT idle start using LOS–DG–M1.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed: acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSs, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed CAP documents associated with PMTs to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted three post-maintenance testing samples as defined in IP 71111.19–05.

b. Findings

No findings were identified.

- 1R20 <u>Outage Activities</u> (71111.20)
 - .1 <u>Refueling Outage Activities</u>
 - a. Inspection Scope

The inspectors reviewed the Outage Safety Plan (OSP) and contingency plans for the Unit 2 RFO, conducted February 1–26, 2015, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the RFO, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below:

- licensee configuration management, including maintenance of defense-in-depth commensurate with the OSP for key safety functions and compliance with the applicable TS when taking equipment out-of-service;
- implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;
- installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error;
- controls over the status and configuration of electrical systems to ensure that TS and OSP requirements were met, and controls over switchyard activities;
- monitoring of decay heat removal processes, systems, and components;
- controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system;
- reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;
- controls over activities that could affect reactivity;
- maintenance of secondary containment as required by TSs;
- licensee fatigue management, as required by 10 CFR 26, Subpart I;
- refueling activities, including fuel handling and sipping to detect fuel assembly leakage;
- startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system (ECCS) suction strainers, and reactor physics testing; and
- licensee identification and resolution of problems related to RFO activities.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RFO sample as defined in IP 71111.20–05.

b. <u>Findings</u>

No findings were identified.

1R22 <u>Surveillance Testing</u> (71111.22)

- .1 Surveillance Testing
- a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- WO 1795923, 2A DG idle start (Routine);
- Unit 2 LOS–RH–R2 ECCS reverse flush (Routine);
- WO 1620242, Unit 2 Division 1 ECCS integrated response time testing (Routine); and
- WO 1620118 2RH Check Valve (Containment Isolation Valve).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- the effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency was in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, ASME code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted three routine surveillance testing samples and one containment isolation valve sample as defined in IP 71111.22, Sections–02 and–05.

b. Findings

1EP2 Alert and Notification System Evaluation (71114.02)

.1 Alert and Notification System Evaluation

a. Inspection Scope

The inspectors reviewed documents, and conducted discussions with Emergency Preparedness (EP) staff and management regarding the operation, maintenance, and periodic testing of the back-up and primary Alert and Notification System (ANS) in LaSalle County Station's plume pathway Emergency Planning Zone. The inspectors reviewed monthly trend reports and the daily and monthly operability records from April 2013 through March 2015. Information gathered during document reviews and interviews was used to determine whether the ANS equipment was maintained and tested in accordance with Emergency Plan commitments and procedures. Documents reviewed are listed in the Attachment to this report.

This ANS inspection constituted one sample as defined in IP 71114.02–06.

b. Findings

No findings were identified.

- 1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)
 - .1 <u>Emergency Response Organization Staffing and Augmentation System</u>
 - a. Inspection Scope

The inspectors reviewed and discussed with plant EP management and staff the emergency plan commitments and procedures that addressed the primary and alternate methods of initiating an Emergency Response Organization (ERO) on-shift and augmentation staffing levels. The inspectors reviewed reports and a sample of CAP records of unannounced off-hour augmentation call-in tests, which were conducted between April 2013 and March 2015, to determine the adequacy of the drill critiques and associated corrective actions. The inspectors also reviewed a sample of the EP training records of 29 ERO personnel, who were assigned to key and support positions, to determine the status of their training as it related to their assigned ERO positions. Documents reviewed are listed in the Attachment to this report.

This ERO augmentation testing inspection constituted one sample as defined in IP 71114.03–06.

b. Findings

1EP5 <u>Maintenance of Emergency Preparedness</u> (71114.05)

.1 Maintenance of Emergency Preparedness

a. Inspection Scope

The inspectors reviewed a sample of Nuclear Oversight (i.e., quality assurance) staff's 2013 and 2014 audits of LaSalle Station's EP Program to determine that the independent assessments met the requirements of 10 CFR 50.54(t). The inspectors also reviewed samples of CAP records associated with the 2014 Biennial Exercise, as well as various EP drills conducted in 2013 and 2014, in order to determine whether the licensee fulfilled drill commitments, and to evaluate the licensee's efforts to identify and resolve identified issues. The inspectors reviewed a sample of EP items and corrective actions related to the facility's EP Program, and activities to determine whether corrective actions were completed in accordance with the site's CAP. Documents reviewed are listed in the Attachment to this report.

This correction of EP weaknesses and deficiencies inspection constituted one sample as defined in IP 71114.05–06.

b. Findings

No findings were identified.

2. RADIATION SAFETY

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

This inspection constituted a partial sample as defined in IP 71124.01–05.

- .1 <u>Radiological Hazard Assessment</u> (02.02)
 - a. Inspection Scope

The inspectors reviewed the last two radiological surveys from selected plant areas and evaluated whether the thoroughness and frequency of the surveys were appropriate for the given radiological hazard.

The inspectors conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas, to evaluate material conditions and performed independent radiation measurements to verify conditions.

The inspectors selected the following radiologically risk-significant work activities that involved exposure to radiation:

- suppression pool diving and contingency for fuel fragment/pellet/irradiated component recovery and support activities inside the suppression chamber;
- reactor vessel disassembly/reassembly and support activities (including cavity support work);
- refueling floor (RFF) activities (no cavity work); and
- reactor cavity work platform activities.

For these work activities, the inspectors assessed whether the pre-work surveys performed were appropriate to identify and quantify the radiological hazard and to establish adequate protective measures. The inspectors evaluated the Radiological Survey Program to determine if hazards were properly identified, including the following:

- identification of hot particles;
- the presence of alpha emitters;
- the potential for airborne radioactive materials, including the potential presence of transuranics and/or other hard-to-detect radioactive materials (This evaluation may include licensee planned entry into non-routinely entered areas subject to previous contamination from failed fuel.);
- the hazards associated with work activities that could suddenly and severely increase radiological conditions and that the licensee has established a means to inform workers of changes that could significantly impact their occupational dose; and
- severe radiation field dose gradients that can result in non-uniform exposures of the body.

The inspectors observed work in potential airborne areas and evaluated whether the air samples were representative of the breathing air zone. The inspectors evaluated whether continuous air monitors were located in areas with low background to minimize false alarms and were representative of actual work areas. The inspectors evaluated the licensee's program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

b. Findings

No findings were identified.

- .2 Instructions to Workers (02.03)
- a. Inspection Scope

The inspectors selected various containers holding non-exempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers, and assessed whether the containers were labeled and controlled in accordance with 10 CFR 20.1904, "Labeling Containers," or met the requirements of 10 CFR 20.1905(g), "Exemptions To Labeling Requirements."

The inspectors reviewed the following radiation work permits (RWPs) used to access high radiation areas and evaluated the specified work control instructions or control barriers:

- RWP 10016561; L2R15: suppression pool diving and contingency for fuel fragment/pellet/irradiated component recovery and support activities inside the suppression chamber;
- RWP 10016575; L2R15: reactor vessel disassembly/reassembly and support activities (including cavity support work);
- RWP 10016576; L2R15: RFF activities (no cavity work); and
- RWP 10016577; L2R15: reactor cavity work platform activities.

For these RWPs, the inspectors assessed whether allowable stay-times or permissible dose (including from the intake of radioactive material) for radiologically significant work under each RWP were clearly identified. The inspectors evaluated whether electronic personal dosimeter alarm setpoints were in conformance with survey indications and plant policy.

For work activities that could suddenly and severely increase radiological conditions, the inspectors assessed the licensee's means to inform workers of changes that could significantly impact their occupational dose.

b. Findings

No findings were identified.

- .3 <u>Contamination and Radioactive Material Control</u> (02.04)
- a. Inspection Scope

The inspectors observed locations where the licensee monitors potentially contaminated material leaving the radiological control area, and inspected the methods used for control, survey, and release from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures and whether the procedures were sufficient to control the spread of contamination and prevent unintended release of radioactive materials from the site. The inspectors assessed whether the radiation monitoring instrumentation had appropriate sensitivity for the type(s) of radiation present.

The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material. The inspectors evaluated whether there was guidance on how to respond to an alarm that indicates the presence of licensed radioactive material.

b. Findings

No findings were identified.

- .4 Radiological Hazards Control and Work Coverage (02.05)
- a. Inspection Scope

The inspectors evaluated ambient radiological conditions (e.g., radiation levels or potential radiation levels) during tours of the facility. The inspectors assessed whether the conditions were consistent with applicable posted surveys, RWPs, and worker briefings.

The inspectors evaluated the adequacy of radiological controls, such as required surveys, radiation protection job coverage (including audio and visual surveillance for remote job coverage), and contamination controls. The inspectors evaluated the licensee's use of electronic personal dosimeters in high noise areas as high radiation area monitoring devices.

The inspectors assessed whether radiation monitoring devices were placed on the individual's body consistent with licensee procedures. The inspectors assessed whether the dosimeter was placed in the location of highest expected dose or that the licensee properly employed an NRC-approved method of determining effective dose equivalent.

The inspectors reviewed the application of dosimetry to effectively monitor exposure to personnel in high-radiation work areas with significant dose rate gradients.

The inspectors reviewed the following RWPs for work within airborne radioactivity areas with the potential for individual worker internal exposures:

- RWP 10016561; L2R15: suppression pool diving and contingency for fuel fragment/pellet/irradiated component recovery and support activities inside the suppression chamber;
- RWP 10016575; L2R15: reactor vessel disassembly/reassembly and support activities (including cavity support work);
- RWP 10016576; L2R15: RFF activities (no cavity work); and
- RWP 10016577; L2R15: reactor cavity work platform activities.

For these RWPs, the inspectors evaluated airborne radioactive controls and monitoring, including potential for significant airborne levels (e.g., grinding, grit blasting, system breaches, entry into tanks, cubicles, and reactor cavities). The inspectors assessed barrier (e.g., tent or glove box) integrity and temporary high-efficiency particulate air ventilation system operation.

b. Findings

No findings were identified.

- .5 <u>Radiation Worker Performance</u> (02.07)
- a. Inspection Scope

The inspectors observed radiation worker performance with respect to stated radiation protection work requirements. The inspectors assessed whether workers were aware of the radiological conditions in their workplace and the RWP controls/limits in place, and whether their performance reflected the level of radiological hazards present.

b. <u>Findings</u>

No findings were identified.

- .6 <u>Radiation Protection Technician Proficiency</u> (02.08)
- a. Inspection Scope

The inspectors observed the performance of the radiation protection technicians with respect to all radiation protection work requirements. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace and the RWP controls/limits, and whether their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

b. Findings

No findings were identified.

.7 <u>Problem Identification and Resolution</u> (02.09)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involve radiation monitoring and exposure controls. The inspectors assessed the licensee's process for applying operating experience to their plant.

b. Findings

No findings were identified.

2RS2 Occupational As-Low-As-Is-Reasonably-Achievable Planning and Controls (71124.02)

This inspection constituted a partial sample as defined in IP 71124.02–05.

- .1 <u>Radiation Worker Performance</u> (02.05)
 - a. Inspection Scope

The inspectors observed radiation worker and radiation protection technician performance during work activities being performed in radiation areas, airborne radioactivity areas, or high radiation areas. The inspectors evaluated whether workers demonstrated the as-low-as-is-reasonably-achievable (ALARA) philosophy in practice (e.g., workers were familiar with the work activity scope and tools to be used, workers used ALARA low-dose waiting areas) and whether there were any procedure compliance issues (e.g., workers were not complying with work activity controls). The inspectors observed radiation worker performance to assess whether the training and skill level were sufficient with respect to the radiological hazards and the work involved.

b. Findings

No findings were identified.

2RS5 Radiation Monitoring Instrumentation (71124.05)

This inspection constituted a partial sample as defined in IP 71124.05–05.

- .1 Inspection Planning (02.01)
- a. Inspection Scope

The inspectors reviewed the plant's UFSAR to identify radiation instruments associated with monitoring area radiological conditions, including airborne radioactivity, process streams, effluents, materials/articles, and workers. Additionally, the inspectors reviewed

the instrumentation and the associated TS requirements for post-accident monitoring instrumentation, including instruments used for remote emergency assessment.

The inspectors reviewed a listing of in-service survey instrumentation, including air samplers and small article monitors, along with instruments used to detect and analyze workers' external contamination. Additionally, the inspectors reviewed personnel contamination monitors and portal monitors, including whole-body counters to detect workers' internal contamination. The inspectors reviewed this list to assess whether an adequate number and type of instruments were available to support operations.

The inspectors reviewed licensee and third-party evaluation reports of the Radiation Monitoring Program since the last inspection. These reports were reviewed for insights into the licensee's program and to aid in selecting areas for review ("smart sampling").

The inspectors reviewed procedures that govern instrument source checks and calibrations, focusing on instruments used for monitoring transient high radiological conditions, including instruments used for underwater surveys. The inspectors reviewed the calibration and source check procedures for adequacy, and as an aid to smart sampling.

The inspectors reviewed the area radiation monitor alarm setpoint values, and setpoint bases as provided in the TSs and the UFSAR.

The inspectors reviewed effluent monitor alarm setpoint bases, and the calculational methods provided in the Offsite Dose Calculation Manual.

b. Findings

No findings were identified.

- .2 <u>Walkdowns and Observations</u> (02.02)
- a. Inspection Scope

The inspectors observed licensee staff performance as the staff demonstrated source checks for various types of portable survey instruments. The inspectors assessed whether high-range instruments were source checked on all appropriate scales.

The inspectors walked down area radiation monitors and continuous air monitors to determine whether they were appropriately positioned relative to the radiation sources or areas they were intended to monitor. Selectively, the inspectors compared monitor response (via local or remote control room indications) with actual area conditions for consistency.

The inspectors selected personnel contamination monitors, portal monitors, and small article monitors, and evaluated whether the periodic source checks were performed in accordance with the manufacturer's recommendations and licensee procedures.

b. <u>Findings</u>

.3 <u>Calibration and Testing Program</u> (02.03)

Laboratory Instrumentation

a. Inspection Scope

The inspectors assessed laboratory analytical instruments used for radiological analyses to determine whether daily performance checks and calibration data indicated that the frequency of the calibrations was adequate, and there were no indications of degraded instrument performance.

The inspectors assessed whether appropriate corrective actions were implemented in response to indications of degraded instrument performance.

b. Findings

No findings were identified.

Whole-Body Counter

a. Inspection Scope

The inspectors reviewed the methods and sources used to perform whole-body count functional checks before daily use of the instrument, assessed whether check sources were appropriate, and aligned with the plant's isotopic mix.

The inspectors reviewed whole-body count calibration records since the last inspection and evaluated whether calibration sources were representative of the plant source term and that appropriate calibration phantoms were used. The inspectors looked for anomalous results or other indications of instrument performance problems.

b. Findings

No findings were identified.

Post-Accident Monitoring Instrumentation

a. Inspection Scope

Inspectors selected containment high-range monitors and reviewed the calibration documentation since the last inspection.

The inspector assessed whether an electronic calibration was completed for all range decades above 10 rem/hour, and whether at least 1 decade at or below 10 rem/hour was calibrated using an appropriate radiation source.

The inspectors assessed whether calibration acceptance criteria were reasonable; accounting for the large measuring range and the intended purpose of the instruments.

The inspectors selected effluent/process monitors that were relied on by the licensee in its emergency operating procedures as a basis for triggering emergency action levels and subsequent emergency classifications, or to make protective action recommendations during an accident. The inspectors evaluated the calibration and availability of these instruments.

The inspectors reviewed the licensee's capability to collect high-range, post-accident iodine effluent samples.

As available, the inspectors observed electronic and radiation calibration of these instruments to assess conformity with the licensee's calibration and test protocols.

b. Findings

No findings were identified.

Portal Monitors, Personnel Contamination Monitors, and Small Article Monitors

a. Inspection Scope

For each type of these instruments used onsite, the inspectors assessed whether the alarm setpoint values were reasonable under the circumstances to ensure that licensed material is not released from the site.

The inspectors reviewed the calibration documentation for each instrument selected, and discussed the calibration methods with the licensee to determine consistency with the manufacturer's recommendations.

b. Findings

No findings were identified.

Portable Survey Instruments, Area Radiation Monitors, Electronic Dosimetry, and Air Samplers/Continuous Air Monitors

a. Inspection Scope

The inspectors reviewed calibration documentation for at least one of each type of instrument. For portable survey instruments and area radiation monitors, the inspectors reviewed detector measurement geometry and calibration methods, and had the licensee demonstrate use of its instrument calibrator as applicable. The inspectors conducted comparison of instrument readings with an NRC survey instrument if problems were suspected.

As available, the inspectors selected portable survey instruments that did not meet acceptance criteria during calibration or source checks to assess whether the licensee had taken appropriate corrective action for instruments found significantly out of calibration (e.g., greater than 50 percent). The inspectors evaluated whether the licensee had evaluated the possible consequences of instrument use since the last successful calibration or source check.

b. Findings

Instrument Calibrator

a. Inspection Scope

As applicable, the inspectors reviewed the current output values for the licensee's portable survey and area radiation monitor instrument calibrator unit(s). The inspectors assessed whether the licensee periodically measures calibrator output over the range of the instruments used through measurements by ion chamber/electrometer.

The inspectors assessed whether the measuring devices had been calibrated by a facility using National Institute of Standards and Technology traceable sources and whether corrective factors for these measuring devices were properly applied by the licensee in its output verification.

b. Findings

No findings were identified.

Calibration and Check Sources

a. Inspection Scope

The inspectors reviewed the licensee's 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," source term to assess whether calibration sources used were representative of the types and energies of radiation encountered in the plant.

b. Findings

No findings were identified.

- .4 <u>Problem Identification and Resolution</u> (02.04)
- a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring instrumentation were being identified by the licensee at an appropriate threshold, and were properly addressed for resolution in the licensee's CAP. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involve radiation monitoring instrumentation.

b. Findings

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

- 4OA1 Performance Indicator Verification (71151)
 - .1 Unplanned Scrams per 7000 Critical Hours
 - a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams per 7000 Critical Hours performance indicator (PI) for Units 1 and 2 for the first quarter 2014 through the fourth quarter 2014. To determine the accuracy of the PI data reported for this period, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99–02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC Integrated Inspection Reports for the period to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine if any problems had been identified with the PI data collected or transmitted for this indicator, and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two unplanned scrams per 7000 critical hours samples as defined in IP 71151–05.

b. Findings

No findings were identified.

.2 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications PI for Units 1 and 2 for the first quarter 2014 through the fourth quarter 2014. To determine the accuracy of the PI data reported for this period, PI definitions and guidance contained in NEI 99–02 were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC Integrated Inspection Reports for the period to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine if any problems had been identified with the PI data collected or transmitted for this indicator, and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two unplanned scrams with complications samples as defined in IP 71151–05.

b. Findings

.3 Unplanned Transients per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Transients per 7000 Critical Hours PI for Units 1 and 2 for the first quarter 2014 through the fourth quarter 2014. To determine the accuracy of the PI data reported for this period, PI definitions and guidance contained in NEI 99–02 were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports, and NRC Integrated Inspection Reports for the period to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine if any problems had been identified with the PI data collected or transmitted for this indicator, and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two unplanned transients per 7000 critical hours samples as defined in IP 71151–05.

b. Findings

No findings were identified.

- .4 Drill/Exercise Performance
- a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise Performance (DEP) PI for the second quarter 2014 through the fourth quarter 2014. PI definitions and guidance contained in NEI 99–02 were used to determine the accuracy of the PI data reported for this period. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the DEP indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes, including procedural guidance on assessing opportunities for the PI, assessments of PI opportunities during pre-designated control room simulator training sessions, performance during the 2014 biennial exercise, and performance during other drills. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one DEP sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.5 <u>Emergency Response Organization Drill Participation</u>

a. Inspection Scope

The inspectors sampled licensee submittals for the ERO Drill Participation PI for the second quarter 2014 through the fourth quarter 2014. The PI definitions and guidance contained in NEI 99–02 were used to determine the accuracy of the PI data reported for this period. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant

procedures and NEI guidance. Specifically, the inspectors reviewed licensee records and processes, including procedural guidance on assessing opportunities for the PI, performance during the 2014 biennial exercise, and other drills, and revisions of the roster of personnel assigned to key ERO positions. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one ERO drill participation sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.6 <u>Alert and Notification System</u>

a. Inspection Scope

The inspectors sampled licensee submittals for the ANS PI for the second quarter 2014 through the fourth quarter 2014. The PI definitions and guidance contained in NEI 99–02 were used to determine the accuracy of the PI data reported for this period. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI and results of periodic ANS operability tests. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one ANS sample as defined in IP 71151–05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

- .1 Routine Review of Items Entered into the Corrective Action Program
- a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and

adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment to this report.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

- .2 Daily Corrective Action Program Reviews
- a. Inspection Scope

To assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

- .3 <u>Selected Issue Follow-Up Inspection: Operating Experience Smart Sample 2010–01</u> <u>"Recent Inspection Experience for Components Installed Beyond Vendor Recommended Service Life</u>"
- a. Inspection Scope

The inspectors selected NRC Operating Experience Smart Sample 2010–01, entitled "Recent Inspection Experience for Components Installed Beyond Vendor Recommended Service Life," to evaluate the applicability of this issue to LaSalle. Specifically, the inspectors reviewed pertinent CAP documents, reviewed component design, procurement, and maintenance records, and interviewed station personnel regarding this issue. In this review, the inspectors evaluated licensee activities to verify compliance with applicable regulations (e.g., 10 CFR 50, Appendix B, §50.65, etc.), and to verify that activities were performed in accordance with station CAP procedures. Documents reviewed are listed in the Attachment to this report.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152–05.

b. Findings

(Opened) Unresolved Item-Breakers Installed Beyond Design Life

<u>Introduction</u>: The inspectors identified a URI item related to the continued use of breakers beyond the vendor's original qualified design life. The inspectors could not resolve the discrepancy during the inspection period due to the need for additional information.

<u>Description</u>: Early in plant life, Westinghouse HFB breakers were installed in various systems onsite, including safety-related applications. The design life of these breakers was 20 years, according to Westinghouse. A portion of these breakers remained in-use at LaSalle and were installed more than 30 years ago. The licensee monitored breaker performance and tested these breakers routinely. Records show that failures of this type of breaker were researched and all of the previous failures at LaSalle have been attributed to manufacturing defects. While the lack of degradation-related failures for these breakers supported the disposition under the §50.65 Maintenance Rule, at this time, it is not clear that a lack of such failures provided adequate basis for an extension to the previously established design life. This issue is unresolved pending the inspectors' review of additional information regarding the details of the components' qualifications as noted in the original purchase order, in order for the inspectors to evaluate the acceptability of the licensee's current method of extending the life of the component (URI 05000373/2015001–04; 05000374/2015001–04, Breakers Installed Beyond Design Life).

- .4 <u>Selected Issue Follow-Up Inspection: Loss of Jet Pump Plug Seals during L2R15</u>
- a. Inspection Scope

As part of the overall review of the Unit 2 Jet Pump Plug issue, the inspectors reviewed the station's response to the loss of the foreign material from a CAP standpoint. Specifically, the inspectors reviewed pertinent CAP documents, monitored the station's activities relating to the follow-up evaluations and testing, attended meetings, and interviewed station personnel and management regarding this issue. In this review, the inspectors evaluated licensee response activities to verify compliance with applicable regulations (e.g., 10 CFR 50, Appendix B), and to verify that activities were performed in accordance with station CAP procedures. Documents reviewed are listed in the Attachment to this report.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152–05.

b. Findings

(Opened) Unresolved Item: Loss of Jet Pump Plug Seals during L2R15

<u>Introduction</u>: The inspectors identified a URI relating to the causal factors for the loss of the jet pump plugs in the Unit 2 reactor, and await the completion of the licensee's root cause evaluation to determine if any performance deficiencies exist.

<u>Description</u>: During Unit 2's most recent RFO, L2R15, maintenance was performed on normally unisolable sections of the reactor recirculation system. To facilitate this

maintenance, temporary seals were installed on the jet pumps inside the reactor vessel; however, three of the individual jet pump plug seals somehow became detached from the plug assemblies and were lost in the reactor.

The first seal was lost on February 8, 2015, from the plug at the jet pump number 5 location as documented in AR 02449326. A potential safety concern was later identified by licensee personnel on February 11, as documented in AR 02450949. This AR stated that the seals could potentially block reactor coolant flow to peripheral fuel bundles, potentially leading to TS Safety Limits being exceeded. Two additional seals were lost on February 18 from the plug at the jet pump number 14 location, as documented in AR 02455054. These three seals were not successfully retrieved from the reactor vessel and the unit was restarted on February 26 with the lost seals still in the reactor.

Unit 2 was held at approximately 22 percent power until March 15, 2015, when reactor recirculation pump speed was upshifted to reach approximately 50 percent power, and remained at this power level until March 25, when full power was achieved. These restrictions to power operation were to ensure that safety limits were not violated until testing and evaluation was completed to ensure the seals had degraded to a point that they would safely pass through the most limiting fuel support piece orifice.

At the time of this report, the licensee was conducting a root cause evaluation to determine the causal factors that led to the loss of the three plugs. This issue is considered a URI pending the inspectors' review of that root cause report to determine if a performance deficiency exists (URI 05000374/2015001-05 Loss of Jet Pump Plug Seals during L2R15).

.5 <u>Selected Issue Follow-Up Inspection: Unit 2 Failed Fuel Root Cause Analysis</u>

a. Inspection Scope

The inspectors reviewed root cause report 01734116, which documented the licensee's causal evaluation associated with fuel degradation experienced during a period of the Unit 2 cycle 15 operating cycle from 2013–2014. The inspectors selected this issue based on the recurrent history of fuel cladding degradation at LaSalle and because this particular occurrence necessitated a mid-cycle maintenance outage to remove the degraded fuel bundles. The licensee concluded that the primary root causes of the fuel degradation were inconclusive for two of the three failed fuel pins, and due to foreign material fretting for the third fuel pin. The licensee attributed the inconclusive failures to being likely due to either manufacturing defects or foreign material fretting. The inspectors reviewed this root cause report to assess the station's compliance with the applicable regulations and licensee CAP procedures. Documents reviewed are listed in the Attachment to this report.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152–05.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Interim Exit Meetings

Interim exits were conducted for:

- inspection results for the areas of radiological hazard assessment and exposure controls; and occupational ALARA planning and controls with Mr. H. Vinyard, Plant Manager, on February 6, 2015;
- results of the ISI inspection with Mr. P. Karaba, Site Vice-President, on February 13, 2015;
- inspection results for the area of radiation monitoring instrumentation with Mr. P. Karaba on March 20, 2015; and
- inspection results for the EP program with Mr. P. Karaba on March 27, 2015.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

40A7 Licensee-Identified Violation

The following violation of NRC requirements that was of very low safety significance (Severity Level IV) was identified by the licensee and meets the criteria of Section 2.3.2 of the NRC Enforcement Policy for being dispositioned as an NCV.

.1 Failure to Implement 10 CFR 50.72 and 50.73 Event Notification Requirement

Title 10 CFR 50.72(b)(3)(xiii) states, in part, a licensee shall report (notify the NRC as soon as practical, and in all cases within 8 hours of the occurrence) any event that results in a major loss of emergency assessment capability. Contrary to this requirement, on March 24, 2015, the licensee identified a failure to submit a report for the loss of emergency assessment capability when the site declared seismic monitoring instrumentation inoperable. Specifically, on January 28, 2015, the Instrument Maintenance Department discovered the seismic monitoring program on the seismic laptop computer in the auxiliary electrical equipment room was not running; thereby, preventing the seismic monitoring instrumentation from providing indications required for emergency assessment of a potential seismic event. The system degradation would have adversely impacted the site's ability to declare an ALERT Emergency Action Level in accordance with EP-AA-1005, "Radiological Emergency Plan Annex for LaSalle Station," in the event of an earthquake of sufficient magnitude. The licensee entered the issue into the CAP as AR 02473472, "Need to Assess Seismic Monitor Reportability," and conducted an extent of condition review for the prior 3-year period. The licensee identified a total of six times in which the seismic monitoring system experienced this degradation, and the licensee failed to submit an event report at the time, as required by 10 CFR 50.72(b)(3)xiii). Upon completion of the extent of condition review, the licensee initiated AR 02474658, "Emergency Notification System Notification Required for Past Seismic Monitor Inoperative," and submitted the required notification to the NRC on March 26, 2015, to restore compliance (Event Number 50926, "Seismic Monitor Not Available for Emergency Plan Assessment"). The inspectors determined that this issue had the potential to impact the regulatory process based, in part, on the generic communications input that 10 CFR 50.72 reports serve. Since the issue impacted the regulatory process, it was dispositioned through the Traditional Enforcement Process.

The inspectors determined that this issue was a Severity Level IV violation based upon Section 6.9, "Inaccurate and Incomplete Information or Failure to Make a Required Report," Example d.9 in the NRC Enforcement Policy. Example d.9 specifically states, "The licensee fails to make a report requirement by 10 CFR 50.72, or 10 CFR 50.73."

Because the issue was entered into the licensee's CAP (as AR 02473472 and AR 02474658), the violation is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

<u>Licensee</u>

- P. Karaba, Site Vice-President
- H. Vinyard, Plant Manager
- J. Kowalski, Engineering Manager
- K. Aleshire, Corporate Emergency Preparedness Manager
- V. Cwietniewicz, Corporate Emergency Preparedness Manager
- M. Jesse, Corporate Regulatory Assurance Manager
- G. Ford, Regulatory Assurance Manager
- J. Houston, Nuclear Oversight Manager
- J. Moser, Radiation Protection Manager
- M. Hayworth, Emergency Preparedness Manager
- G. Brumbelow, Emergency Preparedness Coordinator
- T. Dean, Operations Training Manager
- D. Wright, NRC Examination Coordinator
- L. Blunk, Regulatory Assurance
- S. Shields, Regulatory Assurance
- B. Hilton, Design Manager
- A. Baker, Dosimetry Specialist
- J. Bauer, Training Director
- T. Dean, Operations Training Manager
- J. Shields, Program Engineering Manager
- D. Anthony, Non-Destructive Examination
- B. Casey, Inservice Inspection

Nuclear Regulatory Commission

M. Kunowski, Chief, Reactor Projects Branch 5

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

<u>Opened</u>

05000373/2015001–01; 05000374/2015001–01	NCV	Liquid Penetrant Testing Procedure Was Not Qualified for Its Full Applicability Range (Section 1R08.1b.(1))
05000373/2015001–02; 05000374/2015001–02	NCV	Failure to Measure Interpass Temperature (Section 1R08.1b.(2))
05000374/2015001–03	URI	COLR Revision Potentially Created Non-Conservative Technical Specifications (Section 1R18.1.b)
05000373/2015001–04; 05000374/2015001–04	URI	Breakers Installed Beyond Design Life (Section 4OA2.3)
05000374/2015001–05	URI	Loss of Jet Pump Plug Seals during L2R15 (Section 4OA2.4)
<u>Closed</u>		
05000373/2015001–01; 05000374/2015001–01	NCV	Liquid Penetrant Testing Procedure Was Not Qualified for Its Full Applicability Range (Section R08.1b.(1))
05000373/2015001–02; 05000374/2015001–02	NCV	Failure to Measure Interpass Temperature (Section R08.1b.(2))

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector 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.

1R04 Equipment Alignment

Action Requests:

- 1606745; WR Required for Extent of Condition on RH (CSCS) Piping
- 2381332; 0DG HX Inspection Found Evidence of Bypass Flow
- 2381559; 0DG Heat Exchanger Maintenance
- 2381627; 0DG01A DG Heat Exchanger Does Not Have Appropriate Coating
- 2458079; WR Required for Extent of Condition Inspections CSCS Piping
- 2458084; WR Required for Extent of Condition Inspections CSCS Piping
- 2460815; 0 Diesel Generator Issues
- 2382989; 0DG01A HX Coating Repairs Needed
- 2382997; Common DG Cooler Leak from North Blank Flange
- 2383679; Lessons Learned from "0" Diesel Generator Work Window (MMD)
- 2383847; Update to LOP-DG-08M Valve Position After LOS-DG-SR5
- 1691601; Perform Eddy Current Testing In Upcoming 0DG HX Work Window
- 2384659; Unit 2 "A" DG Fuel Oil Storage Tank Low Level Alarm
- 2425069; 0 DG Cooler Leaking From North End
- 2443804; 0DG01A Diesel HX North Minor Flange Leaking
- 2444231; '0' DG Fuel Oil Storage Tank Low LVL Alarm During LOS-DG-M1

Figures and Drawings:

- M-83; P & ID Diesel Generator Auxiliary System; Rev. AF.
- M-83; P & ID Diesel Generator Auxiliary System; Rev. BB.
- M-132; P & ID Diesel Oil System; Rev. AC
- M-85; P & ID Diesel Oil System; Rev. AE
- M-87; P & ID Core Standby Cooling System Equipment Cooling Water System; Rev. AT
- M-87; P & ID Core Standby Cooling System Equipment Cooling Water System; Rev. O

Working Documents:

- WO 1346864-2; LMS-DO-01, 2A D/G Fuel Stor. TK Cleaning; dated March 27, 2015
- WO 1346864-17; LMS-DO-01, 2A D/G Fuel Stor. TK Cleaning; dated March 25, 2015
- WO 1583062-01; 0 DG Cooling Water System Flow Test; dated March 2, 2015

Engineering Evaluations:

- EC 395837; Evaluation of 2A DG Heat Exchanger Thermal Performance Data Using Alternate (EPRI) Methodology; Rev. 0
- EC 374750; IT-70000 Drawing for CSCS Cooler Outlet Throttle Valve Replacement Replace Globe Valves with Valves with Throttle Trim; Rev. 0

Miscellaneous:

- Equipment/Procedure Status List for 2A DG Day Tank Cleaning; undated

1R05 Fire Protection

Procedures:

- OP-AA-201-004; Fire Prevention For Hot Work; Rev. 12

Miscellaneous:

- LaSalle County Generating Station Pre-Fire Plan, Zone 3H2; RX Bldg. 694'6" Elev. U2 HPCS Cubicle
- LaSalle County Generating Station Pre-Fire Plan, Zone 2H2; RX Bldg. 694'6" Elev. U1 HPCS Cubicle
- LaSalle County Generating Station Pre-Fire Plan, Zone Area 1; RX Bldg. 843' 6" Elev. U1 & U2 Refuel Floor

1R07 Annual Heat Sink Performance

Working Documents:

- 1628657-01; (Finish) Eddy Current Test 2E12-B001B B RHR Heat Exchanger; dated August 12, 2014
- 1628657-09; (Finish) Eddy Current Test 2E12-B001B B RHR Heat Exchanger; dated February 6, 2015

Miscellaneous:

- AR 2425472; Check-In Self-Assessment, LaSalle Pre-NRC Triennial Heat Sink; dated January 28, 2015
- Generic Letter 89-13 Revised Response, Service Water System Problems; dated July 28, 1998

1R08 Inservice Inspection

Procedures:

- ER-AA-335-016; VT-3 Visual Examination Of Component Supports, Attachments and Interiors of Reactor Vessels; Rev. 9
- GEH-VT-205; Procedure for In-vessel Visual Inspection (IVVI) Of BWR 5 RPV Internals; Rev. 13
- GE-UT-605; Procedure For The Performance Of Straight Beam Examinations; Rev. 4
- ER-AA-335-003; Magnetic Particle (MT) Examination; Rev. 6
- ER-AA-335-004; Ultrasonic (UT) Measurement of Material Thickness and Interfering Conditions; Rev. 7
- GEH-PDI-UT2; PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds; Rev. 7
- ER-AA-335-002; Liquid Penetrant (PT) Examination; Rev. 8
- MA-MW-796-101; Welding, Brazing and Soldering Records; Rev. 5
- CC-AA-501-1011; Preheat, Interpass Temperature and Postweld Heat Treatment of Welds; Rev. 4
- WPS 1-1-GTSM-PWHT; Manual GTAW for P1-P1 Material; Rev. 2

Action Requests:

- 02451872; NRC Question Concerning PT Procedure Temperature Demo; dated February 12, 2015
- 02451583; NRC ID'd Interpass Temperatures not Monitored; dated February 12, 2015
- 02395673; Bonnet to Body Stud has is Rejectable VT-1 Indication; dated October 15, 2014

- 01621693; Indications Discovered in SRV Inlet Flange 1B21-F013U; dated February 15, 2014
- 01623306; RM INR L1R15 IVVI-1414; New Indication on Core Spray Bracket; dated February 19, 2014
- 01673158; Possible Bushing(s) Installed in the RPV Flanges(s); dated June 19, 2014
- 02451380; NRC ID'D No WR Generated for IR 1690483; dated February 12, 2015
- 01690483; Potential Safety Concern (Pipe Wall Thinness); dated August 8, 2014
- 01653867; Improper Documentation of Welder ID on ASME Weld Record Doc; dated April 30, 2014
- 02429128; Leak Identified at the Base of the Weld; dated December 23, 2014
- 01680970; Degradation Observed During Ultrasonic Inspection of WS Line; dated July 11, 2014

Working Documents:

- 386HA480; Certification of Nondestructive Test Personnel, Rev. 26
- Protocol PDI-UT-1; Table 1; Rev. 29
- Performance Demonstration Initiative Table 2; dated September 4, 2014
- L2R15-UT-004; UT Record for IMS-2051-17; dated February 3, 2015
- L2R15-UT-007; UT Record for IRH-205104-02; dated February 5, 2015
- L2R15-VT-003; MS04-2651C (IWA); dated February 4, 2015
- L2R15-VT-004; MS04-2876X (IWA); dated February 5, 2015
- WO 1646738; Install Structural Pad on Line 2RH83AB-20 Residual Heat Removal Service Water; dated June 3, 2013
- WO 1635334; Install Replacement Elbow in Line 2HP09A-6 HPCS; dated June 3, 2013
- 1R11 Licensed Operator Regualification Program

Procedures:

- OP-LA-101-111-1001; On-Shift Staffing Requirements; Rev. 9
- OP-AA-300; Reactivity management; Rev. 7
- OP-AB-300-1001; BWR Control Rod Movement Requirements
- OP-AB-300-1003; BWR Reactivity maneuver Guidance; Rev. 9

Working Documents:

- NF-AB-720-F-1; Control Rod Sequence Review and Approval Sheet; L1C16-r4.1a, Simplified Shutdown Sequence; dated December 15, 2014

1R13 Maintenance Risk Assessments and Emergent Work Control

Action Requests:

- 2449965; NRC Question on IR 2442599
- 728556; Atrium-10 Fuel Assembly Load Chain Failure Event at Chinshan
- 2440794; Chinshan Fuel Load Chain Failure

Calculations:

- L-003067, Letter WC84; Re-Analysis of Fuel Handling Accident (FHA) Using Alternative Source Terms; Rev. 2

Drawings:

- M-87; P & ID Core Standby Cooling System Equipment Cooling Water System; Rev. BG

Miscellaneous:

- 201515; LaSalle April 6th Work Week, Major Activities

1R15 Operability Determinations and Functional Assessments

See "Jet Pump Plug Issue" section below for list of documents reviewed for that issue. Procedures:

- LFP-100-1; Master Refuel Procedure; Rev. 57

Action Requests:

- 2429133; NRC ID: Request for HFB Breaker Operating History
- 2443161; 2A DG A Bank Air Press Switch Won't Reset On Its Own
- 2451812; 2DG05A Pipe Leak in "B" RHR Corner Room
- 1477954; Over Core Limit Switches Prevent Bridge Movement (L2R14 LL)
- 2451749; NRC Id'd UFSAR Refueling Interlocks
- 2440794; Chinshan Fuel Load Chain Failure

Figures and Drawings:

- M-2005-62; CS Equip Cooling Water; Rev. E
- M-134; P&ID CSCS Equipment Cooling Water System; Rev. AV
- M-101; P&ID Reactor Core Isolation Coolant (RCIC); Rev. BH

Calculations:

- L-003067, Letter WC84; Re-Analysis of Fuel Handling Accident (FHA) Using Alternative Source Terms; Rev. 2

Operability Evaluations:

- EC 396677; Minimum Wall Thickness for DG Piping Expansion Locations; Rev. 1
- EC 400686; Evaluation of Unit 2 Core Shroud Inspection Results from L2R15
- L-003119; Evaluation of the LaSalle Unit 2 Core Shroud Welds, EC 400686; Rev. 3

Miscellaneous:

- LSCS-UFSAR Table 7.7-7; Refueling Interlock Effectiveness; Rev. 19

1R18 Plant Modifications

See "Jet Pump Plug Issue" section below for list of documents reviewed for that issue.

Action Requests:

- 2436355; Temp Junction Box Alternate Installation

Figures and Drawings:

- M09-RH14-2832X; Hanger; EC 396060

Working Documents:

- WO 1786945; Remove/Replace Strut and Modify Support 2RH14-2832X; dated January 12, 2015

Miscellaneous:

- AWA 5, EC 396069, WO 1697196; U2 Flex Primary Strategy Electrical; Rev. 2
- Material Request 2703846; Gasket Sheet, 1/4 In.; dated January 16, 2014

1R19 Post-Maintenance Testing

Procedures:

- LOS-DG-203; 2B Diesel generator 2E22-S001, Start and Load Acceptance Surveillance; Rev. 11

Action Requests:

- 2449698; Bus 243 and 2B DG Tripped Unexpectedly
- 2474425; NRC Id'd Question on LaSalle Review of Byron OPEX

Working Documents:

- WO 1794320-01; LOS-CS-Q1 Sec Cont. VR Dampers; dated February 20, 2015
- WO 1806030-03; BUS 243 and 2B DG Tripped Unexpectedly; dated February 9, 2015
- WO 515534-01; Replace Old MSIV Stem/Disc with New Design; dated October 3, 2014
- WO 515534-07; Replace Old MSIV Stem/Disc with New Design; dated September 22, 2014
- WO 1714238-01; LOS-PC-Wq Att 1A: U-1 MSIV Operability and IST Inspections; dated October 17, 2014
- WO 515536-01; Replace Old MSIV Stem/Disc with New Design; dated October 6, 2014
- WO 515537-07; Replace Old MSIV Stem/Disc with New Design; dated September 22, 2014
- WO 515536-07; Replace Old MSIV Stem/Disc with New Design; dated September 22, 2014
- WO 1489395-01; Replace SBM Switch; dated January 14, 2015
- WO 1489395-02; Replace SBM Switch; dated March 23, 2015
- WO 1489395-03; Replace SBM Switch; dated March 23, 2015
- Tech Spec Surveillance, Unit #0, DG Idle Start LOS-DG-M1 AH0-Idle; dated March 31, 2015

Miscellaneous:

- B 3.6.4.2-1; Containment Systems, Secondary Containment Isolation Valves ; Rev. 0
- DG RPM Event, Frequency, Voltage, Initiation Signal Graphs; dated February 9, 2015
- WO 1806030-03; Task Completion Processing EM Troubleshoot BUS 243 and 2B DG Trip; dated February 13, 2015
- Tech Spec Surveillance; Unit 0, DG Idle Start LOS-DG-M1

1R20 Outage Activities

Procedures:

- LOP-AA-03; Reactor Mode Changes; Rev. 32
- LS-AA-119-1001; Fatigue Management; Rev. 3
- LS-AA-119; Fatigue Management and Work Hour Limits; Rev. 11
- LS-AA-119-1003; Calculating Work Hours; Rev. 3
- LS-AA-119-1004; Reviews and Reporting; Rev. 3

Action Requests:

- 2450019; NOS ID: Contaminated Staging Area Over Open Grating
- 2449412; PCE APM CRD Support
- 2449415; PCE APM CRD Support
- 2449416; PCE APM CRD Support
- 2449448; PCE APM Undervessel Worker
- 2448201; PCE APM Millwright Working on Diaphrams
- 2449350; PCE GE Undervessel Worker Unable to Exit RCA
- 2449055; Unit 2A RHR Room Elev 694 Contamination
- 2449022; Level 1 Personnel Contamination Event

- 2447688; Personnel Contamination Event
- 2448368; Personnel Contamination Event
- 2460449; NRC Closeout Inspection of U2 DW 807, 796 and 777
- 2460461; NRC Closeout Inspection of U2 DW 740
- 2446762; WHR Deviation
- 2446774; WHR Deviation
- 2446791; WHR Deviation
- 2446815; WHR Deviation
- 2450853; WHR Work Hour Rule Administrative Deviation
- 2450959; WHR Deviation
- 2457985; WHR Deviation
- 2452218; WHR Completed Fatigue Assessment -LS-AA-119-1101 Att. 1
- 2452456; WHR Work Hour Rule Administrative Deviation
- 2453994; WHR Work Hour Rule Administrative Deviation

Working Documents:

- L2C16-01; Reactivity Maneuver Plan, BOC Startup for Unit 2 Cycle 16; 2/20/2015
- OP-AA-108-108; Emergent Exceptions Checklist; 2/22/2015

Miscellaneous:

- Individual Work Hour Reports; dated February 2 21, 2015
- Work Hour Violations Report; dated February 18 25, 2015
- Reader Transaction History; dated February 1 21, 2015

1R22 Surveillance Testing

Procedures:

- LOS-RH-R2; Unit 2 ECCS Check Valve Reverse Flushing; Rev. 3

Working Documents:

- WO 1620242-01; Integrated Division I ECCS Response Time; dated February 17, 2015
- WO 1620118-01; LPCI PIV 2E12-F041A High Pressure Water Leak Test; dated February 13, 2015

Miscellaneous:

- WO 1795923-01; Tech Spec Surveillance; 2A Diesel Generator LOS-DG-M2 Att 2A-Idle; dated January 26, 2015

1EP2 Alert and Notification Evaluation

Procedures:

- EP-AA-1000; Exelon Nuclear Standardized Radiological Emergency Plan Section E; Rev. 26
- EP-AA-1005; Exelon Nuclear Radiological Emergency Plan Annex for LaSalle Station, Section 4; Rev. 38
- EP-AA-1005; Addendum 2; Evacuation Time Estimates for LaSalle County Generating Station Plume Exposure Pathway Emergency Plan; Rev. 01
- EP-AA-114; Notifications; Rev. 13

Action Reports:

- 1530864; Siren Did Not Alarm While Performing LOS-CQ-A1; dated June 30, 2013
- 1652672; EP Siren Failures; dated April 28, 2014
- 1666107; EP Siren Failure; dated May 30, 2014

- 1676032; EP Siren Failure; dated June 27, 2014
- 1676032; EP Siren Failure; dated June 27, 2014
- 1695625; EP Siren Failure; dated August 22, 2014
- 2059778; EP Siren Outage; dated September 8, 2014
- 2425371; EP Siren Failure; dated December 15, 2014
- 2474229; NRC ID: Recurrent PM Issue Identified with Four ANS Sirens; dated March 25, 2015

Miscellaneous:

- Emergency Planning for the LaSalle Area Important Safety Information for Your Community; 2014 to 2015
- LaSalle Monthly Siren Availability Reports; January 2013 December 2014
- LaSalle Plant Warning System Maintenance and Operational Report; March 12 -26, 2013
- LaSalle Plant Warning System Maintenance and Operational Report; March 26, 2014 – May 28, 2014
- Offsite Emergency Plan Prompt Alert and Notification System Addendum for the LaSalle Nuclear Power Station; May 2013
- Semi-Annual LaSalle Siren Reports; January 1 December 31, 2014
- Siren Daily Operability Reports; January 1, 2013 December 31, 2014

<u>1EP4</u> Emergency Action Level and Emergency Plan Changes

Procedures:

- EP-AA-112; Emergency Response Organization (ERO)/Emergency Response Facility (ERF) Activation and Operation; Rev. 17
- EP-AA-112-100-F-06; ERO Notification or Augmentation; Rev. Q
- EP-AA-113; Personnel Protective Actions; Rev. 11
- EP-AA-120; Emergency Plan Administration; Rev. 16
- EP-AA-130; 10 CFR 50 Appendix E, On-Shift Staffing Assessment; Rev. 1
- EP-AA-1000; Exelon Nuclear Standardized Radiological Emergency Plan, Sections B and N; Rev. 26
- EP-AA-1005, Addendum 1; LaSalle Station On-Shift Staffing Technical Basis; Rev. 1
- EP-AA-1005; Exelon Nuclear Radiological Emergency Plan Annex for LaSalle Station; Rev. 38
- TQ-AA-113; ERO Training and Qualification; Rev. 23

Miscellaneous:

- 2014 ERO Requalification Training PowerPoint Presentation
- ERO Training Records Initial and Requalification Training (29 ERO Personnel) LaSalle Station Emergency Response Organization Duty Team Rosters; dated March 21, 2015

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

Procedures:

- EP-AA-1005, Addendum 3; Emergency Action Levels for LaSalle Station; Rev. 3
- EP-AA-120-1006; EP Reportability-Loss of Emergency Preparedness Capabilities; Rev. 3
- EP-AA-120-F-05; Event Review Checklist; dated April 17, 2013
- EP-AA-120-F-05; Event Review Checklist; dated August 25, 2014
- Implementing Procedure Revisions; dated July 18, 2013
- Implementing Procedure Revisions; dated July 10, 2014
- Implementing Procedure Revisions; dated January 13, 2015
- LS-AA-1110; Safety (SAF), Section 1.10 Reportable Event SAF; Rev. 21

- NOSA-LSA-13-03; LaSalle Station Emergency Preparedness Audit Report; dated May 8, 2013
- NOSA-NCS-14-03; LaSalle Station Emergency Preparedness Audit Report; dated April 16, 2014
- PI-AA-120; Issue Identification and Screening Process; Rev. 2
- PI-AA-125; Corrective Action Program (CAP) Procedure; Rev. 2
- PI-AA-126; Self-Assessment and Benchmark Program; Rev. 0
- RS-13-192; Exelon Generation Company Standardized Radiological Emergency Plan
- RS-14-188; Exelon Generation Company Standardized Radiological Emergency Plan
- RS-15-037; Exelon Generation Company Standardized Radiological Emergency Plan

Action Reports:

- 1500817; Long Range Staffing Plan EP; dated April 11, 2013
- 1504866; Update to ENS Notification Performed; dated April 21, 2013
- 1505688; Failed Hard Drive on Blast Server Failed; dated April 18, 2013
- 1506134; EP: LAS Unusual Event OSC Team Tracking Process; dated April 24, 2013
- 1511049; EP: Failed Facility Objective H.3 for OSC; dated May 7, 2013
- 1518242; Ops Crew 6 April 17, 2013 LOOP Lessons Learned; dated May 27, 2013
- 1518552; EP: LAS LOOP April 17, 2013 EOF Equipment and Admin Issues; dated May 28, 2013
- 1529386; Everbridge Error Message and PCR; dated June26, 2013
- 1529644; Offsite Pager Did Not Receive ERO Test Page; dated April 27, 2013
- 1548594; NOS ID: EP PIIM Recommendation; dated August 30, 2013
- 1559781; Everbridge System Did Not Work as Expected During ERO Drill; dated September 7, 2013
- 1566925; EP Call in Drill: Two Duty Team Members Did Not Respond; dated October 2, 2013
- 1579642; NARS CODE "20" Series Non-Functional; dated November 1, 2013
- 1608343; Focused Area Self-Assessment 2014 NRC EP Exercise (LaSalle HAB); dated March 13, 2014
- 1634653; ERO Members Not Attending Muster; dated March 17, 2014
- 1696021; U-2 RB 807 Fire Alarm; dated August 25, 2014
- 1696662; Ops Fire Alarm Response 4.0 Critique; dated August 26, 2014
- 2382470; CPS OYE Exercise Objective E.3 Unsatisfactory; dated September 17, 2014
- 2382471; CPS OYE Exercise Objective E.3 & J.7 Unsatisfactory at EOF; dated September 17, 2014
- 2382474; CPS OYE Exercise Objective J.7 Unsatisfactory at EOF; dated September 17, 2014
- 2407936; Focused Area Self-Assessment Pre 2015 NRC EP Exercise (LaSalle HAB) dated March 13, 2014
- 2437478; Key ERO Members Incorrectly Given Participation Credit; dated January 1, 2015
- 2473472; Need to Assess Seismic Monitor Reportability; dated March 24, 2015
- 2474040; NRC ID'D No Figure 3 for Seismic Monitor Lesson Plan; dated March 25, 2015

Miscellaneous:

- December 4, 2014 Annual Offsite Agency Dinner Meeting Documentation; dated December 5, 2014
- Event Report 50926; Seismic Monitor Not Available for Emergency Plan Assessment; dated March 26, 2015
- Event Summary Report of Unusual Event Declared at the Exelon Nuclear, LaSalle County Generating Station; dated August 26, 2014.
- LaSalle 2013 Off-Year Exercise Evaluation Report; dated September 17, 2013
- LaSalle 2014 Pre-Exercise Evaluation Report; dated April 9,2014
- LaSalle County Generating Station, April 17, 2013, Unusual Event Report; dated May 31, 2013

- LaSalle Performance Indicator Drill Evaluation Reports; September 2013 through December 2014
- LaSalle Station Unusual Event Report from August 25, 2014; dated September 24, 2014
- Letters of Agreement for 2014; dated December 31, 2013
- Quarterly Unannounced Off-Hours Call-In Augmentation Drill Results; March 28, 2013 October 30, 2014

2RS1 Radiological Hazard Assessment and Exposure Controls

Procedures:

- RP-AA-460; Controls for High Radiation and Locked High Radiation Areas; Rev. 26
- RP-AA-46-001; Controls for Very High Radiation Areas; Rev. 5
- RP-AA-461; Radiological Controls for Contaminated Water Diving Operations; Rev. 5
- MA-AA-716-015; Control of Diving; Rev. 7
- RP-AA-401-1002; Radiological Risk Assessment; Rev. 6
- RP-AA-210; Dosimetry Issue, Usage, and Control; Rev. 25
- RP-AA-300-1001; Discrete Radioactive Particle Controls; Rev. 3
- RP-AA-400-1009; Remote Monitoring System; Rev. 1
- RP-LA-300-1003; Drywell Entry; Rev. 2

Miscellaneous:

- Radiation Work Permit and Associated ALARA Files; RWP Number 10016561; L2R15 Suppression Pool Diving and Contingency for Fuel Fragment/Pellet/Irradiated Component Recovery and Support Activities Inside the Suppression Chamber
- Radiation Work Permit and Associated ALARA Files; RWP Number 100165675: L2R15: Reactor Vessel Disassembly/Reassembly and Support Activities (including Cavity Support Work)
- Radiation Work Permit and Associated ALARA Files; RWP Number 10016576; L2R15: RFF Activities (No Cavity Work)
- Radiation Work Permit and Associated ALARA Files; RWP Number 10016577; L2R15: Reactor Cavity Work Platform Activities

2RS5 Radiation Monitoring Instrumentation (71124.05)

- Check-In Self-Assessment; 1325216; Power Lab Vendor Audit; dated December 15, 2012
- Check-In Self-Assessment; 1438890; Radiation Monitoring Instrumentation (71124.05); dated January 10, 2013
- Check-In Self-Assessment; RP Instrument Coordinator Knowledge Transfer and Retention (KT&R); dated October 30, 2013
- Check-In Self-Assessment; 1438890; Radiation Monitoring Instrumentation (71124.05); dated January 10, 2013
- Check-In Self-Assessment; 2407951; Radiation Monitoring Instrumentation (71124.05); dated January 7, 2015
- AR 00344792; Elimination of Calibrated M&TE Stop Watches; dated June 16, 2005
- AR 01541312; NOS ID Instrument Label Not Initialed Verifying Source Check; dated July 30, 2013
- AR 01542602; RP Instrument Not Tagged Out of Service with Deficiency Tag; dated August 2, 2013
- AR 01526168; RP share Instrument Indicator Yellow for 2 Months; dated June 18, 2013
- AR 02398622; Discrepancies Noted While Completing the Shepherd 89-30 Calibration; dated October 21, 2014

- AR 02469920; Shepherd 89-30 Decay Dates Not Correct on RP-AA-700-1209 Attachment 1 Annual Calibration Check; dated March 17, 2015
- AR 02471541; NRC ID: Friskers Failed Check; dated March 18, 2015
- AR 02471547; NRC ID: Instrument Caution Labels Not Used per RP-AA-700; dated March 18, 2015
- AR 02471548; NRC ID: Out of Tolerance Reports Not Completed per RP-AA-700; dated March 18, 2015
- AR 02471557; NRC ID: OJT Document References to RP-AA-700 Do Not Align; dated March 19, 2015
- AR 02471580; Shepherd Calibrator Calibration; dated March 17, 2015
- AR 02471208; NRC ID: Chemistry QC Chart Data not in Chronological Order; dated March 19, 2015
- RP-AA-700; Controls for Radiation Protection Instrumentation; Revision 3
- RP-AA-700-1209; Calibration of Shepherd Box Irradiators; Revision 0
- RP-AA-700-1209; Attachment 1; Annual Calibration Check; Date Not Provided
- RP-LA-801; Calibration of Radioactive Sources for Use as Certified Calibration Standards; Revision 1
- RP-AA-605; Attachment 2; Waste Stream Results Review; Waste Stream DAW; dated February 17, 2015
- RP-AA-605; Attachment 2; Waste Stream Results Review; Waste Stream Bead Resin Secondary; dated February 17, 2015
- RP-AA-605; Attachment 2; Waste Stream Results Review; Waste Stream Bead Resin Primary; dated February 17, 2015
- CY-AA-130-201; Radiochemistry Quality Control; Revision 2
- WO 01610865 01; Post Accident Division 1 Containment Gross Gamma Radiation Monitor Calibration; dated January 29, 2015
- RP-AA-700-1301; Calibration, Source Check, Operation and Set-Up of the Eberline Beta Air Monitor AMS-4; Revision 1
- Certificate of Calibration; AMS-4; Equipment # 00135797; dated January 22, 2013
- Certificate of Calibration; AMS-4; Equipment # 76436; dated December 16, 2013
- RP-AA-700-1304; Operation and Calibration of the Ram Gam; Revision 1
- Certificate of Calibration; Ram Gam; Equipment # 079918; dated January 5, 2014
- RP-AA-700-1305; Operation and Calibration of the AMP-100/200; Revision 1
- Certificate of Calibration; AMP-200; Equipment # 072611; dated February 14, 2015
- Certificate of Calibration; AMP-100; Equipment # 0010588; dated February 14, 2015
- RP-AA-700-1303; Bicron Micro-REM Survey Meter; Revision 0
- Certificate of Calibration; Bicron Micro-REM; Equipment # 0014508; dated December 11, 2014
- RP-AA-700-1239; Operation and Calibration of the Model SAM-12 Small Articles Monitor; Revision 1;
- RP-AA-700-1239; Attachment 2; SAM-12 Calibration Data Sheet; SAM Serial Number 1205SAM12088; dated January 31, 2014
- RP-AA-700-1239; Attachment 2; SAM-12 Calibration Data Sheet; SAM Serial Number 92; dated August 18, 2014
- RP-AA-700-1401; Operation and Calibration of Eberline Model PM-7 Personnel Contamination Monitor; Revision 1
- RP-AA-700-1401; Attachment 3; Calibration Data Sheet; PM-7 Portal Monitor; Portal Monitor Instrument # 113; dated January 27, 2014
- RP-AA-700-1401; Attachment 3; Calibration Data Sheet; PM-7 Portal Monitor; Portal Monitor Instrument # 343; dated June 4, 2014

- RP-AA-700-1501; Operation and Calibration of the Model SAM-9/11 Small Articles Monitor; Revision 1
- RP-AA-700-1501; Attachment 3; SAM Calibration Data Sheet; SAM ID# 107; dated January 16, 2014
- RP-AA-700-1240; Operation and Calibration of the Canberra ARGOS-5 Personnel Contamination Monitor; Revision 2
- RP-AA-700-1240; Attachment 1; ARGOS-5 Calibration Data Sheet; Monitor Number 1012-297; dated March 6, 2014
- RP-AA-700-1235; Operation and Calibration of the PM-12 Gamma Portal Monitor; Revision 1
- RP-AA-700-1235; Attachment 3; PM-12 Calibration Data Sheet; PM Serial Number 8; dated May 28, 2014
- RP-AA-700-1235; Attachment 3; PM-12 Calibration Data Sheet; PM Serial Number 55; dated March 21, 2014
- RP-AA-700-1215; Calibration of Low-Vol Air Samplers; Revision 1
- RP-AA-1215; Attachment 5; Calibration Data Sheet; RADēCO HD-29/A; Instrument Serial Number 6363; dated January 9, 2015
- RP-AA-1216; Calibration of Hi-Vol Air Samplers; Revision 2
- RP-AA-1216 Attachment 1; RADēCO H-809V, H-809V-1 H-809-V-II Calibration Data Sheet; RADēCO Serial Number 7580; dated February 6, 2015
- RP-AA-700-1212; Operation and Calibration of the CM-11 with Dual Probe Type DP11A; Revision 1
- RP-AA-700-1212; Attachment 1; CM-11 Calibration Data Sheet; CM-11 Serial Number 229; dated October 30, 2014

4OA1 Performance Indicator Verification

Procedures:

- EP-AA-125-1002; Drill and Exercise Performance Data; dated April 2014-December 2014
- EP-AA-125-1003; Key ERO Participation and Stability Monthly Data; dated April 2014 December 2014
- LS-AA-2110; Monthly Data Elements for ERO Drill Participation; dated April 2014 December 2014
- LS-AA-2120; Monthly Data Elements for NRC Drill/Exercise Performance; dated April 2014 December 2014
- LS-AA-2130; Monthly Data Elements for NRC ANS Reliability; dated April 2014 December 2014

Miscellaneous:

- Monthly Data Elements for NRC/WANO Unit/Reactor Shutdown Occurrences; 2014
- Monthly Data Elements for NRC Unplanned Power Changes per 7000 Critical Hours, 2014
- LaSalle Monthly Siren Availability Reports; dated April 2014 December 2014

4OA2 Identification and Resolution of Problems

See "Jet Pump Plug Issue" section below for list of documents reviewed for that issue.

Procedures:

- ER-AA-200; Preventive maintenance Program; Rev. 1

Action Requests:

- 2424612; PM Deferral Not Technically Justified Need PHC Approval

Action Requests Generated from NRC or IEMA Inspection:

- 2435305 IEMA Identified Water Tight Door #4 Lower Hinge Pin Wear
- 2451749; NRC Id'd UFSAR Refueling Interlocks
- 2463984; NRC Questions on JP Plug 50.59S and Operability Evaluations
- 2460281; NRC Id'd Question on 50.59 for S15-03 and LOA-RR-201
- 2474425; NRC Id'd Question on LaSalle Review of Byron OPEX
- 2488696; Cyber: NRC Request for Additional Info on IR 2486746
- 2485587; NRC Id'd Observation on DG Air Start Oiler

Working Documents:

- 2422592-03; Work Not Performed: LES-GM-130 112Y CB-12; dated December 10, 2014
- 1341405-01; Perform LES-GM-130 for 2H13P604 & 211Y CB-12 (2DC11E); dated February 4, 2014
- 950002946-01; Perform Breaker Inspection per LES-GM-130; dated January 12, 1995

Miscellaneous:

- EQ-LS-37; Systems Control, 250 VDC Motor Control Center; Rev. 08
- TB-14-2; Westinghouse Technical Bulletin Aging Issues and Subsequent Operating Issues for Molded Case Circuit Breakers; dated May 13, 2014
- LTR-NRC-06-47; Westinghouse Letter, Westinghouse Motor Control Center (MCC) Breakers; dated August 8, 2006
- AT 2429133-03; Evaluation: Justifying Continued Use of Westinghouse HFB Breakers for Greater than 20-year Service Life; dated January 30, 2015
- Purchase Order 186455; Commonwealth Edison to System Control Corporation for Relays, including updates to order; dated November 13, 1975

Jet Pump Plug Issue

Procedures:

- OP-AA-108-115; Operability Determinations (CM-1); Rev. 15

Action Requests:

- 2463984; NRC Questions on JP Plug 50.59S and Operability Evaluations
- 2460855; U-2 RWCU Bottom Head Drain Flow Indicates Low
- 2450946; Potential Safety concern Fuel bundle Flow Blockage
- 2449326; FME J/P Plug Seal Missing
- 2455054; L2R15 FME RX JP Plug 14 Seals Missing During Removal
- Clinton 2459913 OIO. LaSalle Jet Pump Plug Lost Seals
- 2465245; Incorrect Vendor Drawing in Controlled Documents
- 2450946; Potential Safety Concern Fuel Bundle Flow Blockage
- 2460837; Decision Making for U2 Lost JP Plugs Prior to RX Re-Assembly
- 2460281; NRC Id'd Question on 50.59 for S15-03 and LOA-RR-201

Figures and Drawings:

- 131C8015; Orificed Fuel Support; Rev. C

Working Documents:

- WO 1747359-03; RXS- Install / Remove "B" Loop Jet Pump Plugs OPCC MR90; 1/22/2015
- EC 400989; Unit Two Standing Order L2R15 Lost Parts Evaluation Limitations for L2C16 Operation, Log 15-3; Rev. 0 Effective February 25, 2015, Rev. 1 Effective March 6, 2015

- L2C16SM-Upshift; Special Maneuver Rod Move Sheet

Engineering Evaluations:

- 50.59 L15-47; Evaluation of Fuel Licensing Impact of Lost Jet Pump Plug Seals in Primary System; Rev. 0
- Dresden 3, EC 391519; Cumulative Effects of Foreign Material on the Dresden Unit 3 Reactor Vessel and Connected Systems D3R22; Rev. 0
- EC 375883; Measurement Uncertainty Recovery (MUR) Power Uprate; Rev. 0
- EC 397122; Lost Parts Evaluation Miscellaneous Material During L1R15; Rev. 0
- EC 400019; Lost Parts Evaluation for L2R15; Revs. 001, 002, 003 and 004
- EC 400989; Lost Parts Evaluation Miscellaneous Parts from L2R15; Revs. 0 and 2
- EC 401299; Potential for Jet Pump Plug Seal to Block Fuel Support Orifice During Power Ascension; Rev. 0
- EC 401294; Supplemental Evaluation to LaSalle 2 Cycle 16 Lost Parts Eval; Rev. 0
- EC 401347; LaSalle Unit 2 Cycle 16 Cycle Management FCP; Rev. 0
- OE 15-001; Degraded Condition Due to jet pump Plug Seals Left in Reactor, ECS 401294, 4013467, IRs 2468496, 2449326, 2450946, 2455054; Rev. 0

Miscellaneous:

- 1101-2.4-002; Contech, Inc., Exelon Contract 00544205; Observation of Testing Performed at ONRL; dated March 10, 2015
- 50.59 Review L15-47; Evaluation of Fuel Licensing Impact of Lost Jet Pump Plug Seals in Primary System; Rev. 4
- Call Summary of Discussion; Purpose: Determine how 3 Lost Jet Pump Plugs will Respond when Subjected to Expected Conditions within RPV, Dow Chemical/Exelon; *undated*
- COLR LaSalle 2; Core Operating Limits Report for LaSalle Unit 2 Cycle 16 Revision 1; Rev. 11
- Comparison of Fuel Guard and Defender Fuel Debris Filter, Phot GNF Defender Filter
- Email from R. Simoneau (Preferred Mfg.) to R. Ralph (Exelon); LaSalle JP Plug; dated February 10, 2015
- Exelon Special All Hands Meeting, L2R15 Successes and Jet Pump Plugs; dated March 6, 2015
- GE Hitachi 2N5076; LaSalle County Nuclear Power Station, Unit 2 Cycle 16 Jet Pump Plug Seal Thermal Hydraulic Evaluation; Revs. 0, 1, and 3
- GE Hitachi 2N5420; LaSalle Unit 2 Cycle 16 Stability Analysis for Jet Pump Plug Lost Part, T. Schweitzer; Rev. 1
- IRs 2450949, 244932, 2455054; Adverse Condition Monitoring and Contingency Plan, L2C16 Jet Pump Seal Pad; Rev. 1
- LSCS 4.2-34; UFSAR Fuel Rod Behavior Effects from Coolant Flow Blockage; Rev. 20
- NEDO-10174; Licensing Topical Report: Consequences of a Postulated Flow Blockage Incident in a Boiling Water Reactor; Rev. 1
- NEI 96-07, Final Draft; Guidelines for 10 CFR 50.59 Evaluations; Rev. 1
- NEO 807, GE Nuclear Energy Table 3-5; Local Loss Factors, Coefficients and Diameters; Rev. 4/88
- Oak Ridge National Lab; Data Report: Neutron Activation Analysis of EPDM Rubber; dated March 10, 2015
- PE-P5227A; Preferred engineering, Jet Pump Plug Installation / Removal and maintenance Procedure for LaSalle Station Under Project PE -4-1124, Exelon PO 76373; Rev. 0
- Transients and Lost Parts Analysis Position / NF-AB-130-3760; Rev. 5
- PORC 15-008; Exelon Generation PORC, Topics: Lost Jet Pump Plug Seals; dated February 27, 2015

- LSCS-UFSAR 15.C-1; AREVA Evaluations of Measurement Uncertainty Recapture (MUR) Uprate; Rev. 19
- 10 CFR 50.46 Letter from Exelon to NRC, Annual 10 CFR 50.46 Report of Emergency Core Cooling System Evaluation Model Changes and Errors for LaSalle County Station; dated March 6, 2015
- Core Parameters Data, LaSalle-2, Cycle 16, Sequence 4; dated March 2, 2015

LIST OF ACRONYMS USED

ADAMS ADS ALARA ANS AR ASME CAP CFR COLR CSCS DEP DG DGCW	Agencywide Documents Access Management System Automatic Depressurization System As-Low-As-Is-Reasonably-Achievable Alert and Notification System Action Request American Society of Mechanical Engineers Corrective Action Program Code of Federal Regulations Core Operating Limits Report Core Standby Cooling System Drill and Exercise Performance Diesel Generator Diesel Generator Cooling Water
EC	Engineering Change
ECCS	Emergency Core Cooling System
EN EP	Event Notification Emergency Preparedness
ERO	Emergency Response Organization
GTAW	Gas Tungsten Arc Welding
HPCS	High Pressure Core Spray
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Issue Report
ISI IVVI	Inservice Inspection In-Vessel Visual Inspection
LCO	Limiting Condition for Operation
LPRM	Local Power Range Monitors
MCPR	Minimum Critical Power Ratio
MT	Magnetic Particle Examination
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OOS OSP	Out-of-Service Outage Safety Plan
PARS	Publicly Available Records System
PI	Performance Indicator
PMT	Post-Maintenance Testing
PT	Liquid Penetrant Test
RFF	Refuel Floor
RFO	Refueling Outage
RHR RP	Residual Heat Removal Radiation Protection
RPV	Radiation Protection Reactor Pressure Vessel
RTP	Rated Thermal Power
RWP	Radiation Work Permit
SDP	Significance Determination Process
SRV	Safety Relief Valve

SSC	Structure, System, and Component
TIP	Traversing Incore Probe
TBV	Turbine Bypass Valve
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
UT	Ultrasonic Examination
VT	Visual Examination
WO	Work Order
WPS	Welding Procedure Specification

B. Hanson

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 System (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <u>http://www.nrc.gov/reading</u>rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael Kunowski, Chief Branch 5 Division of Reactor Projects

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

Enclosure:

IR 05000373/2015001; 05000374/202015001 w/Attachment: Supplemental Information

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