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

December 6, 2013

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Co., LLC
President and Chief Nuclear Officer, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2; NRC COMPONENT DESIGN BASES INSPECTION REPORT 05000373/2013008; 05000374/2013008

Dear Mr. Pacilio:

On November 22, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed a Component Design Bases Inspection (CDBI) at your LaSalle Count Station, Units 1 and 2. The enclosed report documents the inspection findings, which were discussed on November 22, 2013, with Mr. H. Vinyard and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, two NRC-identified findings of very low safety significance were identified. The findings involved violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your Corrective Action Program, the NRC is treating the issues as Non-Cited Violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the subject or severity of any NCV you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector office at the LaSalle County Station. In addition, if you disagree with the cross-cutting aspect assigned to any finding 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.

In accordance with Title 10, *Code of Federal Regulations* (CFR), Section 2.390 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 Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Benny Jose, Acting Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure: Inspection Report 05000373/2013008; 05000374/2013008
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ™

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-373 and 50-374
License Nos:	NPF-11 and NPF-18
Report No:	05000373/2013008; 05000374/2013008
Licensee:	Exelon Generation Company, LLC
Facility:	LaSalle County Station, Units 1 and 2
Location:	Marseilles, IL
Dates:	September 23, 2013 through November 22, 2013
Inspectors:	R. Langstaff, Senior Reactor Inspector, Lead H. Campbell, Mechanical Contractor J. Corujo-Sandin, Reactor Engineer A. Dahbur, Senior Reactor Engineer A. Della Greca, Electrical Contractor N. Féliz Adorno, Reactor Engineer I. Hafeez, Reactor Inspector D. Reeser, Operations Engineer
Approved by:	B. Jose, Acting Chief Engineering Branch 2 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000373/2013008; 05000374/2013008; 09/23/2013 - 11/22/2013; LaSalle County Station, Units 1 and 2; Component Design Bases Inspection (CDBI).

This report covers an announced CDBI baseline inspection. The inspection was conducted by Region III inspectors and NRC contractors. Two findings were identified by the inspectors. The findings were considered Non-Cited Violations (NCVs) of NRC regulations. The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Cross-cutting aspects were determined using IMC 0310, "Components Within the Cross Cutting Areas." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated June 7, 2012. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the failure to use instrumentation that met the data collection requirements of America Society of Mechanical Engineers Operation and Maintenance Code. Specifically, the licensee did not maintain the pressure instruments used during pump comprehensive in-service testing within the required Code accuracy limits. This finding was entered into the licensee's Corrective Action Program to evaluate operability of the affected pumps and revise the calibration procedures of the affected instruments to reflect the Code accuracy requirements.

  The performance deficiency was determined to be more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, inaccurate test instrumentation could reasonably result in an unrecognized degraded condition of safety equipment. In addition, recent test results required to be reanalyzed taking into account the actual as-left calibration data of the instruments to ensure the affected safety pumps remained operable. The finding screened as of very low safety significance (Green) because it did not result in loss of operability or functionality of mitigating systems. Specifically, the licensee reviewed recent as-found in-service test (IST) calibration data of the affected pumps, adjusted the as-found IST collected data using the actual calibration data, and reasonably determined the applicable IST acceptance criteria were met. In addition, the finding example associated with the spent fuel pool cooling did not result in actual adverse spent fuel pool conditions such as excessive temperatures, fuel clad damage, and inadequate water inventory. The inspectors did not identify a cross-cutting aspect associated with this finding because it did not reflect current performance due to the age of the performance deficiency. (Section 1R21.3.b(1))

- Green. The inspectors identified a finding of very low safety significance (Green) and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure that 5 percent battery margin would be maintained for station blackout (SBO). Specifically, the capacity value used for an acceptance criterion

by the battery test procedure did not ensure that battery capacity was sufficient to maintain the required 5 percent remaining battery margin through the next surveillance test. This finding was entered into the licensee's Corrective Action Program. The licensee planned to revise their battery test procedure to ensure the required 5 percent margin would be maintained.

The finding was determined to be more than minor because, if left uncorrected, it would become a more significant safety concern. Specifically, the battery performance test procedure criteria would not ensure that the batteries retained sufficient margin to support SBO loads through the next scheduled surveillance test. The finding screened as of very low safety significance (Green) because it did not result in loss of operability or functionality of mitigating systems. Specifically, the most recent test results showed that the capacity of the battery was sufficient to supply the calculated load demands under SBO conditions at the time of this inspection. The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution, operating experience because the licensee did not properly evaluate relevant operating experience, i.e., NRC Information Notice 2013-05, "Battery Expected Life and its Potential Impact on Surveillance Requirements." [P.2(a)] (Section 1R21.3.b(2)).

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R21 Component Design Bases Inspection (71111.21)

.1 Introduction

The objective of the Component Design Bases Inspection is to verify the design bases have been correctly implemented for the selected risk-significant components and the operating procedures, and operator actions are consistent with design and licensing bases. As plants age, their design bases may be difficult to determine and an important design feature may be altered or disabled during a modification. The Probabilistic Risk-Assessment (PRA) model assumes the capability of safety systems and components to perform their intended safety function successfully. This inspectable area verifies aspects of the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for which there are no indicators to measure performance.

Specific documents reviewed during the inspection are listed in the Attachment to the report.

.2 Inspection Sample Selection Process

The inspectors used information contained in the licensee's PRA and the Prairie Island Nuclear Generating Plant's Standardized Plant Analysis Risk (SPAR) model to identify three scenarios to use as the basis for component selection. The scenarios selected were Anticipated Transient Without SCRAM (ATWS), internal reactor building flooding, and duel unit loss of off-site power (LOOP). Based on these scenarios, a number of risk-significant components were selected for the inspection.

The inspectors also used additional component information such as a margin assessment in the selection process. This design margin assessment considered original design reductions caused by design modifications, power uprates, or reductions due to degraded material condition. Equipment reliability issues were also considered in the selection of components for detailed review. These included items such as performance test results, significant corrective actions, repeated maintenance activities, Maintenance Rule (a)(1) status, components requiring an operability evaluation, NRC resident inspector input of problem areas/equipment, and system health reports. Consideration was also given to the uniqueness and complexity of the design, operating experience, and the available defense in depth margins. A summary of the reviews performed and the specific inspection findings identified are included in the following sections of the report.

The inspectors also identified procedures and modifications associated with the selected components. In addition, the inspectors selected operating experience issues associated with the selected components.

This inspection constituted 24 samples (17 components, 2 components associated with large early release frequencies and 5 operating experience) as defined in IP 71111.21-05.

.3 Component Design

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TS) design basis documents (DBDs), drawings, calculations, and other available design basis information, to determine the performance requirements of the selected components. The inspectors used applicable industry standards, such as the American Society of Mechanical Engineers (ASME) Code, Institute of Electrical and Electronics Engineers (IEEE) Standards and the National Electric Code, to evaluate acceptability of the systems' design. The inspectors also evaluated licensee actions, if any, taken in response to NRC issued operating experience, such as Bulletins and Information Notices (INs). The review was to verify the selected components would function as designed when required and support proper operation of the associated systems. The attributes needed for a component to perform its required function include process medium, energy sources, control systems, operator actions, and heat removal. The attributes to verify the component condition and tested capability was consistent with the design bases and was appropriate may include installed configuration, system operation, detailed design, system testing, equipment and environmental qualification, equipment protection, component inputs and outputs, operating experience, and component degradation.

For each of the components selected, the inspectors reviewed the maintenance history, preventive maintenance activities, system health reports, operating experience related information, vendor manuals, electrical and mechanical drawings, and licensee's Corrective Action Program (CAP) documents. Field walkdowns were conducted for all accessible components to assess material condition and to verify the as-built condition was consistent with the design. Other attributes reviewed are included as part of the scope for each individual component.

The following 19 components (inspection samples) were reviewed:

- Unit 1 Division 1 Residual Heat Removal Service Water Pumps (1E12-C300A/B): The inspectors reviewed the system hydraulic calculations such as net positive suction head (NPSH) and minimum required flow to ensure the pumps were capable of providing their function and design basis were consistent with the instructions provided by applicable procedures. In addition, the inspectors reviewed completed surveillance tests to confirm the acceptance criteria and test results demonstrated the capability of the pump to provide required flow rates. In-service test (IST) results were reviewed to assess potential component degradation and impact on design margins. Design change history, corrective actions, surveillance results, and trending data were reviewed to assess potential component degradation and impact on design margins. The inspectors performed visual non-intrusive inspections to assess the installation configuration, material condition, and potential vulnerability to hazards including internal flooding. Calculations and procedures were reviewed to ensure the availability of water supply. In addition, the inspectors reviewed the circuit breaker control schematic diagrams to confirm pump operation conformed to design requirements and operating procedures. The inspectors also verified the control circuit was adequately protected and sufficient control voltage was available for circuit breaker operation under limiting conditions. The inspectors reviewed system flow diagrams to evaluate instrumentation associated with pump operation.

- Unit 1 Division 1 Residual Heat Removal Service Water Strainer (1E12-D300A): The inspectors reviewed system hydraulic calculations to ensure the strainer effects were appropriately considered. In addition, the inspectors verified operating and alarm response procedures were consistent with design basis information. Corrective actions were reviewed to assess potential component degradation and impact on design margins. The inspectors performed visual non-intrusive inspections to assess the installation configuration, material condition, and potential vulnerability to hazards. In addition, the inspectors reviewed control schematic diagrams to ensure strainer operation was consistent with operating procedures and design basis information. The inspectors also verified the circuit was adequately protected. The inspectors reviewed logic test procedures and recent test results to ensure the reliability and capabilities of the control components.

- Unit 1 Division 1 Residual Heat Removal Heat Exchanger (1E12-B001A): The inspectors reviewed calculations that determined the flow requirements for the heat exchanger and maximum number of tube circuits that can be plugged while maintaining the ability to remove the design basis cooling load. Design change history, corrective actions, surveillance results, and trending data were reviewed to assess potential component degradation and impact on design margins. The inspectors performed visual non-intrusive inspections to assess the installation configuration, material condition, and potential vulnerability to hazards including internal flooding.

- Unit 1, Division 1, "A" Residual Heat Removal Room Cooler 1VY-01A and Ventilation Fan 1VY-01C: In addition to the UFSAR and TS, the inspectors reviewed the ventilation lesson plan to identify the functional requirements of the RHR room cooler and ventilation fan, (1VY-01A and -01C, respectively). The inspectors reviewed thermal performance calculations of the room cooler to ensure that the design heat removal capabilities, at the maximum cooling water temperature, could be satisfied. Completed surveillance test results of both the air-side and water-side of the room cooler were reviewed by the inspectors and compared against the margins obtained in the thermal analyses. The inspectors reviewed the control schematic diagrams to confirm that the operation of fan conformed to design requirements and operating procedures. The review included an evaluation of the instrumentation used for the auto operation of the fan, including power supply, as applicable.

- Unit 1, Division 3, High Pressure Core Spray Pump (1E22-C001): In addition to the UFSAR and TS, the inspectors reviewed piping and instrumentation diagram, pump line up and the vendor supplied pump curve. Further, the inspectors reviewed calculations that support the design basis functional requirements of the high pressure core spray (HPCS) pump identified in the TS and UFSAR. Included in the review were pump NPSH, run out and related hydraulic calculations for the HPCS pump in different operational modes addressed in emergency operating procedures (EOPs) and station blackout (SBO) procedures. The original General Electric Process Diagram was also reviewed, and the stated HPCS pump flows were compared to current operating procedures and calculations; no significant differences were identified. Further, the original pump minimum flow values were found to be in agreement with the NRC Bulletin 88-04, regarding low flow pump protection. Calculations related to TS surveillance requirements and instrument and measurement uncertainties for both the HPCS pump and its associated minimum flow valve (1E22-F012) surveillances were also reviewed to ensure that adequate

tolerances were incorporated into the procedures. Further, completed work orders for TS HPCS pump and minimum flow valve operability were also reviewed. The inspectors reviewed the control logic and control schematic diagrams to confirm that the controls and interlocks were consistent with the design-basis performance requirements and operating procedures. Additionally the inspectors evaluated the circuit breaker control voltage and protection to ensure that the circuit breaker could be operated on demand. The inspectors also reviewed the logic test procedure and the results of the last completed logic testing to ensure that the reliability and capabilities of the control components were adequately verified. Finally, the inspectors interviewed the HPCS pump system engineer and undertook a walkdown of the HPCS pump to ensure that the design was being maintained and that the material condition of the system was satisfactory.

- Unit 1, Division 1, Standby Liquid Control System Pump (1C41-C001A): The inspectors reviewed system hydraulic calculations such as NPSH and minimum flow required to ensure the pump was capable of providing its accident mitigating function. The inspectors also verified operating procedures were consistent with design basis information. Design change history, corrective actions, surveillance results, and trending data were reviewed to assess potential component degradation and impact on design margins. The inspectors performed visual non-intrusive inspections to assess the installation configuration, material condition, and potential vulnerability to hazards. In addition, the inspectors reviewed control logic diagrams to ensure pump operation was consistent with design requirements and operating procedures. The inspectors reviewed logic test procedures and recent test results to ensure the reliability and capabilities of the control components.

- Unit 1, Division 1, Standby Liquid Control System Tank Heat Tracing: The inspectors reviewed applicable sections of the UFSAR and Technical Specification to determine the design requirements of the standby liquid control storage tank heating requirements. The inspectors reviewed control schematics for the heaters provided and the available instrumentation to assure that the temperature of the sodium pentaborate solution is maintained above its saturation temperature.

- Unit 1, Division 1, Standby Liquid Control Explosive Injection Valve (1C41-F004A): The inspectors reviewed applicable sections of the UFSAR and Technical Specification to determine the design requirements of the standby liquid control system. The inspectors reviewed control logic diagrams to confirm that the operation of the explosive injection valve was consistent with the design requirements and operating procedures. The inspectors also reviewed the logic test procedure and the results of the last completed logic testing to ensure that the reliability and capabilities of the control components were adequately verified. The inspectors reviewed a listing of recent Action Requests (ARs) to confirm the capability of the valve to perform required functions.

- Unit 1 SBLC Tank (1C41-A001): The inspectors reviewed boron injection volume and tank level setpoint calculations to assess the tank capacity. The boron concentration limits were reviewed to ensure they were consistent with applicable design documents. The inspectors also reviewed structural calculations to assess the structural integrity of the tank and assessed the ability to control solution temperature to ensure the ability to inject when required. Design change history, corrective actions, surveillance results, and trending data were reviewed to assess

potential component degradation. The inspectors performed visual non-intrusive inspections to assess the installation configuration, material condition, and potential vulnerability to hazards.

- Unit 1, Division 1, 4kV (kilovolt) Safety-Related Bus (141Y) (1AP04E): The inspectors reviewed the design of the degraded voltage protection scheme to determine whether it afforded adequate voltage to safety related devices at all voltage distribution levels. The inspectors reviewed the overcurrent protection scheme for the 4.16kV buses including drawings and calculations to determine whether loads were adequately protected and immune from spurious tripping. The team reviewed 125 Vdc (volts direct current) system voltage drop calculations to determine whether 4.16kV bus circuit breakers had adequate control voltage. The inspectors reviewed maintenance schedules and procedures for the 4.16kV bus and its associated circuit breakers to determine whether the equipment was being properly maintained. This included reviewing acceptance criteria in procedures for consistency with vendor recommendations and design calculations. The inspectors reviewed corrective action documents and maintenance records to determine whether there were any adverse operating trends. In addition, the inspectors performed a visual inspection of the 4.16kV safety buses to assess material condition and the presence of hazards. The inspectors reviewed control logics and wiring diagrams of the supply breakers to confirm that automatic transfers between the normal and alternate sources could be accomplished under postulated conditions as described in the UFSAR and in accordance with operating procedures. The review included verification that loss of voltage relays initiated emergency diesel generator starting sequence and that paralleling of redundant sources was not allowed. The inspectors also verified that adequate voltage was available to the control circuits for the proper closing and tripping of circuit breakers.

- Unit 1, Division 1, 120Vdc Safety-Related Battery (1DC07E): The inspectors reviewed applicable sections of the UFSAR, TS, and Safety Evaluation Reports (SERs) to determine the battery design requirements and licensing commitments. The inspectors also reviewed the battery sizing calculation to verify the capability of the battery to support momentary and continuous loading for the duration of the duty cycle during accident conditions and SBO. The voltage drop calculation was also reviewed to confirm the capability of the battery to supply adequate voltage to the loads under limiting conditions for the duration of the duty cycle. The inspectors reviewed the battery testing procedures and the results of recent tests to verify that periodic tests conformed to the TS requirements and industry standards. The review also confirmed that the inter-cell resistance was maintained sufficiently low to have minimal impact on the voltage drop calculations. The inspectors reviewed the system health report, maintenance activities, and recent ARs to verify the current capability of the Division 1 direct current (DC) source to support system functions.

- Unit 1, Division 1, 120Vdc Battery Charger (1DC09E): The inspectors reviewed applicable sections of the UFSAR and TS to determine the battery chargers sizing requirements and licensing commitments. The inspectors also reviewed the battery charger sizing calculation to confirm its capability to maintain the battery in a charged state and to recharge the battery in a timely manner following a loss of offsite power event. The battery charger testing procedures and recent test results were reviewed to confirm that testing conformed to the TS requirements and that test results supported design requirements. The inspectors reviewed a sample of recent

incident reports to confirm the capability of the battery charger to support system demands.

- Unit 1, Division 1, 120Vdc Safety-Related Bus (111Y) (1DC11E): The inspectors reviewed the Division 1 DC system loading and short circuit calculation to determine maximum anticipated bus loading and available short circuit current under faulted conditions. The inspectors also reviewed the bus, breaker, and cable ratings to confirm their capability to carry maximum loading and interrupt maximum faulted conditions. The inspectors reviewed cable separation design to confirm compliance with single failure and 10 CFR Part 50, Appendix R criteria. Breaker coordination was also reviewed to ensure that overloads and faulted conditions were properly interrupted. The inspectors reviewed recent ARs to evaluate the current capability of the bus to support design requirements.

- 138/345kV Switchyard/Auxiliary Transformer 142: The inspectors reviewed 138kV Switchyard grounding system design standards and calculations. The inspectors reviewed maintenance schedules, vendor recommendations, and procedures to determine whether the auxiliary transformers were being properly maintained. The inspectors reviewed protective relaying schemes and calculations to determine whether the transformer was adequately protected and whether it was susceptible to spurious tripping. The inspectors reviewed maintenance and corrective action histories to determine whether there have been any adverse operating trends. In addition, the inspectors performed a walkdown of the installed equipment to determine whether the installed configuration is consistent with design documents including drawings, and calculations, and to assess the presence of hazards.

- Unit 1 Drywell Pressure Switch (1C71-N002A): In addition to the UFSAR and TS, the inspectors reviewed lesson plans and training materials to identify the design features and functional requirements of the drywell pressure switch 1C71-N002A. The inspectors reviewed the original vendor range and accuracy specifications of the switch to ensure that design requirements could be satisfied. Instrument setpoint and uncertainty calculations were reviewed to ensure that adequate margin against the TS required value was available. Further, the inspectors reviewed a completed TS surveillance for this instrument to verify that the testing demonstrated acceptable performance of the pressure switch.

- Unit 1 Drywell Air Temperature Recorder (1TR-CM037B): In addition to the UFSAR and TS, the inspectors reviewed the lesson plans and training materials to identify the design features and functional requirements of the drywell temperature recorders. Note that there are four thermocouples located in four separate quadrants in the drywell that provide signals to four recorder channels (two per division), one of which is 1TR-CM037B. Instrument setpoint and uncertainty calculations for entire temperature loops were reviewed to ensure that the instruments were capable of performing their safety related functions, specifically that of evaluating the setpoint for the Drywell Temperature High Alarm and associated margin. Further, the inspectors reviewed a completed TS surveillance for this instrument to verify that the testing demonstrated acceptable performance of the drywell temperature recorder.

- Unit 1, Division 3 Emergency Diesel Generator 1B Engine: In addition to the UFSAR and TS the inspectors reviewed the Emergency Diesel Generator (EDG) training

plan and associated training materials to identify the design features and functional requirements of the HPCS support diesel generator engine. The inspectors reviewed calculations that evaluated the fuel oil storage and day tank capacities in addition to the elevation calculation for the fuel oil tanks; the elevation evaluation had as a focus physical tank elevations and allowance for fuel density differences. Fuel oil setpoint calculations and associated completed surveillance procedures were also reviewed to ensure that the fuel supply subsystems of the diesel engine were adequately verified. The inspectors reviewed control logic and schematic diagrams to confirm that the operation of the HPCS diesel engine conformed to the operating procedures and the UFSAR description. The review included start sequence, governor control, engine lubrication, starting air, and fuel priming. The inspectors also verified that the control circuit was adequately protected and that adequate control voltage was available for the operation of the circuit components under limiting conditions. Finally, the inspectors interviewed the EDG system engineer and undertook a thorough walkdown of the HPCS diesel to ensure that the design was being maintained and that the material condition of the system was satisfactory.

- Unit 1, Division 3,EDG Controls: EDG Control Panel (1E22-P301B): The inspectors reviewed applicable sections of the UFSAR and Technical Specification to determine the design requirements of the HPCS diesel generator. The inspectors reviewed the diesel generator control functions. The review included source and capabilities of control power, diesel starting sequence, diesel and generator speed and voltage control, local controls for diesel starting, circuit breaker closing, and manual synchronizing of diesel generator to offsite alternating current (AC) system, available instrumentation to monitor diesel generator performance and to control operation of the system components locally. The inspectors addressed support systems, such as starting air, diesel generator cooling and lubrication, and fuel priming. In addition, the inspectors reviewed the logic test procedure and the results of the last completed logic testing to ensure that the reliability and capabilities of the control components were adequately verified.

- Unit 1 Division 3 Diesel Generator Cooling Water (DGCW) Pump (1E22-C002): The inspectors reviewed the system hydraulic calculations such as NPSH and minimum required flow to ensure the pumps were capable of providing their function and design basis were consistent with the instructions provided by applicable procedures. In addition, the inspectors reviewed completed surveillance tests to confirm the acceptance criteria and test results demonstrated the capability of the pump to provide required flow rates. In-service test results were reviewed to assess potential component degradation and impact on design margins. Design change history, corrective actions, surveillance results, and trending data were reviewed to assess potential component degradation and impact on design margins. The inspectors performed visual non-intrusive inspections to assess the installation configuration, material condition, and potential vulnerability to hazards including internal flooding. Calculations and procedures were reviewed to ensure the availability of water supply. In addition, the inspectors reviewed control logic and schematic diagrams to ensure pump operation was consistent with design requirements and operating procedures. The inspectors reviewed logic test procedures and recent test results to ensure the reliability and capabilities of the control components.

b. Findings

(1) Pump Test Instruments Were Not Maintained Within Required Accuracy Limits:

Introduction: A finding of very low safety significance and associated Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," was identified by the inspectors for the failure to use instrumentation that met the data collection requirements of ASME Operation and Maintenance (OM) Code. Specifically, the licensee did not maintain the pressure instruments used during pump comprehensive IST within the required ASME OM Code accuracy limits.

Description: The licensee used the 2001 Edition of the ASME OM Code for the IST interval in effect during this inspection. Section ISTB-3500, "Data Collection," of the Code stated that instrument accuracy shall be within the limits of Table ISTB-3500-1, "Required Instrument Accuracy." This table required an accuracy of plus/minus (±) 0.5 percent for pressure and differential pressure instruments used during pump comprehensive tests. In addition, ISTB-3500 stated that for individual analog instruments, the required accuracy was percent of full scale. However, the inspectors noted the licensee did not calibrate the IST pressure instruments of the RHRSW and DGCW pumps in accordance with this limit. Specifically, although the manufacturer's published accuracy was ±0.5 percent of full scale for these instruments, the licensee calibrated them to an allowable accuracy of ±1 percent of full scale.

The licensee captured the inspectors' concerns in their CAP as AR 01575421. The licensee performed an extent of condition and discovered the incorrect allowable calibration tolerance was applied to the IST pressure instruments of approximately 31 pumps including low pressure core spray (LPCS), HPCS, RHR, fuel pool cooling (FPC) emergency makeup, and SBLC pumps. As an immediate corrective action, the licensee reviewed recent as-found IST calibration data and determined the actual calibration data of the instruments associated with 13 of these pumps did not meet Code requirements. The 13 nonconforming pumps were associated with the RHRSW, LPCS, RHR, DGCW, and FPC emergency makeup systems. The licensee reasonably determined these pumps remained operable by adjusting the as-found IST collected data using the as-found calibration data and determining the applicable IST acceptance criteria were met. The licensee's corrective action planned at the time of this inspection to restore compliance was to revise the calibration procedures of the affected instruments to reflect ASME OM Code accuracy requirements.

Analysis: The inspectors determined the failure to use IST instrumentation that met ASME OM Code data collection requirements for instrument accuracy was contrary to 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," and was a performance deficiency. The performance deficiency was determined to be more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, inaccurate test instrumentation could reasonably result in an unrecognized degraded condition of safety equipment. In addition, recent test results required to be reanalyzed taking into account the actual as-left calibration data of the instruments to ensure the affected safety-related pumps remained operable. This finding was primarily associated with the Mitigating Systems cornerstone, but also affected the Barrier Integrity cornerstone.

The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination

Process," Attachment 0609.04, "Initial Characterization of Findings." Because the finding impacted the Mitigating Systems cornerstone, the inspectors screened the finding through IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," using Exhibit 2, "Mitigating Systems Screening Questions." The finding screened as of very low safety significance (Green) because it did not result in loss of operability or functionality. Specifically, the licensee reviewed recent as-found IST calibration data of the affected pumps, adjusted the as-found IST collected data using the actual calibration data, and reasonably determined the applicable IST acceptance criteria were met. Because the finding also impacted the Barrier Integrity cornerstone, the inspectors also screened the finding through IMC 0609 Appendix A, Exhibit 3, "Barrier Integrity Screening Questions." The finding screened as of very low safety significance (Green) because it did not result in actual adverse spent fuel pool conditions such as excessive temperatures, fuel clad damage, and inadequate water inventory.

The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency. Specifically, the licensee incorrectly established the calibration allowance for the IST instruments more than three years ago.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," requires, in part, that test procedures shall include provisions for assuring adequate test instrumentation is available and used. The requirements for IST instrument accuracy are governed by the ASME OM Code. The licensee used the 2001 Edition of the ASME OM Code for the IST interval in effect during this inspection.

Contrary to the above, as of October 23, 2013, the licensee failed to include provisions in test procedures to assure adequate test instrumentation was available and used. Specifically, pump IST procedures relied on instrumentation that did not meet the instrument accuracy requirements of the ASME OM Code, 2001 Edition.

The licensee is still evaluating its planned corrective actions. However, the inspectors determined that the continued non-compliance does not present an immediate safety concern because the licensee reasonably determined the applicable IST acceptance criteria were met during recent tests of the affected pumps.

Because this violation was of very low safety significance and was entered into the licensee's corrective action program as AR 01575421, this violation is being treated as a Non-Cited Violation, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000373/2013008-01; 05000374/2013008-01, Pump Test Instruments Were Not Maintained Within Required Accuracy Limits).

(2) Failure to Ensure Battery Margin Maintained for SBO:

Introduction: The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure that 5 percent battery margin would be maintained for SBO. Specifically, the capacity value used for an acceptance criterion by the battery test procedure did not ensure that battery capacity was sufficient to maintain the required 5 percent remaining battery margin through the next surveillance test.

Description: Section 15.9.3.2 of the UFSAR stated that battery sizing was calculated using the methodology of standard IEEE-485, "IEEE Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications." IEEE-485 recommended that a 10 percent to 15 percent design margin be added to the calculated cell sizes to allow for additional loads and less than optimal operating conditions. IEEE-485 also recommended that an aging factor of 1.25 be applied for battery sizing to ensure that batteries are capable of meeting their design load throughout their service life. The batteries were sized with a 1.15 design margin factor and a 1.25 aging factor providing for an additional 5 percent design margin based on the loads for a loss of coolant accident (LOCA) concurrent with a LOOP, i.e., a LOOP-LOCA event.

For a postulated SBO event, battery loads were greater than the LOOP-LOCA loads. The installed battery capacity would not provide a 5 percent margin when a 1.25 aging factor was used. By letter dated October 3, 1997, the licensee requested a clarification to the SER for SBO to permit use of an aging factor less than 1.25. By letters dated October 3, 1997 and May 28, 1997, the licensee committed to maintain a minimum of 5 percent remaining margin in battery capacity for SBO. These commitments to maintain a 5 percent remaining margin were reflected in the "Supplemental Safety Evaluation of the LaSalle County Station Response to the Station Blackout Rule," dated December 4, 1997, which formed part of the design and licensing basis for meeting the requirements of 10 CFR 50.63, "Loss of all alternating current power." Section 15.9.3.2 of the UFSAR stated that a calculation was performed to ensure that the batteries have a minimum remaining margin of 5 percent to meet the station blackout loads for four hours. The licensee, by calculation L-003447, "LaSalle Units 1 and 2, 125Vdc System Analysis," revision 0, determined that the 5 percent margin would be maintained using a 1.0 design margin combined with a 1.01 aging factor.

Battery performance testing to ensure the 5 percent remaining battery margin was maintained was accomplished by performance of procedure LES-DC-718, "Unit 1(2) Division 1 Battery Modified Performance Test," Revision 3, dated November 16, 2012. Section 3.2.12 of procedure LES-DC-718 specified that "If capacity of battery is determined to be <99 percent of manufacturers rating for 1DC07E or <91 percent of manufacturers rating for 2DC07E, the IR [issue report] shall be written and engineering notified to evaluate acceptability of battery capacity." However, the inspectors determined that the 99 percent value used for the Unit 1, Division 1 battery, battery 1DC07E, provided only 4.8 percent margin. The 99 percent capacity value used for an acceptance criterion by procedure LES-DC-718 did not ensure that battery capacity was sufficient to maintain the 5 percent remaining battery margin specified by the December 4, 1997, SER for an SBO event at the time of testing let alone ensure that sufficient margin would be maintained through the next surveillance. The licensee did not have other tests or procedures which would ensure that the 5 percent margin would be maintained through the next surveillance test.

In response to the inspectors' concerns, the licensee initiated AR 01576330, "CDBI Issue – Battery Performance Testing Acceptance Criteria," dated October 24, 2013. The licensee verified that there were no operability issues at the time of the inspection. The licensee planned to determine the best method to ensure that the battery SBO service life is not exceeded between battery performance tests and to revise test procedures accordingly.

Analysis: The inspectors determined that the failure to ensure that 5 percent battery margin would be maintained for SBO was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and was a performance deficiency. Specifically, the 99 percent capacity value used for acceptance criteria by procedure LES-DC-718 did not ensure that battery capacity was sufficient to maintain the required 5 percent remaining battery margin through the next surveillance test.

The finding was determined to be more than minor because, if left uncorrected, it would become a more significant safety concern. Specifically, the battery performance test procedure acceptance criteria would not ensure that the batteries retained sufficient margin to support SBO loads through the next scheduled surveillance test. The inspectors concluded this finding was associated with the Mitigating Systems Cornerstone.

The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings." Because the finding impacted the Mitigating Systems cornerstone, the inspectors screened the finding through IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," using Exhibit 2, "Mitigating Systems Screening Questions." The finding screened as of very low safety significance (Green) because it did not result in loss of operability or functionality. Specifically, recent test results, i.e., Work Order 01142197-01, dated February 18, 2010, showed that the capacity of the battery was 107.6 percent of the rated capacity and sufficient to supply the calculated load demands under SBO conditions at the time of this inspection.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution, operating experience because the licensee did not properly evaluate relevant operating experience, i.e., NRC Information Notice 2013-05, "Battery Expected Life and its Potential Impact on Surveillance Requirements." Specifically, Information Notice 2013-05 discussed the impact of loading and reduced aging factors on determining battery expected service life and associated impact on battery performance test intervals. [P.2(a)]

Enforcement: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Supplemental SER dated December 4, 1997, which was part of the design basis, specified that the licensee maintain 5 percent remaining battery margin for SBO.

Contrary to the above, from November 16, 2012 through October 25, 2013, the licensee failed to assure that applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the capacity value used for an acceptance criterion by procedure LES-DC-718 did not ensure that battery capacity was sufficient to maintain the 5 percent remaining battery margin through the next surveillance test.

This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's corrective action program as AR 01576330. The licensee planned to revise their battery test procedure to ensure the required 5 percent margin would be

maintained. (NCV 05000373/2013008-02; 05000374/2013008-02, Failure to Ensure Battery Margin Maintained for Station Blackout).

.4 Operating Experience

a. Inspection Scope

The inspectors reviewed 5 operating experience issues (inspection samples) to ensure NRC generic concerns were adequately evaluated and addressed by the licensee. The issues listed below were reviewed as part of this inspection:

- NRC Bulletin 88-04, "Potential Safety-Related Pump Loss;"
- NRC Information Notice 91-12, "Potential Loss of NPSH of SBLC Pumps;"
- NRC Information Notice 2001-13, "Inadequate SBLC System Relief Valve Margin;"
- NRC Information Notice 2012-03, "Design Vulnerability In Electric Power System;" and
- NRC Information Notice 2013-05, "Battery Expected Life and its Potential Impact on Surveillance Requirements"

b. Findings

No findings were identified.

.5 Operating Procedure Accident Scenario Reviews

a. Inspection Scope

The inspectors performed a detailed review of the operator actions and the procedures listed below associated with the selected scenarios of (1) an ATWS, (2) Internal Flooding in the Reactor Building, and (3) Dual Unit LOOP. The procedures listed below were evaluated to determine: if there was sufficient information to perform the procedure and achieve the desired result; whether the steps could reasonably be performed in the available time; and whether the necessary tools and equipment were available. The procedures were compared to Updated Final Safety Analysis Report (UFSAR) and design assumptions. Additionally, the Emergency Operating Procedures (LGA-0## series) listed below, and associated Plant Specific Technical Guidelines, were evaluated against the Boiling Water Reactor Owners Group (BWROG) Emergency Procedure Guidelines (EPGs) to ensure that any deviations from the BWROG EPGs are properly documented with an appropriate technical justification. A simulator scenario involving an ATWS was observed to assess the adequacy of associated emergency operating and related support procedures. The in-plant actions, associated the Emergency Containment Venting procedure, were walked down with a non-licensed operator to assess the ability to perform the procedure during a loss of AC power.

The following operator actions were reviewed:

- Operator actions to control reactor power, reactor pressure vessel pressure, and reactor pressure vessel water level during an ATWS;

- Operator actions to locate and isolate sources of flooding in the Reactor Building; and
- Operator actions for Emergency Venting the Primary Containment to maintain Primary Containment below the Primary Containment Pressure Limit.

The following procedures were reviewed:

- LGA-001, RPV Control;
- LGA-002, Secondary Containment Control;
- LGA-003, Primary Containment Control;
- LGA-010, Failure to SCRAM;
- LGA-NB-01, Alternate Rod Insertion;
- LGA-RT-103 (203), Alternate Boron Injection using RWCU (Reactor Water Clean-Up);
- LGA-SC-101 (201), Initiation of Standby Liquid Control;
- LGA-VQ-02, Emergency Containment Venting; and
- LOA-FLD-001, Flooding

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.1 Review of Items Entered Into the CAP

a. Inspection Scope

The inspectors reviewed a sample of the selected component problems that were identified by the licensee and entered into the CAP. The inspectors reviewed these issues to verify an appropriate threshold for identifying issues and to evaluate the effectiveness of corrective actions related to design issues. In addition, corrective action documents written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of the problem into the CAP. The specific corrective action documents that were sampled and reviewed by the inspectors are listed in the Attachment to this report.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On November 22, 2013, the inspectors conducted a final exit of the inspection results with Mr. H. Vinyard, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. Several documents reviewed by the inspectors were considered proprietary information and were either returned to the licensee or handled in accordance with NRC policy on proprietary information.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

P. Karaba, Site Vice-President
H. Vinyard, Plant Manager
G. Ford, Manager, Regulatory Assurance
P. Hansett, Online Manager, Work Management
W. Hilton, Senior Manager, Design Engineering
J. Houston, Manager, Nuclear Oversight
J. Keenan, Shift Operating Superintendent, Operations
J. Kowalski, Director, Engineering
J. Miller, Senior Manager, Plant Engineering
A. Schierer, Plant Engineering
S. Shields, Regulatory Assurance
S. Tanton, Design Engineering
W. Trafton, Director, Operations
J. Van Fleet, Engineering Response Manager, Design Engineering

Nuclear Regulatory Commission

B. Jose, Acting Branch Chief, Engineering Branch 2

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000373/2013008-01; 05000374/2013008-01	NCV	Pump Test Instruments Were Not Maintained Within Required Accuracy Limits (Section 1R21.3.b(1))
05000373/2013008-02; 05000374/2013008-02	NCV	Failure to Ensure Battery Margin Maintained for Station Blackout (Section 1R21.3.b(2))

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections of 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.

CALCULATIONS

Number	Description or Title	Date or Revision
ATD-0070	Limiting Operating Conditions for Net Positive Suction Head (NPSH) for HPCS, LPCS, RCIC & RHR Pumps	002C
CID-MISC-04	Recalibration of ECCS Flow Elements	0
DCR 990758	Revise NED-I-EIC-0178 to Incorporate Results of 24 Month Drift Analysis into Total Loop Uncertainties	March 7, 2000
DCR 990833	Revise NED-I-EIC-0260 to Incorporate Results of 24 Month Drift Analysis into Total Loop Uncertainties	March 7, 2000
DO-6	Elevation diesel Fuel Oil Tanks, (ECR 374810, Addressing ULSD Fuel Oil)	001
EAD-4	Relay Setting for 4.16Kv Safety Related Buses	2
EC 387271	Revise Calculation L-003447	000
L-001197	HPCS Pump Discharge Flow Indication Accuracy During Surveillance Testing Under Normal Conditions	0
L-002080	Calculation of the HPCS, LPCS and LPCI Min Flow for Input to LOCA-ECCS Calculations	0
L-002772	Calculation of Alarm Setpoint for Drywell Temperature High Alarms	0
L-002850	High Pressure Core Spray (HPCS) Motor Operated Valve (MOV) Differential Pressure Calculation	000
L-002851	High Pressure Core Spray (HPCS) Motor Operated Valve (MOV) Design Basis Document	000
L-002900	Validation of the Division 3 HPCS Diesel Oil Storage & Day Tank Volumes	
L-003354	ECCS and RCIC Pumps NPSH Road Map Calculation	001A
L-003418	Emergency Diesel Generator Fuel Oil Setpoints	00A
NED-I-EIC-0178	Primary Containment High Pressure Switch Setpoint Error Analysis	0
NED-I-EIC-0197	HPCS Discharge Pressure Min Flow Bypass and LPCS and LPCI Discharge Pressure ADS Permissive Error Analysis	3
NED-I-EIC-0198	HPCS, LPCS and LPCI Discharge Min Flow Bypass Differential Pressure Switch Setpoint Error Analysis	3A
NED-I-EIC-0259	Suppression Chamber Water Temperature Indication Loop Error Analysis	1
NED-I-EIC-0260	Suppression Chamber Wide Range Water Level Indication Error Analysis	0

CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED DURING INSPECTION

Number	Description or Title	Date or Revision
01563181	CDBI: Nut Backed Off on Engine-to-Skid Stud on 1B DG	September 24, 2013
01563401	CDBI – Heat Loads Omitted From Analyses VY-5 and VY-6	September 25, 2013
01563857	CDBI: Wrong Design Spec 22A2908AK Rev Used in EC 353491	September 26, 2013
01563986	CDBI: Bent Rod on Hanger OWF12-0030R	September 26, 2013
01564561	CDBI – Outdated Reference Rev. in UFSAR Sec. 15.8.1	September 27, 2013
01566710	CDBI – UFSAR Section Inconsistent with Plant Decision	October 2, 2013
01566739	CDBI: SBO Reactor Level Indicator 1C61-R010 Not in Passport	October 2, 2013
01567379	CDBI: NRC Identified Lack of an IR Written for Inst OOT	October 3, 2013
01567737	CDBI – Administrative Error in Calculation L-001197, Rev 00	October 4, 2013
01569709	CDBI: Re System Maintenance Rule Bases Document Revision	October 9, 2013
01570033	CDBI – Error in Design Analysis NED-I-EIC-0198	October 9, 2013
01570038	NRC ID'D (CDBI): Procedure Enhancements for CSCS Bypass Line	October 9, 2013
01573919	CDBI – Battery Capacity Calc L-003447 for SBO Loads	October 18, 2013
01575138	CDBI – Error on Drawing 1E-1-4000DK	October 22, 2013
01575421	CDBI – IST Instrument Accuracy	October 22, 2013
01575853	CDBI – LGA Support Ladder key Discrepancy	October 23, 2013
01576080	CDBI Issue: 4kV Brk PMS Extended Inadequate SR Documentation	October 24, 2013
01576106	CDBI – 125 Vdc Battery Technical Specification Values	October 24, 2013
01576273	CDBI – Battery Capacity Calculation L-0003447 for SBO	October 24, 2013
01576330	CDBI Issue – Battery Performance Testing Acceptance Criteria	October 24, 2013
01576358	CDBI – PSTG Update Required	October 24, 2013
01576359	CDBI – LGA-VQ-02 Update	October 24, 2013
01576737	CDBI Issue: Battery Charger Lock Up at Prairie Island	October 25, 2013
01577502	CDBI Documentation Enhancement for Instrument Uncertainty	October 28, 2013

CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED

Number	Description or Title	Date or Revision
00663202	DC System CDBI Walkdown Observations	August 21, 2007
00663209	DC System CDBI Walkdown Observations	August 21, 2007
00788748	LOS-DC-MS Surveillance Issues	June 20, 2008
01019471	Summary of Recent SBLC Relief Valve Issues	January 21, 2010
01048026	1DC09E Acrid Odor when Restarting Charger After Maintenance	March 25, 2010
01093133	Software Control Issues Require Investigation	June 21, 2010
01156233	Power Supply Failures Investigation	December 28, 2010
01334197	ACB 1413 Wiring Deficiency During OAD Testing – EC380788	February 29, 2012
01386221	Unexpected CR Alarm – 1PM001J-A409 125VDC Ground Division I	July 7, 2012
01528566	NOD ID: Omitted or Insufficient Info in Calc L-003447	June 24, 2012
01529569	Drawing Discrepancies Found while Revising LES-GM-113	June 27, 2013
01544276	2FP04JA Has No Power	August 7, 2013

DRAWINGS

Number	Description or Title	Date or Revision
1E-0-4412AA	Schematic Diagram 4160 Switchgear 141Y Diesel Generator “0” Feed ACB 1413 System “DG” Part 1	AD
1E-0-4412AB	Schematic Diagram 4160 Switchgear 241Y (2AP04E) Diesel Generator “0” Feed ACB 2413 System “DG” Part 2	AB
1E-0-4412AF	Schematic Diagram 4160 Diesel Generator “0” Generator/ Engine Control System “DG” Part 6	V
1E-0-4412AH	Schematic Diagram 4160 Diesel Generator “0” Generator/ Engine Control System “DG” Part 8	R
1E-0-4412AJ	Schematic Diagram 4160 Diesel Generator “0” Generator/ Engine Control System “DG” Part 9	W
1E-1-4000A	Single Line Diagram, Part 2, Standby Generators and 4160V Buses	N
1E-1-4000AK	Key Diagram, 4160V AC Switchgear 141Y (1AP04E)	B
1E-1-4000AN	Key Diagram, 4160V AC Switchgear 143	B
1E-1-4000BN	Key Diagram, 480V Switchgear 135X	C
1E-1-4000BP	Key Diagram, 480V Switchgear 135Y	F
1E-1-4000CT	Key Diagram, 480V Motor Control Centers 135X-1 (1AP71E) and 135X-2 (1AP72E)	AJ
1E-1-4000CU	Key Diagram, Reactor 480V AC MCC 135X-3	P
1E-1-4000CV	Key Diagram, Reactor 480V AC MCC 135Y-2	Z
1E-1-4000CW	Key Diagram, Reactor 480V AC MCC 136X-2 (1AP80E)	S

DRAWINGS

Number	Description or Title	Date or Revision
1E-1-4000CY	Key Diagram, Reactor 480V AC MCC 136Y-2 (1AP83E) and 136Y-3 (1AP84E)	V
1E-1-4000D	Single Line Diagram, Part 4, 480V Substations on Swgr 141X & 141Y	A
1E-1-4000DA	Key Diagram, 480V MCC 143-1	T
1E-1-4000DB	Station Key Diagram, 125V DC Distribution System	H
1E-1-4000DK	Key Diagram, 480V MCC 132Y-2 (1AP60E)	T
1E-1-4000DU	Key Diagram, 480V MCC 132Y-1	L
1E-1-4000E	Single Line Diagram, Part 5, 480V Substations on Swgr 142X, 142Y & 143	A
1E-1-4000FB	Key Diagram, 125V DC Distribution Essential Div. 1	S
1E-1-4000LD	Key Diagram, 120/208VAC Distribution Panel at 480V MCC 135X-1	N
1E-1-4000LE	Key Diagram, 120/208VAC Distribution Panel at 480V MCC 135X-2	P
1E-1-4000LL	Key Diagram, 120/208VAC Distribution Panel at 480V MCC 135X-1	M
1E-1-4001F	Logic Block Diagram, Auxiliary Power System AP PT. 1	C
1E-1-4001LA	Logic Block Diagram, Diesel Generator Sys DG PT. 1	D
1E-1-4001M	Logic Block Diagram, Auxiliary Power System AP PT. 7	C
1E-1-4001N	Logic Block Diagram, Auxiliary Power System AP PT. 8	B
1E-1-4001P	Logic Block Diagram, Auxiliary Power System AP PT. 9	B
1E-1-4001YC	Logic Block Diagram, High Pressure Core Spray Sys. HP. PT. 3	B
1E-1-4001YD	Logic Block Diagram, High Pressure Core Spray Sys. HP. PT. 4	B
1E-1-4001YE	Logic Block Diagram, High Pressure Core Spray Sys. HP. PT. 5	C
1E-1-4005AG	Schematic Diagram, 4160V Switchgear 141X Main Feed ACB 1411 System “AP” Part 7	O
1E-1-4005AJ	Schematic Diagram, 4160V Switchgear 141Y Main Feed ACB 1412 System “AP” Part 9	V
1E-1-4005AK	Schematic Diagram, 4160V Switchgear 141Y Unit Tie ACB 1414 System “AP” Part 10	N
1E-1-4005AL	Schematic Diagram, 4160V Switchgear 141Y Bus Tie ACB 1415 System “AP” Part 11	M
1E-1-4005AM	Schematic Diagram, 4160V Switchgear 141Y (1AP04E) Auxiliary Compartment System “AP” Part 12	N

DRAWINGS

Number	Description or Title	Date or Revision
1E-1-4005BR	Wiring Diagram, 480V Switchgear 135X & 135Y Undervoltage Relays System “AP” Part 40	F
1E-1-4089AA	Schematic Diagram, Core Standby Cooling Sys. VY PT. 1	E
1E-1-4209AA	Schematic Diagram, Standby Liquid Control System “SC” (C41), Part 1	L
1E-1-4209AB	Schematic Diagram, Standby Liquid Control System “SC” (C41), Part 2	M
1E-1-4209AC	Schematic Diagram, Standby Liquid Control System “SC” (C41), Part 3	M
1E-1-4209AD	Schematic Diagram, Standby Liquid Control System “SC” (C41), Part 4	F
1E-1-4214AA	Schematic Diagram, Remote Shutdown System “AA”, Part 1	L
1E-1-4214AC	Schematic Diagram, Remote Shutdown System “AA”, (C61) Part 3	R
1E-1-4220AE	Schematic Diagram, Residual Heat Removal System RH (E12) PT. 5	G
1E-1-4220AG	Schematic Diagram, Residual Heat Removal Service Water Strainer 1A System RH (E12) Part 7	K
1E-1-4222AB	Schematic Diagram, High Pressure Core Spray System “HP” (E22A) Part 2	U
1E-1-4223AA	Schematic Diagram, H.P.C.S. Diesel Generator “1B” Alarm System “HP” (E22B) Part 1	AA
1E-1-4223AC	Schematic Diagram, 4160V Switchgear 143 (1AP07E) Auxiliary Compartment System “HP” (E22B) Part 3	W
1E-1-4223AD	Schematic Diagram, 4160V Switchgear 143 Feed from Diesel Generator “1B” System “DG” (E22B) Part 4	T
1E-1-4223AE	Schematic Diagram, High Pressure Core Spray Pump, System HP (E22B) Part 5	R
1E-1-4223AG	Schematic Diagram, H.P.C.S. Diesel Generator 1B Protective Relaying System HP (E22B) Part 7	L
1E-1-4223AH	Schematic Diagram, H.P.C.S. Diesel Generator 1B Generator Engine Control System “HP” (E22B) Part 8	AA
1E-1-4223AJ	Schematic Diagram, High Pressure Core Spray Diesel Generator-1B Generator/Engine Control System “HP” (E22B) Part 9	T
1E-1-4223AK	Schematic Diagram, HPCS Diesel Generator “1B” Generator/ Engine Control System “HP” Part 10	T
1E-1-4223AL	Schematic Diagram, HPCS DG-1B Generator/ Engine Control System “HP” (E22B) Part 11	R

DRAWINGS

Number	Description or Title	Date or Revision
1E-1-4223AM	Schematic Diagram, HPCS DG-1B Generator/ Engine Control System “HP” (E22B) Part 12	T
1E-1-4223AN	Schematic Diagram, HPCS DG-1B Generator/ Engine Control System “HP” (E22B) Part 13	R
1E-1-4223AP	Schematic Diagram, HPCS Diesel Generator- “1B” Generator/Engine Control System “HP” (E22B) Part-14	R
1E-1-4223AQ	Schematic Diagram, HPCS DG-1B Generator/ Engine Control System “HP” (E22B) Part 15	S
1E-1-4223AR	Schematic Diagram, HPCS DG-1B Generator Engine Control, System HP (E22B) Part 16	R
1E-1-4226AA	Schematic Diagram, Reactor Core Isolation Cooling System “RI”, (E51) Part 1	R
1E-1-4505AC	Int./Ext. Wiring Diagram, RHR “A” Cubicle Vent Panel 1PL34J	D
1E-1-4505AG	Wiring Diagram, Miscellaneous HVAC Instruments Sys. VY	D
1E-1-4641AA	Internal/External Wiring Diagram, Standby Liquid Control Local Panel 1H22-P011	G
1E-1-4683AA	Internal/External Wiring Diagram HPCS Diesel Generator “1B”, Generator/Engine Control Panel, Part 1	AL
1E-1-4683AB	Internal/External Wiring Diagram HPCS Diesel Generator “1B”, Generator/Engine Control Panel, Part 2	V
1E-1-4683AC	Internal/External Wiring Diagram HPCS Diesel Generator “1B”, Generator/Engine Control Panel, Part 3	U
1E-1-4683AD	Internal/External Wiring Diagram HPCS Diesel Generator “1B”, Generator/Engine Control Panel, Part 4	T
1E-1-4683AE	Internal/External Wiring Diagram HPCS Diesel Generator “1B”, Generator/Engine Control Panel, Part 5	U
1E-1-4683AF	Internal/External Wiring Diagram HPCS Diesel Generator “1B”, Generator/Engine Control Panel, Part 6	R
1E-1-4683AG	Internal/External Wiring Diagram HPCS Diesel Generator “1B”, Generator/Engine Control Panel, Part 7	S
1E-1-4683AH	Front Elevation HPCS DG-1B Generator Engine Control Panel 1E22-P301B	Q
1E-2-4005AM	Schematic Diagram, 4160V Switchgear 241Y (2AP04E) Auxiliary Compartment System “AP” Part 12	N
1E-2-4220AH	Schematic Diagram, Residual Heat Removal System RH (E12) Part 8	T

DRAWINGS

Number	Description or Title	Date or Revision
M-2009	P&ID/C&I Details Standby Liquid Control System – SC (C41)	B

MISCELLANEOUS

Number	Description or Title	Date or Revision
011	EDG and Auxiliaries (Operations Training Program, Revisions 11)	June 25, 2012
01492090-6	OPXR ATI Assignment: NRC Information Notice 2013-05"Battery Expected Life and Its Potential Impact on Surveillance Requirements	May 29, 2013
061	High Pressure Core Spray (HPCS) System, (Lesson Plan)	6
065	Core Standby Cooling/Equipment Cooling Water (VY-Operations Training Program Lesson Plan, Revision 10)	February 5, 2010
092	Containment Monitoring (Training Module for CM)	11
128	Safety Related Ventilation, VD, VY, VX	1
22A1483AJ	High Pressure Core Spray System Design Specification	8
234A9309TD	GE IDS High Pressure Core Spray sys	January 30, 1976
73310-01	Monthly Diesel Fuel Oil Inventory Report, (per SR 3.8.1.4, LTP-300-13)	October 2, 2013
CM-1	Containment Monitoring System	1
DG-2	HPCS and NON-HPCS Fuel Oil Systems	1
EC 381008	Assessment of EDG Frequency Upon NPSHG In Support of OPEX Review Regarding OE#!# percent$	0
ER-AA-2030	Conduct of Plant Engineering Manual	14
ERA-AA-520	Instrument Performance Trending	3
ESA-102	Electrical and Physical Characteristics of Class B Electrical Cables	2
GEH-LCS-AEP-045	LaSalle Units 1 and 2 TPO T0903 Analysis for input into T1602 Task Report, (Site specific analysis, LaSalle SBO)	August 8, 2009
HP-1	High Pressure Core Spray System	2
L98-585	10 CFR 50.59 Safety Evaluation Form	December 22, 1998
LPGP-CALC-01	EDG and SAMG Calculation Control – Instructions and Input Data	11
LPGP-CALC-02	EDG and SAMG Calculation Control – Setpoints and Calculation Results	2
LS PSA-005.21	DC Power Distribution System Notebook	4
LS-PSA-005.06	High Pressure Core Spray System (HPCS) System Notebook	4
LS-PSA-005.20	AC Power System Notebook	4
LST-81-117	Diesel Generator "0" Fuel Oil Consumption	December 14, 1981

MISCELLANEOUS

Number	Description or Title	Date or Revision
MDE-78-0686	Upper and Lower Setpoint Limits for Interim Operation of LaSalle 1 and 2	June 1987
N-877	Ingersoll-Rand Pump HPCS Curve, (Unit 1, E22-C001)	0
NES-EIC-20.04	Analysis of Instrument Channel Setpoint Error and Instrument Loop Accuracy	6
P.O. 287842	SOR Order No. 0051098A, (Vendor Certification for DW High Pressure Instruments)	December 6, 1988
WO 1631673	Supplement to this Work Order—Taking credit for the Comprehensive Test with the results from the Quarterly Test	September 4, 2013
	Safety Evaluation of the LaSalle County Station Response to the Station Blackout Rule	March 6, 1992
	Supplemental Safety Evaluation of the LaSalle County Station Response to the Station Blackout Rule	December 4, 1997
	Commonwealth Edison Letter to NRC, LaSalle County Station Units 1 and 2, Response to Safety Evaluation on the Station Blackout Rule	May 15, 1992
	Safety Evaluation Related to Station Blackout Analysis, LaSalle County Station, Units 1 and 2	July 17, 1992
	NRC Letter to Thomas J Kovach, Request for Additional Information Related to Station Blackout, LaSalle Units 1 and 2	August 23, 1991
	Commonwealth Edison Letter to NRC, LaSalle County Station Units 1 and 2 Supplemental Response to Station Blackout (SBO) Rule	September 23, 1991

SURVEILLANCES

Number	Description or Title	Date or Revision
LOS-SC-Q1, Att 2A	SBLC Tank Level Indication Quarterly Surveillance	February 25, 2013
LOS-SC-Q1, Att 2B	SBLC Tank Level Indication Quarterly Surveillance	February 25, 2013

10 CFR 50.59 EVALUATIONS

Number	Description or Title	Date or Revision
L10-136	EC 375195, Issue Calculation for ETAP-DC Conversion	September 1, 2010
L12-157	EC 387271, Revise Calculation L-003447	September 24, 2012

OPERABILITY EVALUATIONS

Number	Description or Title	Date or Revision
OE 09-003	SBLC Pump Discharge Relief Valve 1(2)C41-F029A/B	0

PROCEDURES

Number	Description or Title	Date or Revision
LES-DC-102A	Battery Charger Inspection	13
LES-DC-103A	Division I Battery Charger Capacity Test	19
LES-DC-706	Unit 1 (2) Division 1 Battery Service Test Discharge	3
LES-DC-718	Unit 1 (2) Division 1 Battery Modified Performance Test	3
LES-HP-102	Unit 1 High Pressure Core Spray System Relay Logic and Overload Bypass Functional Test	18
LES-SC-101	Unit 1 SBLC System Logic Functional and Thermal Overload Bypass Test	16
LGA-001	RPV Control	14
LGA-010	FAILURE TO SCRAM	13
LIP-DG-501B	Unit 1 Diesel Generator 1B Fuel Oil Storage Tank Level Switch and Indication Calibration	4
LIP-HP-501	Unit 1 HPCS Pump Discharge Flow Indication Calibration	4
LIS-CM-101	Unit 1 Suppression Chamber Wide and Narrow Range Water Level Indication Calibration	13
LIS-HP-105	Unit 1 High Pressure Core Spray Minimum Flow Bypass Calibration	29
LOP-HP-08	HJPCS System Full Flow Test Operation	3
LOS-DB-M3	1B Diesel Generator Idle Start	87
LOS-DG-103	Unit 1 Operating Department Surveillance, Unit 1, 1B Diesel Generator 1E22-S001, Start and Load Acceptance Surveillance	8
LOS-DG-111	Integrated Division III Response Time Surveillance	9
LOS-DG-111	Unit 1 Operating Department Surveillance, Unit 1 Integrated Division III Response Time Surveillance, 1B Diesel Generator 1E22-S001, Start and Load Acceptance Surveillance	11
LOS-DG-M3	Unit 1, and 2 Operating Department Surveillance, 1B (2B) Diesel Generator Operability Test	88
LOS-HP-Q1	HPCS System Inservice Test	64
LOS-HP-Q1	Unit 1, 2 and Common Operating Department Surveillance, HPCS System Inservice Test	64

PROCEDURES

Number	Description or Title	Date or Revision
LOS-RH-Q1	Unit 1, 2 and Common Operating Department Surveillance, RHR (LPCI) and RHR Service Water Pump and Valve Inservice Test for Modes 1, 2, 3, 4 and 5	80
LOS-SC-R1	Unit 1, 2 and Common Operating Department Surveillance, SBLC System Injection Test and Inservice Test for Valves	32
LOS-VY-SR1	ECCS Cubicle Area Cooler Air Flowrate Test	5
LTS-700-18	Unit 1 (2) Division I Battery Modified Performance Test	2

WORK DOCUMENTS

Number	Description or Title	Date or Revision
00745714-01	Unit 1 Division I 125 VDC Battery Modified Performance Test	March 5, 2006
01106481-01	Replace 125 VDC Div. I Battery Charger Caps/PC Boards/Fuses/Pots/Togg.	March 26, 2010
01142197-01	Unit 1 Division 1 Battery Service Test Discharge	February 18, 2010
01316738-01	U-1 HPCS System Relay Logic & O/L Bypass Test, LES-HP-102	February 17, 2012
01318994-01	Integrated Division III ECCS Response Time	February 21, 2012
01320199-01	Unit 1, 125V Battery Division I Service Test Discharge	February 26, 2012
01328218-01	1DC09E Insp/Clean, Capacity Test Charger	March 22, 2012
01438692-01	LOS-SC-R1 U2 SLBC Injection Test	February 25, 2013
01579544-01	LOS-DG-M3 1B DG Fast Start, Att. 1B-Fast	April 4, 2013
01602002-01	LOS-DC-Q2 U-1 Div I 125VDC Batt. Att. B	March 21, 2013
01625781-01	LOS-DC-Q2 U-1 Div I 125VDC Batt. Att. B	June 20, 2013
01631673-01	LOS-HP-Q1 U1 HPCS Pump Run, Att. 1A	July 27, 2013
01659913-01	LOS-DC-M5 U1 125VDC Div. I Batt. Att. B	August 20, 2013
01663550-01	LOS-DG-M3 1B DG Idle Start, Att. 1B-Idle	September 5, 2013
01666644-01	LOS-DC-M5 U1 125VDC Div. I Batt. Att. B	September 18, 2013
01670154-01	LOS-DC-W1 Att B, U1 125VDC Div I Battery/ Breaker Checks	September 11, 2013
01672916-01	LOS-DC-W1 Att B, U1 125VDC Div I Battery/ Breaker Checks	September 18, 2013
WO 01331678	U-1 NW CUBICLE AREA AIR SIDE FLOWRATE TEST	April 18, 2012
WO00719666-01	RHR HE 1A and 1B Inlet-Outlet and SW Temps	August 28, 2008
WO01093402-01	IM LIP-SC-502 U1 SBLC Flowmaster Cal	March 11, 2009
WO01153389-01	IM LIP-SC-505 U1 SBLC Tank Lvl Cal	December 7, 2009

WORK DOCUMENTS

Number	Description or Title	Date or Revision
WO01316089-01	RHR SW RAD MON	December 20, 2011
WO01317035-01	OP LOS-SC-R3 SBLC HT Pipe Flow Test ATT 1A	February 15, 2012
WO01320534-01	OP LOS-SC-R5 1A SBLC Pump Full Flow/Press Test	March 3, 2012
WO01341412-01	OP LOS-SC-R1 U1SBLC Injection Test ATT 1A	February 22, 2012
WO01386463-01	IM LIP-SC-503 Unit 1 SBLC Solution Temperature Cal	December 11, 2012
WO01386463-01	IM LIP-SC-503 Unit 1 SBLC Solution Temperature Cal	December 11, 2012
WO01393322	Div III DG Flow Test IAW LOS-DG-SR7	October 3, 2012
WO01434532-01	LIS-RH-105A/B Functional Test	July 27, 2011
WO01605650-01	OP LOS-SC-Q1 1A SBLC Pump Quarterly ATT 1A	March 19, 2013
WO01625523-01	OP LOS-SC-Q1 1A SBLC Pump Quarterly ATT 1A	June 18, 2013
WO01625523-01	LOS-SC-Q1 1A SBLC Pump Quarterly	June 19, 2013
WO01625523-01	LOS-SC-Q1 1A SBLC Pump Quaterly ATT 1A	June 19, 2013
WO01640342-01	LOS-DG-Q3 1B D/G Cooling Water Pump IST	August 5, 2013
WO01657894-01	LOS-RH-Q1 1A RHR WS Oper and IST	October 17, 2013

LIST OF ACRONYMS USED

±	Plus/Minus
AC	Alternating Current
ADAMS	Agencywide Document Access and Management System
AR	Action Request
ASME	American Society Of Mechanical Engineers
ATWS	Anticipated Transient Without SCRAM
BWROG	Boiling Water Reactor Owners Group
CAP	Corrective Action Program
CDBI	Component Design Bases Inspection
CFR	Code of Federal Regulations
DBD	Design Basis Document
DC	Direct Current
DGCW	Diesel Generator Cooling Water
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedure
EPG	Emergency Procedure Guidelines
FPC	Fuel Pool Cooling
IEEE	Institute of Electrical And Electronic Engineers
IMC	Inspection Manual Chapter
IN	Information Notice
IP	Inspection Procedure
IR	Inspection Report
IST	In-Service Test
kV	Kilovolt
LOCA	Loss Of Coolant Accident
LPCS	Low Pressure Core Spray
NCV	Non-Cited Violation
NPSH	Net Positive Suction Head
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
PRA	Probabilistic Risk-Assessment
RHR	Residual Heat Removal
RWCU	Reactor Water Clean-Up
SBLC	Standby Liquid Control
SBO	Station Blackout
SDP	Significance Determination Process
SER	Safety Evaluation Report
SPAR	Standardized Plant Analysis Risk
TS	Technical Specifications
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
Vac	Volts Alternating Current
Vdc	Volts Direct Current

In accordance with Title 10, *Code of Federal Regulations* (CFR), Section 2.390 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 Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Benny Jose, Acting Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure: Inspection Report 05000373/2013008; 05000374/2013008
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ™

DISTRIBUTION:
Brett Rini
RidsNrrDorlLpl3-2 Resource
RidsNrrPMLaSalle
RidsNrrDirsIrib Resource
Cynthia Pederson
Anne Boland
Steven Orth
Allan Barker
Carole Ariano
Linda Linn
DRPIII
DRSIII
Patricia Buckley
Tammy Tomczak
ROPreports.Resource@nrc.gov

DOCUMENT NAME: G:\DRSIII\DRS\Work in Progress\LAS 2013 008 CDBI RAL.docx
□ Publicly Available □ Non-Publicly Available □ Sensitive □ Non-Sensitive
To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII		RIII					
NAME	BJose for RLangstaff:ls		BJose					
DATE	12/06/13		12/06/13					

OFFICIAL RECORD COPY