



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

November 2, 2010

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

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2  
NRC INTEGRATED INSPECTION REPORT 05000373/2010004;  
05000374/2010004

Dear Mr. Pacilio:

On September 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your LaSalle County Station, Units 1 and 2. The enclosed report documents the results of this inspection, which were discussed on October 13, 2010, with the Site Vice President, Mr. David Rhoades, 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, no findings of significance were identified.

In accordance with 10 CFR 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 document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/RA/ By N. Shah Acting For/***

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000373/2010004; 05000374/2010004  
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000373/2010004; 05000374/2010004

Licensee: Exelon Generation Company, LLC

Facility: LaSalle County Station, Units 1 and 2

Location: Marseilles, IL

Dates: July 1, 2010, through September 30, 2010

Inspectors: G. Roach, Senior Resident Inspector  
F. Ramírez, Resident Inspector  
M. Mitchell, Region III Health Physics Inspector  
A. Scarbeary, Region III Reactor Engineer  
N. Shah, Region III Project Engineer  
P. Smagacz, Region III Reactor Engineer  
J. Yesinowski, Illinois Dept. of Emergency Management

Approved by: Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

Enclosure

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	1
REPORT DETAILS .....	2
Summary of Plant Status.....	2
1. REACTOR SAFETY .....	3
1R01 Adverse Weather Protection (71111.01).....	3
1R04 Equipment Alignment (71111.04).....	3
1R05 Fire Protection (71111.05) .....	4
1R06 Flooding (71111.06).....	5
1R11 Licensed Operator Requalification Program (71111.11).....	6
1R12 Maintenance Effectiveness (71111.12).....	6
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13) .....	7
1R15 Operability Evaluations (71111.15) .....	s8
1R18 Plant Modifications (71111.18).....	9
1R19 Post-Maintenance Testing (71111.19).....	9
1R22 Surveillance Testing (71111.22) .....	10
1EP6 Drill Evaluation (71114.06).....	13
2. RADIATION SAFETY .....	13
2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01) .....	13
2RS2 Occupational As-Low-As-Is-Reasonably-Achievable Planning and Controls (71124.02).....	15
2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08).....	16
4. OTHER ACTIVITIES.....	20
4OA1 Performance Indicator Verification (71151).....	20
4OA2 Identification and Resolution of Problems (71152) .....	23
4OA3 Followup of Events and Notices of Enforcement Discretion (71153) .....	27
4OA6 Management Meetings.....	28
4OA7 Licensee-Identified Violations .....	28
SUPPLEMENTAL INFORMATION .....	1
Key Points of Contact.....	1
List of Items Opened, Closed and Discussed.....	2
List of Documents Reviewed.....	3
List of Acronyms Used .....	13

## SUMMARY OF FINDINGS

IR 05000373/2010-004, 05000374/2010-004; 07/01/2010 - 09/30/2010; LaSalle County Station, Units 1 & 2; Routine Integrated Inspection Report.

This report covers a three-month period of inspection by resident inspectors and announced inspection by a regional health physics inspector. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. 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**

No violations of significance were identified.

**B. Licensee-Identified Violations**

No violations of significance were identified.

## **REPORT DETAILS**

### **Summary of Plant Status**

#### **Unit 1**

The unit began the inspection period operating at full power. On August 12, 2010, power was reduced to approximately 75 percent due to a failed loop seal in the off gas (OG) system. Following repairs of the OG loop seal, operations personnel began manipulations towards full power but shortly thereafter the ultimate heat sink (lake) temperature limits were exceeded due to elevated outside temperature. As a result, the unit commenced a Technical Specification (TS) required shutdown. That same night, when the temperature of the lake stabilized and subsequently lowered, the unit was returned to full power. On August 13, 2010, power was rapidly reduced to 81 percent due to the lowering of non-essential service water (WS) pressure. The non-essential WS strainers were clogged by the remains of various species of fish that had been killed as a result of the elevated lake temperatures the previous day. Following clean-up and repairs of the WS system, the unit was returned to full power that same day. On September 2, 2010, power was reduced to 90 percent due to work in the feedwater speed control system. Specifically, the 1B turbine driven reactor feed pump (TDRFP) required a module card replacement. The unit was returned to full power that same day. On September 11, 2010, power was reduced to approximately 65 percent for control rod pattern adjustment and scram timing and was restored to 100 percent that same day. Lastly, on September 25, 2010, power was reduced to 90 percent in order to perform testing for the implementation of measurement uncertainty recapture. After testing was completed on September 26, 2010, the unit achieved its new full power value of 3546 MWth. The unit remained at full power for the rest of the inspection period.

#### **Unit 2**

The unit began the inspection period operating at full power. Due to elevated outside temperatures during July and August, in conjunction with fouling in the main condenser, the unit experienced increased condenser backpressure. As a result, the unit was repeatedly de-rated, varying from 95 to 100 percent power, to maintain the condenser backpressure within an acceptable band. On August 12, 2010, the unit commenced a TS-required shutdown because the ultimate heat sink (lake) temperature limits were exceeded due to elevated outside temperature. Power was reduced to approximately 80 percent. That same night, when the temperature of the lake stabilized and subsequently lowered, operations personnel began manipulations to raise power. The unit stabilized at approximately 85 percent due to elevated condenser backpressure. On August 13, 2010, power was further reduced to 80 percent due to the lowering of non-essential WS pressure. The non-essential WS strainers were clogged by the remains of various species of fish that had been killed as a result of the elevated lake temperatures the previous day. Following clean-up and repairs to the WS system, the unit was returned to full power that same day. On September 5, 2010, power was reduced to approximately 65 percent for control rod pattern adjustment and scram timing and channel distortion testing. The unit was restored to full power on September 6, 2010, where it operated for the remainder of the inspection period.

## 1. REACTOR SAFETY

### Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Readiness For Impending Adverse Weather Condition – Extreme Heat/Drought Conditions

###### a. Inspection Scope

The inspectors performed a detailed review of the licensee's procedures and preparations for operating the facility during an extended period of time when the ambient outside temperature was high and the ultimate heat sink was experiencing elevated temperatures. The inspectors focused on plant-specific design features and implementation of the procedures for responding to or mitigating the effects of these conditions on the operation of the facility's core standby cooling system (CSCS). Inspection activities included a review of the licensee's adverse weather procedures, daily monitoring of the off-normal environmental conditions, and verifying that operator actions specified by plant-specific procedures were appropriate to ensure operability of the facility's normal and emergency cooling systems.

This inspection constituted one readiness for impending adverse weather condition sample as defined in Inspection Procedure (IP) 71111.01-05.

###### b. Findings

No findings of significance were identified.

#### 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 1 reactor core isolation cooling system (RCIC) after system supply lineup change for cycled condensate system (CY) tank repair;
- Unit 1 high pressure core spray system (HPCS) during RCIC return to service; and
- 2A residual heat removal (RHR) / WS system with 2B in a planned maintenance outage.

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, Updated Final Safety Analysis Report (UFSAR), 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 corrective action program (CAP) with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted three partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

From August 9 - 20, 2010, the inspectors performed a complete system alignment inspection of the instrument air system to verify the functional capability of the system. This system was selected because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (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:

- Unit 2 Reactor Building elevation 786 (Fire Zone 3D);
- Unit 2 Reactor Building elevation 761 (Fire Zone 3E);
- Auxiliary Building upper ventilation area elevation 815 (Fire Zone 4A);
- Auxiliary Building HPCS diesel fuel tank room elevation 674 (Fire Zone 8C1); and
- Auxiliary Building Division 2 diesel fuel tank room elevation 674 (Fire Zone 8C2).

The inspectors reviewed these 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, 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 as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which 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 of significance were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's CAP documents with respect to past flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- Unit 1 Amertap system (circulating water condenser tube cleaning system) experiencing a through wall leak on ball collection vessel.

This inspection constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On September 14, 2010, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify 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 sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

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

- diesel generator (DG) fuel oil systems; and
- reactor water cleanup systems (RWCU or RT).

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 structures, systems, and components (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 two quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (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/or safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- 1A TDRFP speed control system emergent work;
- 0 DG cooling water pump operability challenged due to operator error;
- Unit 1 OG flow increase due to loop seal failure;
- Unit 1 division 2 emergency core cooling systems initiation logic emergent repairs;
- 0 DG work window protected equipment; and
- Unit 2 HPCS DG switchgear/cooling water pump ventilation fan emergent work.

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.

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

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- transfer of supply water for RCIC from CY tank to the suppression pool;
- reactor water level reference leg continuous fill panel low flow;
- concern regarding vendor (Velan) testing of steam drain line isolation valve prior to installation in the plant;
- standby liquid control system (SBLC) ability to supply minimum required borated water flow rate to the reactor during accident conditions due to head tank input; and
- Unit 2 spent fuel pool effective multiplication factor ( $K_{eff}$ ) challenged due to Boraflex™ degradation.

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 TS 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 five samples as defined in IP 71111.15-05.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications:

- 2A reactor recirculation system flow control valve linear variable differential transformer and rotational variable differential transformer mismatch alarm bypass; and
- Units 1 and 2 heater drain system parameter monitoring equipment.

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system(s). The inspectors also compared the licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; 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. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two temporary modification samples as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

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:

- 2A SBLC pump PMT methodology;
- Unit 2 HPCS water leg pump after replacement;

- Unit 2 reactor building ventilation exhaust isolation damper 2VR05YA after limit switch repairs;
- Unit 1 division 2 emergency core cooling systems initiation logic after power supply replacement; and
- 0A control room ventilation and auxiliary electric room ventilation after work window.

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 TS, 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 PMT 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 six PMT samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (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:

- 2A DG idle start (Routine);
- low pressure core spray system (LPCS) and "A" low pressure coolant injection free of gas accumulation ultrasonic testing (Temporary Instruction (TI) 2515/177 Effort) (Routine);
- "0" DG cooling water pump (in-service testing (IST)); and
- reactor coolant system (RCS) leakage determination (RCS).

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

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and 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 were in accordance with TSs, the USAR, 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, American Society of Mechanical Engineers 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.

Also, additional activities were performed during the review of surveillance ER-AA-335-007 that were associated with TI 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems." These activities are described in bullet .2 of this section.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted two routine surveillance testing samples, one in-service testing sample, and one reactor coolant system leak detection inspection sample as defined in IP 71111.22, Sections -02 and -05.

.2 Surveillance Testing Associated with Temporary Instruction 2515/177, “Managing Gas Accumulation In Emergency Core Cooling, Decay Heat Removal, And Containment Spray Systems.”

a. Inspection Scope

When reviewing ER-AA-335-007 *Ultrasonic Inspection for Determination of Sedimentation in Piping Systems or Components and Fluid Level Measurements*, the inspectors verified that the procedure was acceptable for (1) testing LPCS and low pressure coolant injection with power operation, shutdown operation, maintenance, and subject system modifications, (2) void determination and elimination methods, and (3) post-event evaluation.

The inspectors verified the following with respect to surveillance and void detection:

- Specified surveillance frequency was consistent with TS surveillance requirements (TI 2515/177, Section 04.03.d.1).
- Surveillance frequencies were stated or, when conducted more often than required by TSs, the process for their determination was described (TI 2515/177, Section 04.03.d.2).
- Surveillance methods were acceptably established to achieve the needed accuracy (TI 2515/177, Section 04.03.d.3).
- Surveillance procedure included up-to-date acceptance criteria (TI 2515/177, Section 04.03.d.4).
- Procedure included effective followup actions when acceptance criteria are exceeded or when trending indicates that criteria may be approached before the next scheduled surveillance (TI 2515/177, Section 04.03.d.5).
- Measured void volume uncertainty was considered when comparing test data to acceptance criteria (TI 2515/177, Section 04.03.d.6).
- Qualitative void assessment methods included expectations that the void will be significantly less than allowed by acceptance criteria (TI 2515/177, Section 04.03.d.9).
- Venting results were trended periodically to confirm that the systems are sufficiently full of water and that the venting frequencies are adequate. The inspectors also verified that records on the quantity of gas at each location are maintained and trended as a means of preemptively identifying degrading gas accumulations (TI 2515/177, Section 04.03.d.10).
- Surveillances were conducted at any location where a void may form, including high points, dead legs, and locations under closed valves in vertical pipes (TI 2515/177, Section 04.03.d.11).
- The licensee ensure that systems were not pre-conditioned by other procedures that may cause a system to be filled, such as by testing, prior to the void surveillance (TI 2515/177, Section 04.03.d.12).
- Procedure included gas sampling for unexpected void increases if the source of the void is unknown and sampling is needed to assist in determining the source (TI 2515/177, Section 04.03.d.13).

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on September 21, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Technical Support Center during the Emergency Preparedness (EP) scenario to determine whether event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This EP drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

This inspection constituted one radiological hazard assessment and exposure control sample as defined in IP 71124.01-05.

.1 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors examined the licensee's physical and programmatic controls for highly activated or contaminated materials (nonfuel) stored within spent fuel and other storage pools. The inspectors assessed whether appropriate controls (i.e., administrative and physical controls) were in place to preclude inadvertent removal of these materials from the pool.

b. Findings

No findings of significance were identified.

.2 Risk-Significant High Radiation Area and Very High Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors discussed with the Radiation Protection (RP) Manager the controls and procedures for high-risk high radiation areas and very high radiation areas (VHRA). The inspectors discussed methods employed by the licensee to provide stricter control of VHRA access as specified in 10 CFR 20.1602, "Control of Access to Very High Radiation Areas," and Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas of Nuclear Plants." The inspectors assessed whether any changes to licensee procedures substantially reduce the effectiveness and level of worker protection.

The inspectors discussed the controls in place for special areas that have the potential to become VHRA during certain plant operations with first-line health physics supervisors (or equivalent positions having backshift health physics oversight authority). The inspectors assessed whether these plant operations require communication beforehand with the health physics group, so as to allow corresponding timely actions to properly post, control, and monitor the radiation hazards including re-access authorization.

The inspectors evaluated licensee controls for VHRA and areas with the potential to become a VHRA to ensure that an individual was not able to gain unauthorized access to the VHRA.

b. Findings

No findings were identified.

.3 Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors reviewed a maximum of 10 radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the RP manager any problems with the corrective actions planned or taken.

b. Findings

No findings of significance were identified.

.4 Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors observed the performance of the RP technician with respect to all RP work requirements. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace and the radiation work permit (RWP)

controls/limits and whether their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

The inspectors reviewed a maximum of 10 radiological problem reports since the last inspection that found the cause of the event to be RP technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings of significance were identified.

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

.1 Radiological Work Planning (02.02)

a. Inspection Scope

The inspectors selected five work activities of the highest exposure significance with greater than 5 person-rem of exposure. The inspectors determined whether the licensee reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances. The inspectors reviewed the as-low-as-is-reasonably-achievable (ALARA) work activity evaluations, exposure estimates, and exposure mitigation requirements.

The inspectors compared the results achieved (dose rate reductions, person-rem used) with the intended dose established in the licensee's ALARA planning for these work activities and compared the person-hour estimates provided by maintenance planning and other groups to the RP group with the actual work activity time requirements to determine whether the accuracy of these time estimates was reasonable. The inspectors reviewed the reasons (e.g., failure to adequately plan the activity, failure to provide sufficient work controls) for any inconsistencies between intended and actual work activity doses to determine whether the licensee was making corrective actions to improve the program.

The inspectors reviewed post-job (work activity) reviews to determine whether they were conducted and if identified problems were entered into the licensee's CAP.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution (02.06)

a. Inspection Scope

The inspectors evaluated whether problems associated with ALARA planning and controls are 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 involved ALARA planning and controls. The inspectors assessed the licensee's process for applying operating experience to their plant.

b. Findings

No findings of significance were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

This inspection constituted one complete sample as defined in IP 71124.08-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the UFSAR, the process control program (PCP), and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of any quality assurance audit in this area since the last inspection to gain insights into the licensee's performance and inform the "smart sampling" inspection planning.

b. Findings

No findings were identified.

.2 Radioactive Material Storage (02.02)

a. Inspection Scope

The inspectors selected areas where containers of radioactive waste are stored, and evaluated whether the containers were labeled in accordance with 10 CFR 20.1904, "Labeling Containers," or controlled in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements," as appropriate.

The inspectors assessed whether the radioactive materials (RAM) storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20, "Standards for Protection against Radiation." For materials stored or used in the controlled or unrestricted areas, the inspectors evaluated whether they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material Not in Storage," as appropriate.

The inspectors evaluated whether the licensee established a process for monitoring the impact of long term storage (e.g., buildup of any gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, or re-release of free-flowing water) that was sufficient to identify potential unmonitored, unplanned releases or nonconformance with waste disposal requirements.

The inspectors selected containers of stored RAM, and assessed for signs of swelling, leakage, and deformation.

b. Findings

No findings were identified.

.3 Radioactive Waste System Walkdown (02.03)

a. Inspection Scope

The inspectors walked down accessible portions of select radioactive waste processing systems to assess whether the current system configuration and operation agreed with the descriptions in the UFSAR, Offsite Dose Calculation Manual and PCP.

The inspectors reviewed administrative and/or physical controls (i.e., drainage and isolation of the system from other systems) to assess whether the equipment, which is not-in-service or abandoned in place, would not contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors assessed whether the licensee reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments."

The inspectors reviewed the adequacy of changes made to the radioactive waste processing systems since the last inspection. The inspectors evaluated whether changes from what is described in the UFSAR were reviewed and documented in accordance with 10 CFR 50.59, as appropriate and to assess the impact on radiation doses to members of the public.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal container and assessed whether the waste stream mixing, sampling procedures, and methodology for waste concentration averaging were consistent with the PCP, and provided representative samples of the waste product for the purposes of waste classification as described in 10 CFR 61.55, "Waste Classification."

For those systems that provide tank recirculation, the inspectors evaluated whether the tank recirculation procedures provided sufficient mixing.

The inspectors assessed whether the licensee's PCP correctly described the current methods and procedures for dewatering and waste stabilization (e.g., removal of freestanding liquid).

b. Findings

No findings were identified.

.4 Waste Characterization and Classification (02.04)

a. Inspection Scope

The inspectors selected the following radioactive waste streams for review:

- dry active waste; and
- bead resin.

For the waste streams listed above, the inspectors assessed whether the licensee's radiochemical sample analysis results (i.e., "10 CFR Part 61" analysis) were sufficient to support radioactive waste characterization as required by 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." The inspectors evaluated whether the licensee's use of scaling factors and calculations to account for difficult-to-measure radionuclides was technically sound and based on current 10 CFR Part 61 analysis for the selected radioactive waste streams.

The inspectors evaluated whether changes to plant operational parameters were taken into account to: (1) maintain the validity of the waste stream composition data between the annual or biennial sample analysis update; and (2) assure that waste shipments continued to meet the requirements of 10 CFR Part 61 for the waste streams selected above.

The inspectors evaluated whether the licensee had established and maintained an adequate quality assurance program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56, "Waste Characteristics."

b. Findings

No findings were identified.

.5 Shipment Preparation (02.05)

a. Inspection Scope

During the previous inspection period, the inspectors observed shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness. The inspectors assessed whether the requirements of applicable transport cask certificate of compliance had been met. The inspectors evaluated whether the receiving licensee was authorized to receive the shipment packages. The inspectors evaluated whether the licensee's procedures for cask loading and closure procedures were consistent with the vendor's current approved procedures.

During the previous inspection period, the inspectors observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation and receipt activities. The inspectors assessed whether the shippers were knowledgeable of the shipping regulations and whether shipping personnel demonstrated adequate skills to accomplish the package preparation requirements for public transport with respect to: the licensee's response to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," dated August 10, 1979; and

- Title 49 CFR Part 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, Training Requirements, and Security Plans," Subpart H, "Training."

Due to limited opportunities for direct observation during this inspection period, the inspectors reviewed the technical instructions presented to workers during routine training. The inspectors assessed whether the licensee's training program provided

training to personnel responsible for the conduct of radioactive waste processing and RAM shipment preparation activities.

b. Findings

No findings were identified.

.6 Shipping Records (02.06)

a. Inspection Scope

The inspectors evaluated whether the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and UN number for the following radioactive shipments:

- LW 09-020 Dry Active Metals on July 6, 2009;
- LW 09-040 Contaminated Soil, October 26, 2009;
- LW 10-034 Condensate Polisher Pre-filters, August 17, 2010;
- LW 10-037 Resin Liner, September 3, 2010; and
- LW 10-038 Dry Active Waste; August 24, 2010.

Additionally, the inspectors assessed whether the shipment placarding was consistent with the information in the shipping documentation.

b. Findings

No findings were identified.

.7 Identification and Resolution of Problems (02.07)

a. Inspection Scope

The inspectors assessed whether problems associated with radioactive waste processing, handling, storage, and transportation, were being identified by the licensee at an appropriate threshold, were properly characterized, and were properly addressed for resolution in the licensee's CAP. Additionally, the inspectors evaluated whether the corrective actions were appropriate for a selected sample of problems documented by the licensee that involve radioactive waste processing, handling, storage, and transportation.

The inspectors reviewed results of selected audits performed since the last inspection of this program and evaluated the adequacy of the licensee's corrective actions for issues identified during those audits.

b. Findings

No findings were identified.

#### 4. OTHER ACTIVITIES

##### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness**

#### 4OA1 Performance Indicator Verification (71151)

##### .1 Mitigating Systems Performance Index - Emergency AC Power System

###### a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - emergency AC power system performance indicator (PI), Units 1 and 2, for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, issue reports (IR), event reports and NRC Integrated Inspection Reports for the period of July 2009 through June 2010 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's IR 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 MSPI emergency AC power system samples as defined in IP 71151-05.

###### b. Findings

No findings of significance were identified.

##### .2 Mitigating Systems Performance Index - High Pressure Injection Systems

###### a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - High Pressure Injection Systems PI for Units 1 and 2, for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, IRs, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of July 2009 through June 2010 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's IR 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 MSPI high pressure injection system samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - RHR System PI for Units 1 and 2 for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, IRs, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of July 2009 through June 2010 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's IR 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 MSPI RHR system samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.4 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Specific Activity PI for Unit 1 and Unit 2 for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the PI data reported by licensee during those periods, the inspectors referenced guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009. The inspectors reviewed the licensee's RCS chemistry samples, TS requirements, IRs, event reports, and NRC Integrated Inspection Reports for the period of July 2009 through June 2010 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's IR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a RCS sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two reactor coolant systems specific activity samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.5 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences PI for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the PI data reported during those periods, the inspectors referenced guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009 was used. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator-related data was adequately assessed and reported. In assessing the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with RP staff the scope, and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and VHRA entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one occupational radiological occurrences sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.6 Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent TS/Offsite Dose Calculation Manual Radiological Effluent Occurrences PI for the period of July 2009 through June 2010. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's IR database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates between July 2009 and June 2010 to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for

quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one radiological effluent occurrences sample as defined in IP 71151-05.

b. Findings

No findings of significance 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 Physical Protection**

.1 Routine Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As part of the various baseline IPs discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that 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 occurrence 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 of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for followup, 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 of significance were identified.

.3 Annual Sample: Review of Operator Workarounds (OWAs)

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the OWAs on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of OWAs. The documents listed in the Attachment to this report were reviewed to accomplish the objectives of the IP. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their CAP and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds.

This review constituted one operator workaround annual inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.4 Selected Issue Followup Inspection: Leak Identified at the Bottom of the Unit 1 Condensate Storage Tank

a. Inspection Scope

The inspectors reviewed the licensee's corrective actions associated with a leak identified at the bottom of the Unit 1 Condensate Storage Tank (CST) on June 30, 2010. In addition to evaluating the licensee's immediate response during the discovery of the leak, the inspectors evaluated the adequacy of the licensee's repairs, future monitoring plans and groundwater leakage tracking methods. The inspectors ensured that the licensee performed the required off site notifications to the NRC and the State of Illinois.

On June 25, 2010, the licensee sampled the water inside the berm that surrounds the CST tank for both units. This water, which is routinely sampled prior to draining, contained evidence of tritium in the results. Additional water sampling (over a three day period) from an adjacent groundwater test well, which samples groundwater beneath the berm, resulted in increasing levels of tritium which provided further evidence of an active Unit 1 CST tank leak. The licensee drained and inspected the tank and discovered three holes of less than 1-inch in diameter at the bottom of the tank.

The tank was repaired and returned to service on July 23, 2010. Concentrations of tritium measured in the water from the monitoring well, initially were approximately 700,000 picocuries per liter (pCi/L). Following isolation of the leak and repairs to the tank, the measured concentrations of tritium decreased to 51,000 pCi/L as of the end of this inspection period. In addition, while completing repairs, the licensee performed ultrasonic testing of the entire bottom surface of the tank and discovered no additional thinning of the base metal.

To further monitor the migration of the water, six additional groundwater sampling wells were installed around the area near the berm that surrounds the CST tanks for both units. The licensee plans to drain and inspect the Unit 2 CST tank in the fall of 2010 to perform an extent of condition review and ensure the structural integrity of the tank is being maintained. The licensee will continue to monitor the newly installed wells on a regular basis.

b. Findings

No findings of significance were identified.

.5 Selected Issue Followup Inspection: Engineering Justification Addressing Pressure Switch Preconditioning Non-Cited Violation (NCV) 05000373/2010003-01, 05000374/2010003-01

a. Inspection Scope

The inspectors reviewed the licensee's engineering justification regarding the methodology used to test safety-related pressure switches. The licensee received an NCV during the second quarter 2010, which was documented in detail in Integrated Inspection Report 2010003. In order to meet TS surveillance testing timeliness requirements, the licensee needed to either modify the design of the plant in order to connect the mechanical test rig to the pressure switch being tested or provide an engineering justification as to why the methodology used for testing, produced test results which did not affect the accuracy and reliability of the pressure switches being tested. A plant modification would require the addition of an isolation valve on the test line in order to maintain the pressure switch at its normal operating pressure while the test rig was being hooked up to the test line. This modification would have been required for 44 pressure switch test lines between Units 1 and 2. The licensee elected to prepare an engineering justification document which acknowledged the testing methodology presently utilized and how it cycles the pressure switch being tested through its full range of conditions before as-found test data is recorded. In addition to acknowledging this fact, the licensee attempted to describe why the test results received for the as-found condition of these pressure switches was reliable and accurate.

The licensee pointed to the very tight tolerances the as-found data had fallen into during historical testing.

The inspectors' review of the original document identified that their concern over relay sticking during the long interval between testing was not specifically addressed and, in addition, LaSalle experienced this phenomenon in February 2010, in a nonsafety-related application. The licensee addressed the inspectors' concerns in a subsequent revision to the engineering justification by noting that the pressure switch contacts for the safety-related applications are tested via a TS surveillance requirement quarterly functional test, which exercises the pressure switch contacts, and would minimize the likelihood of the contacts becoming bound due to the smaller time interval between demands. The licensee's engineering justification document was submitted to the Agency and is being reviewed along with that of other licensees who are susceptible to the same plant configuration. The results of these reviews will determine whether it is necessary for the NRC to issue generic guidance to the industry regarding testing practices and plant configurations that challenge reliable testing.

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

b. Findings

No findings of significance were identified.

.6 Selected Issue Followup Inspection: Operations with the Potential to Drain the Reactor Vessel Definition Change

a. Inspection Scope

The inspectors reviewed the licensee's performance of control rod drive (CRD) removal and replacement on the reactor vessel and its treatment in regards to operations with the potential to drain the reactor vessel (OPDRV). Specifically, the inspectors were made aware, through the operating experience process and through discussions with the Clinton Station resident inspectors, that the licensee, through its corporate office, had introduced a procedure change permitting CRD removal and replacement with caveats to occur and not be considered an OPDRV. This procedure change was made available to the individual sites for review and adoption if the licensee determined that the procedure was applicable and safe for that particular site. The licensee at Clinton had adopted this procedure and no longer considered CRD replacement as an OPDRV under certain governing conditions.

The LaSalle resident inspectors looked into the OPDRV procedure used at LaSalle and determined that the licensee adopted the corporate procedure in the form of OP-LA-117-101-1001, *Operations with the Potential to Drain the Reactor Vessel* just as Clinton had in June of 2010. Prior to June 2010, the licensee was using procedure LOP-NB-02, *Operations with the Potential to Drain the Reactor Vessel*. This procedure did not consider CRD removal as an OPDRV as long as the control rod associated with the CRD being removed was fully withdrawn with its velocity limiter seated against the reactor vessel penetration. The procedure estimated leakage past the control rod at 0.5 gallons per minute (gpm) and stated that up to 10 CRDs could be replaced at one time as this would maintain leakage at or less than the TS permissible value of unidentified reactor coolant leakage of 5 gpm. The inspectors at this point attempted to

determine when LaSalle had no longer considered any form of CRD removal as an OPDRV. The inspectors reviewed a 10 CFR 50.59 Evaluation performed by the licensee in 1999 in which the licensee removed certain tasks from those considered an OPDRV including CRD removal and replacement with the caveat that the control rod associated with the CRD being removed be fully withdrawn with its velocity limiter serving as a isolation at the reactor vessel penetration. This document represented the shift in definition the inspectors were looking for. The term OPDRV appears in 10 different LaSalle TSs and 15 different action statements. The term is not defined by the TS and as such appears to be open to interpretation. The inspectors informed the site that any change in interpretation of a TS would need review and approval through the NRC as a license amendment. In this instance, the 15 action requirements all state, "initiate action to suspend OPDRVs". This means as the definition of OPDRV is changed without NRC review and approval, the licensee would follow their TSs in a different manner as they would not suspend activities or actions as they would have previously.

The licensee has responded to the inspectors concerns, by modifying procedure OP-LA-117-101-1001 to once again reinstate CRD removal as an OPDRV returning to the definition originally recognized when the station was originally licensed.

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

b. Findings

No findings of significance were identified.

40A3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report (LER) 05000373/2010002-00: Division 1 Diesel Generator Cooling Water Pump Trip and Auto Re-Start Due to Shutdown Attempt with Remote Automatic Start Signal Present

a. Inspection Scope

The inspectors reviewed the plant's response to an automatic re-start of the division 1 DG cooling water pump on July, 26, 2010. The pump had been running to provide cooling water to the "A" RHR pump room cooler, the LPCS/RCIC room cooler and the LPCS pump motor cooler. The licensee was in the restoration steps of several procedures following the completion of the quarterly in-service test of the RCIC pump. In addition to running the RCIC pump, the LPCS and "A" RHR pumps were run to maintain cooling and temperature equalization in the suppression pool during the surveillance. While these pumps were running the associated room cooling fans and the 0 DG cooling water pump was running to maintain environmental conditions in the rooms. Once the RCIC, LPCS, and "A" RHR pumps were no longer needed the licensee secured them per procedure. In addition, temperature conditions in the "A" RHR pump room had decreased below the fan reset temperature of 104 °F. The operator in performing the "A" RHR shutdown procedure noted this along with the fact that the RHR pump was already shutdown and followed the step to shutdown the 0 DG cooling water pump. Unfortunately, the LPCS/RCIC room remained at 107 °F and as such its cooling fan was still running. When the operator shutdown the cooling water pump, a pump trouble light was immediately received due to the fact that a valid start demand

signal remained in place contrary to the operator manually shutting down the pump. The operator reset the trouble alarm by taking the cooling water pump's control switch to trip again. This had the affect of resetting the pump's breaker anti-pumping logic, which is designed to keep the power supply breaker from cycling open and closed when competing demand signals are present. Once the logic was reset and the control switch was released to the normal position, the pump auto-started as the LPCS/RCIC room fan running demanded the cooling water pump start. No safety-related systems were made unavailable due to this event.

The licensee has enhanced the "A" RHR shutdown procedure to instruct operators to consider all of the rooms cooled by the diesel cooling water pump prior to securing it. The operators were also trained on this event as a part of the licensed operator requalification process. Documents reviewed in this inspection are listed in the Attachment to this report. This LER is closed.

This event followup review constituted one sample as defined in IP 71153-05.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 13, 2010, the inspectors presented the inspection results to Mr. David Rhoades, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

- Radiological Hazard Assessment and Exposure Controls and ALARA Controls inspection with the Site Vice President, Mr. D. Rhoades, on August 6, 2010.
- Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation were discussed with the Site Vice President, Mr. D. Rhoades, on September 17, 2010.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

D. Rhoades, Site Vice President  
P. Karaba, Plant Manager  
K. Aleshire, Exelon EP Programs Manager  
D. Amezaga, GL 89-13 Program Owner  
D. Anthony, Exelon NDE Outage Manager West  
J. Bashor, Site Engineering Director  
L. Blunk, Operations Training Manager  
J. Gumnick, Senior ISFSI Project Manager  
H. Do, Corporate Senior ISI Staff Engineer  
P. Endress, Design Engineer  
M. Entwistle, Operation Training  
J.C. Feeney, NOS Lead Assessor  
J. Miller, System Engineering Senior Manager  
D. Schmit, Engineer Supervisor Mechanical/Structural  
J. Houston, Regulatory Assurance  
J. Hughes, EP Coordinator  
K. Ihnen, Nuclear Oversight Manager  
A. Kochis, ISI Engineer  
K. Hedgspeth, RP Manager  
B. Maze, ISFSI Project Manager  
J. Meyer, Maintenance Planner QV Inspector  
J. Miller, Senior NDE Specialist  
J. Paczolt, Operation Training  
B. Rash, Maintenance Director  
W. Hilton, Design Engineering Senior Manager  
K. Rusley, EP Manager  
J. Shields, ISI Program Manager  
S. Shields, Regulatory Assurance  
T. Simpkin, Regulatory Assurance Manager  
K. Taber, Operations Director  
W. Trafton, Shift Operations Superintendent  
J. Vergara, Regulatory Assurance  
G. Vickers, RP Technical Support Manager  
H. Vinyard, Work Management Director  
J. White, Site Training Director  
G. Wilhelmsen, Design Rapid Response Manager  
K. Lyons, Chemistry Manager  
M. Martin, Supervisor, Chemistry Programs  
C. Wilson, Station Security Manager

#### Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2  
B. Dickson, Branch Chief, Plant Support Team, DRS/RIII

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

05000373/2010002-00	LER	Division 1 Diesel Generator Cooling Water Pump Trip and Auto Re-Start Due to Shutdown Attempt with Remote Automatic Start Signal Present (Section 40A3)
---------------------	-----	---

### Closed

05000373/2010002-00	LER	Division 1 Diesel Generator Cooling Water Pump Trip and Auto Re-Start Due to Shutdown Attempt with Remote Automatic Start Signal Present (Section 40A3)
---------------------	-----	---

### Discussed

None

## 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.

### 1R01 Adverse Weather Protection

#### Procedures:

- EC 381062, Evaluation of Consequences of Increase in Initial Temperature of Cooling Water; Rev. 0

#### Issue Reports:

- 1101063; Dual Unit Shutdown Due to High Lake Temperature; 8/12/2010
- 1101121; Received WS Strainer D/P Alarms; 8/13/2010
- 1101219; Pin Hole Leak on U1 WS Strainer B/W Line; 8/13/2010

#### Working Documents:

- WO 1005688-01; CSCS Pond Sediment Deposition Check; 8/8/2008
- WO 1210846-01; CSCS Pond Sediment Deposition Check; 7/6/2010

#### Miscellaneous:

- EN 46173; Reactor Plan Event Notification, Fish Kill Due to Increased Temperatures; 8/13/2010
- Letter from David Rhoades, Exelon VP, to NRC: Request for Notice of Enforcement Discretion Concerning Ultimate Heat Sink; 8/12/2010
- LLP-97-052; Special Procedure Approval for Hydrographic Survey of the Ultimate Heat Sink (UHS); 11/15/1997

### 1R04 Equipment Alignment

#### Drawings:

- M101; P&ID Reactor Core Isolation Coolant System (R.C.I.C.); Rev. AD
- M101; P&ID Reactor Core Isolation Coolant (R.C.I.C.); Rev. BG

#### Working Documents:

- LOP-HP-01E; Unit 1 High Pressure Core Spray Electrical Checklist; Rev. 10
- LOP-HP-01M; Unit 1 High Pressure Core Spray Mechanical Checklist; Rev. 10
- LOP-IA-01M; Unit 1 Instrument Air System Mechanical Checklist; Rev. 15
- LOP-RI-01E; Unit 1 Reactor Core Isolation Cooling System Electrical Checklist; Rev.11
- LOP-RI-01M; Unit 1 Reactor Core Isolation Cooling System Mechanical Checklist; Rev.19
- LOP-RH-03E; Unit 2 RHR Service Water System Electrical Checklist; Rev. 6
- LOP-RHWS-2AM; Unit 2 RHR Service Water System Mechanical Checklist; Rev. 2

## 1R05 Fire Protection

### Miscellaneous:

- Fire Pre-Plan 2A DG Fuel Oil Storage Tank Room, 674', Fire Zone 8C2; 2/2/2006
- Fire Pre-Plan Reactor Building 786'6" Unit 2, Fire Zone 3D; 2/2/2006
- LSCS-FPR Table H.3-2; Combustible Loading and Extinguishing Capability; Rev. 4

## 1R06 Flooding

### Procedures:

- OP-LA-108-114-1001; LaSalle Post-Transient Panel Walk Down Aid; Rev. 0
- LOS-CW-W1; Weekly Ball Load Check Amertap System; Rev. 20

### Issue Reports:

- 1099882; NOS Id Opex Review Lacking Detail; 8/10/2010
- 1092721; Water Sprayed on 1CW05PB Pump Motor; 7/21/2010
- 1092702; Amertap Leak; 7/21/2010
- 1064242; Small Pinhole Leak on 1CW01DB, 'B' Amertap Ball Collector; 5/1/2010
- 1091821; ~ ¼" Hole in Side of U-1 'B' Amertap Collector Tank; 7/18/2010

### Drawings:

- M-154; P&ID Condenser Tube Cleaning System (Amertap System); Rev. 1

### Miscellaneous:

- LaSalle Operations Log (Amertap); 7/18/2010-7/19/2010
- S-10-5-5, QH 1 and QH2; Dynamic Simulator Scenario Guide; Cycle 10-5; Rev. 0
- LS-PSA-012; LaSalle PRA Internal Flood Analysis; Rev. 0
- LS PSA-013; LaSalle PRA Summary Notebook; Rev. 6
- PNO-I-10-004A/DCS 0500038708042010; Preliminary Notification of Event or Unusual Occurrence, Susquehanna Unit 1 Manual Scram and Shutdown Greater than 72 Hours due to an Internal Flooding Event; 8/4/2010

## 1R11 Licensed Operator Requalification Program

### Miscellaneous:

- Simulator Training Scenario 3<sup>rd</sup> Quarter 2010

## 1R12 Maintenance Effectiveness

### Issue Reports:

- 834067; U-1 RT System Isolation on Pump Start; 10/21/2008
- 910041; Reactor Water Cleanup System Isolation Due to Hi Diff. Flow; 4/21/2009
- 933567; Loss of Flow to Online RT F/DS when Deisolation New Filter; 6/21/2009
- 937357' U2 RT SSC Classified (A) (2) at Risk; 6/30/2009
- 953122; 2B DG B Starting Air Refrig. Air Dryer Did Not Start; 8/13/2009
- 961119; 2B DG A Starting Air Compressor Not Loading Properly; 9/2/2009
- 962046; 2B DG A Air Comp Unable to Maintain DG Air Receiver Press; 9/5/2009
- 972470; 2A DG Oil Cooler Flange Leak; 9/30/2009
- 986368; Received Unexpected 1B DG Trouble Alarm; 10/30/2009
- 1004324; 2B Diesel Generator Oil Leaks; 12/11/2009
- 1006784; Housekeeping: Small Pool of Oil under 1A DG AC Soakback Pump; 12/17/2009
- 1029448; 1B DG Cooler Leaking; 2/12/2010

- 1031936; 1A DG Voltage Response During LOS-DG-110; 2/17/2010
- 1032809; Severe Corrosion to Cooling Water Strainer End Cover; 2/19/2010
- 1041521; 1B DG Fuel Line Leak; 3/11/2010
- 1050553; 2B DG Minor Oil Leak; 3/31/2010
- 1055806; FME Found in a 1A DG Oil Cooler System; 4/13/2010
- 1067666; FM Found Inside Water Side of DG Oil Cooler; 5/10/2010
- 1090293; Fuel Oil Sample Failed; 7/13/2010
- 1095832; NRC Questions on 1B EDG Fuel Line IR 1041421; 7/28/2010
- 1103042; Loss of Unit 1 RWCU Panel Power; 8/18/2010
- 1113491; U1 RT System Classified "(A2) at Risk"; 9/15/2010
- 1115971; Found Damage to Stator During Cleaning; 9/21/2010

Working Documents:

- WO 1065449-01; Inspect 2A RT Recirculation Pump Motor Filter Strainer; 5/7/2010
- WO 1065448-01 Inspect Clean 1A RT Pump Motor Cavity Filter Strainer; 6/24/2010
- WO 1065451-01; Inspect 2B RT Recirculation Pump Motor Filter Strainer; 6/3/2010

Miscellaneous:

- 191/178; License Amendment LCO 3.8.3 Diesel Fuel Oil and Starting Air;
- B3.8.3; Diesel Fuel Oil and Starting Air; Rev. 33
- Maintenance Rule Functional Failures: Rolling 12 Months Report; 7/1/2010
- Maintenance Rule Scoping, Diesel-Generator Air Intake and Exhaust System; 7/26/2010
- Performance Criteria Report, DG-01 Reliability; 7/26/2010
- Performance Monitoring Summary – RT Rx Water Cleanup; 9/23/2010
- System Health Report: Common Unit Diesel Generator for 4/1/2010 to 6/30/2010; 7/26/2010
- System Health Report: Unit 1 Diesel Generator for 4/1/2010 to 6/30/2010; 7/26/2010
- System Health Report: Unit 2 Diesel Generator for 4/1/2010 to 6/30/2010; 7/26/2010
- Unofficial Operations Log, Noon Shift; 9/2/2009

1R13 Maintenance Risk Assessments and Emergent Work Control

Procedures:

- LOA-WS-101; Loss of Service Water; Rev. 5

Issue Reports:

- 1088525; 1A TDRFP Speed Control Error Message; 7/7/2010
- 1094635; 0 DG CWP Auto Trip when Secured per LOP-RH-13; 7/27/2010
- 1101139; Due to Shad Run at LSH Inspect and Clean WS Tunnel; 8/13/2010
- 1101141; 0 WS Strainer B/W Diverter Plate will not Rotate in Auto; 8/13/2010
- 1106491; Rosemount Card File Trouble Alarm; 8/27/2010
- 110989; Unplanned U1 Load Drop Due to High OG Flow; 8/12/2010
- 1117744; 2VD05C and 2VD07C was Found Not Running; 9/25/2010

Drawings:

- 1E-0-4412AC; Schematic Diagram Diesel Generator System "DG" Part 3; Rev X
- 1E-1-4089AB; Schematic Diagram Core Standby Cooling System "VY" Part 2; Rev. H
- 1E-1-4200ZD; Loop Schematic Diagram Nuclear Boiler Process Instrumentation System "NB" (B21A); Rev. C
- 1E-1-4201AH; Schematic Diagram Automatic Depressurization System "NB" (B21C) Part 8; Rev. M
- 1E-1-4201AH; Schematic Diagram Automatic Depressurization System "NB" (B21C) Part 8; Rev. M

- 1E-1-4221AA; Schematic Diagram Low Pressure Core Spray System "LP" (E21); Rev U
- 1E-1-4220AD; Schematic Diagram Residual Heat Removal Pump 1C System "RH" (e12) Part 4; Rev. Y
- 1E-1-4220AK; Schematic Diagram Residual Heat Removal System "RH" (E12) Part 10; Rev. Y
- 1E-1-4228AF; Schematic Diagram Reactor Water Cleanup System "RT" (G33) Part 6; Rev. M
- 1E-1-4232AH; Schematic Diagram Primary Containment & Reactor Vessel Isolation System "PC" (B21H) Part 8; Rev. J
- 1E-2-4072AB; Schematic Diagram Diesel-Gen. RM. Ventilation Sys. VD Pt. 2; Rev. E

Miscellaneous:

- EN 46279; High pressure Core Spray System Room Cooling Fans Found Not Operating; 9/25/2010
- IR 1088525; Event / Issues Report: Equipment Issue 1A TDRFP Speed Control Error Message; 7/7/2010
- IR 1094635; Human Performance Issue Verbal Report: Common Diesel Generator Cooling Water Pump Auto Trip; 7/26/2010
- IR 1094635; LaSalle Nuclear Station HU THU Alert: Common Diesel Generator Cooling Water Pump Auto Trip; 7/26/2010
- LaSalle Operations Log; 7/7/2010
- LaSalle Operations Log 7/26/2010 to 7/27/2010
- LaSalle Operator Logs 9/25/2010

1R15 Operability Evaluations

Procedures:

- LOS-AA-S101; Unit 1 Shiftly Surveillance; Rev. 67
- LOS-NB-SR1; Reactor Water Level Reference Leg Continuous Backfill System – Inoperability and Compensatory Actions; Rev. 2

Issue Reports:

- 1080601; Potential Problem Identified by Valve MFG- Velan; 6/15/2010
- 1088030; Procedure to Align RCIC to Draw Suction from CST; 7/2/2010
- 1091219; CDBI – Unable to Id SBLC Calcs Re: Head Tank; 7/15/2010
- 1098605; RX Water Level Reference Leg Continuous Fill Panel Low Flow; 8/6/2010
- 1098799; Instrument Backfill Panel Flowrate Trends; 8/6/2010
- 1112902; NOS ID: Operability Determination for SBLC Re: Head Tank; 9/14/2010
- 1119912; Wrong Value Logged for U-2 Sodium Pentaborate Concentration; 9/30/2010

Working Documents:

- OE10-001; Operability Evaluation RCIC Leak in CY Storage Tank (IR 1086216); Rev. 0
- OE10-003; Nonconforming Condition with Standby Liquid Control System; Rev. 0

Calculation:

- RI-21 / File Index 8750-05; Calculated NPSH for U1 RCIC Water-Leg Pump; 7/3/1991

Drawings:

- System Description: Reactor Vessel Instrumentation
- M-99; P & ID Standby Liquid Control System; Rev. AB

Miscellaneous:

- Analysis L-002540; Design Analysis Minor Revision: NPSH Margin for HPCS RUR and RCIC Pumps, Backpressure for RCIC Turbine; Rev. 1C

- Analysis L-003458; Design Analysis Major Revision for Standby Liquid Control System Pressures; 12/17/2009
- Att 1D; Unit One Spent Fuel Pool Map (undated)
- Commonwealth Edison Company (ComEd) Response to NRC Generic Letter 96-04, "Boraflex Degradation in Spent Fuel Pool Racks"; 11/6/1996
- EX 0008000; 50.59 Review Coversheet for Racklife Version 2.1.1; Rev. 0
- LOS-AA-S101, Fig A-4; Sodium Pentaborate Solution Temperature / Concentration Requirements; Rev. 67
- LOS-AA-S101, Fig A-5; Sodium Pentaborate Solution Volume / Concentration Requirements; Rev. 67
- LaSalle Operations Logs; 8/5/2010
- Licensee Spent Fuel Pool Availability Projection; 2/2009 – 2/2013
- LSCS-UFSAR 9.1; Spent Fuel Storage; Rev. 14, Rev. 18
- NCV 05000250/201009-03; NonCited Violation Failure to Maintain FSAR Description of Unit 3 Spent Fuel Pool Activities; 12/30/2009
- Sample Information Sheet for Sodium Pentaborate; 7/8/2010 Sample Time: 0320
- Sample Information Sheet for Sodium Pentaborate; 7/8/2010 Sample Time: 0336
- Sample Information Sheet for Sodium Pentaborate; 8/5/2010 Sample Time: 0151
- Sample Information Sheet for Sodium Pentaborate; 8/5/2010 Sample Time: 0229
- Sample Information Sheet for Sodium Pentaborate; 9/2/2010 Sample Time: 0122
- Sample Information Sheet for Sodium Pentaborate; 9/2/2010 Sample Time: 0141

#### 1R18 Plant Modifications

##### Procedures:

- CC-AA-112; Temporary Configuration Changes; Rev. 17

##### Issue Reports:

- 1097417; NRC ID: Monitoring Equip Installed per LLP-200-004; 8/3/2010

##### Working Documents:

- EC 379802/WO 1346598,133873,1330875; TCCP Installation and Removal: 2A Reactor Recirculation Flow Control Valve Position Failure Work Package; Rev. 0/Rev. 2
- EC 364220; Heater Drain Netdaq Installations; 1/18/2007
- LLP-2000-004; Special Procedure for Test Equipment Installations to Support Heater Drain System Monitoring (EC 340004/EC 339522/WO99157721); 12/10/2002
- LAP-820-7 (LLP-2000-004); Special Procedure Approval form for Special Procedure for Test Equipment Installations to Support Heater Drain System Monitoring (EC 340004/EC 339522/WO99157721); 12/10/2002
- WR 990157721.01; Install Temp. Monitoring EQ for LLP-2000-004; 4/12/2000

##### Miscellaneous:

- Unit 2 Temporary Alteration Tracking Log; 7/23/2010

#### 1R19 Post-Maintenance Testing

##### Procedures:

- LOP-HP-07; Temporary Fill for HPCS System Discharge Line; Rev. 3
- LOS-HP-Q1; HPCS System Inservice Test; Rev. 63
- LOS-SC-Q1; SBLC Pump Operability / Inservice Test and Explosive Valve Continuity Check; Rev. 29

Issue Reports:

- 1090247; 2A SBLC Pump Discharge Relief Lifted Early; 7/13/2010
- 1090426; SBLC Pump Pressure Oscillations During Operability Run; 7/13/2010
- 1090491; 2A SBLC Discharge Valve Inspection Results; 7/14/2010
- 1105708; Document LOP-VR-02 ATT C Results; 8/25/2010
- 1105746; Unexpected MCR Alarm Upon Startup of U1 VR; 8/25/2010
- 1105790; During LOS-CS-Q1 2VR05YA Shows Dual; 8/25/2010
- 1105894; Document U2 LOP-VR-02 ATT C Results; 8/25/2010
- 1105898; Received Momentary U-1 CRD Charging Water Pressure Low Alarm; 8/25/2010
- 1105921; VR Fan Combo Not Able to Maintain Adequate SEC Containment; 8/25/2010
- 1105923; RT Blowdown Flow Orifice Flange Leaking; 8/25/2010

Working Documents:

- WO 1333601; Bench test for IST / Replace Bellows; 7/14/2010
- WO 1365468-01; Troubleshoot and Replace the Blown Unit 1 Fuse 1B21A-F19 on 1B21-K752; Rev. 0

Miscellaneous:

- Operations Log, SBLC; 7/13/2010 – 7/16/2010

1R22 Surveillance Testing

Procedures:

- ER-AA-335-007; Ultrasonic Inspection for Determination of Sedimentation in Piping Systems or Components and Fluid Level Measurements; Rev. 2
- LOS-AA-S101; Unit 1 Shiftly Surveillance; Rev. 63
- LOS-DG-M2; 1A(2A) Diesel Generator Operability Test; Rev. 79
- LOS-DG-Q2; 1A (2A) Diesel Generator Auxiliaries Inservice Test; Rev. 50

Issue Reports:

- 1042847; Elevated DWFDS Fill Up Rate on Unit 1; 3/15/2010
- 1098805; Additional Shiftly Surveillance Guidance for DWEDS Requested; 8/6/2010

Working Documents:

- WO 1351255-01; LOS-DG-M2 2A Diesel Generator Att 2A-Idle; 7/26/2010

1EP6 Drill Evaluation

Miscellaneous:

- LaSalle 2010 3<sup>rd</sup>/4<sup>th</sup> Quarter PI Drill (Technical Support Center)

2RS1 Radiological Hazard Assessment and Exposure Controls

Issue Reports:

- 944216; Failed to Notice Incorrect Digit after Signing In to Radiation Work Permit; 7/21/2009
- 945167; Mechanical Maintenance Technician Entered High Radiation Area Under Wrong Radiation Work Permit; 7/23/2009
- 1039847; Higher than Normal dose Rates Due to Trash outside Dry Active Waste High Integrity Container; 1/8/2010
- 1032908; Nuclear Oversight Identified: Improvements for L1R13 Dose Recovery Plans; 2/19/2010

- 1065345; Airborne Air Sample 1RX Building Exhaust Filter Room; 5/3/2010
- 1085608; Issue Identified With Refuel Floor Contamination Monitoring; 6/29/2010

Miscellaneous:

- RWP 10010629; ALARA Post Job Review of L1R13: Drywell Scaffolding; 3/24/2010
- RWP 10010638; ALARA Post Job Review of L1R13: Drywell Control Rod Drive Pull/Put; 3/18/2010
- RWP 10010646; ALARA Post Job Review of L1R13: General Electric In-Service Inspection Nozzle Inspections Activities; 2/27/2010
- RWP 10010657; ALARA Post Job Review of L1R13: Repairs to 1B Reactor Recirculation Pump; 3/31/2010
- RWP 10010675; ALARA Post Job Review of L1R13: Refuel Floor Reactor Vessel Disassembly/Reassembly Activities; 3/24/2010

2RS2 Occupational ALARA Planning and Controls

Procedures:

- NF-LA-310-2000; Spent Fuel Pool Inventory Control; Rev. 6
- RP-AB-460; Transverse Incore Probe Area Access Controls; Rev. 1
- RWP 1001039; Unit 1 Transverse Incore Probe Room Activities; Rev. 0
- RWP 10010657; L1R13 Unit 1 Reactor Reticulation Pump and Motor Repair; Rev. 0
- RWP 10010675; Reactor Vessel Disassembly/Reassembly; Rev. 0
- RWP 10010638; Drywell Control Rod Drive Pull/Put; Rev. 0
- RWP 10010; General Electric Dry Well In-Service Inspection (Nozzle Inspection) Activities; Rev. 0

Issue Reports:

- 995859; Elevated Dose on Scorpion Platform Due to Design – Crud Traps; 11/19/2009
- 1001420; E-2 Certification Package did Not Have Complete Dose Input; 12/3/2009
- 1021342; Nuclear Oversight Identified: Elevation of Station ALARA Program; 1/25/2010
- 1021847; L1R13 Lessons Learned: ALARA Suggestion; 1/27/2010
- 1029333; L1R13 Lessons Learned: ALARA Dose Goal Exceeded; 2/12/2010
- 1037249; Nuclear Oversight Identified: Unit 1 Reactor Building ALARA Improvement Opportunities; 3/1/2010
- 1040753; Refuel Floor/RBSMP Collective Radiation Exposure Dose Savings; 3/10/2010
- 1043881; L1R13 Radiation Protection Goal Summary and Apparent Cause Evaluation; 3/5/2010
- 1047480; Lessons Learned L1R13 Radiation Work Permit 10010676 Refuel Floor in Vessel Visual I Post Job Review; 3/24/2010
- 1059666; Refuel Floor Dose Improvement Initiatives; 4/21/2010
- 1062855; Detailed ALARA Suggestion for Operations Department; 4/28/2010
- 1063591; Operations Dose Savings Opportunity; 4/30/2010
- 1065188; Request Common Cause Analysis on L1R13 Collective Radiation Exposure; 3/4/2010
- 1075630; FASA Deficiency: Radiation Work Permit Did Not Include Stop Work Conditions; 6/1/2010
- 1075994; Dose Higher Since Lead Installation; 6/2/2010

Miscellaneous:

- LaSalle Nuclear Station L1R13 Refueling Outage Report; 2/2010

#### 4OA1 Performance Indicator Verification

##### Issue Reports:

- 1108040; Security – Fire in Dumpster on LaSalle Practice Range; 8/31/2010
- 1108054; Maintenance Rule Action Plan Objective at Moved Out; 8/31/2010

##### Working Documents:

- LOS-DG-M1; Diesel Generator Start and Run Logs, Attachment E; various dates 2/2010
- LOS-DG-M1; Diesel Generator Start and Run Logs, Attachment E; various dates 6/2010
- LOS-DG-109, LOS-DG-M1; Diesel Generator Start and Run Logs, Attachment E; various dates 3/2010

##### Miscellaneous:

- MSPI and WANO Reporting for Emergency AC Power; Monthly Reports for 7/2009 – 6/2010
- MSPI and WANO Reporting for High Pressure Core Spray; Monthly Reports for 7/2009 – 6/2010
- MSPI and WANO Reporting for Residual Heat Removal System; Monthly Reports for 7/2009 – 6/2010
- Reactor Coolant System Sample Data from 7/ 2009 to 6/2010
- Monthly Occupational Performance Indicator Assessment Catalog from 7/2009 to 6/2010
- Tabulation Index of Radiologically Controlled Area Exit Dose Greater Than 100 millirem from 7/ 2009 to 5/2010
- Gaseous Effluent Summary Data from 7/ 2009 to 6/2010

#### 4OA2 Identification and Resolution of Problems

##### Procedures:

- CPS 3711.01; CPS Operations with the Potential to Drain the Reactor Vessel (OPDRV); Rev. 0a
- CRD-007; GE Hitachi Nuclear Energy CRDM Exchange Processes; Rev. 11
- MA-AB-RS-6-00602; Control Rod Drive Removal and Installation; Rev. 0
- OP-AA-102-1001; Operator Burden and Operationally Significant Decisions Impact Assessment Program; Rev. 2
- OP-AA-102-103; Operator Work-Around Program; Rev. 3
- OP-AB-117-101; Operations with the Potential to Drain the Reactor Vessel; Rev. 0
- LOP-NB-02; Operations with the Potential to Drain the Reactor Vessel; Rev. 10

##### Issue Reports:

- 850427; 2A RT Filter Demin Failed to De-isolate; 11/29/2008
- 902423; Operator Work Around Board Meeting Results; 4/3/2009
- 923329; CRD FCV Placed in Manual from Auto for Rod Exercising; 5/23/2009
- 953852; Alterex temperature Rose Following the Unit 2 Scram; 8/16/2009
- 979442; NOS ID: TLO Temperature Control Using MOV (LOP-TO-06); 10/14/2009
- 1003533; Evaluate WO for Operator Burden; 12/9/2009
- 1006549; Evaluate RB D/P Controllers for Potential Operator Challenge; 12/17/2009
- 1010671; U1 MMS Degraded Automatic Function (Noble Metals); 12/30/2009
- 1048499; Operator Work Around Board Meeting; 3/26/2010
- 1091863; Aggregate Operator Burden Review; 7/18/2010
- 1092580; Groundwater Monitoring Well Installation Suspended; 7/20/2010
- 1092416; WO Needed to Support Monitoring Well Installation; 7/20/2010
- 1089652; NDE Rejectable PT Indications of Final Welds on Patch Plates; 7/11/2010
- 1091863; Aggregate Operator Burden Review; 7/18/2010

- 1100509; RCMS – Disarmed Control Rod Status not Readily Available; 8/16/2010
- 1118303; Operator Work Around Board 9/14/10 Meeting; 9/27/2010

Working Documents:

- EC 380464; Evaluation of Preconditioning of TS and TRM Pressure Switches; Rev. 1, 7/21/2010, 7/23/2010 and 7/28/2010
- L99-869; 10 CFR 50.59 Safety Evaluation Form; LOP-NB-02, rev. 1, Operations with the Potential to Drain the Reactor Vessel; 9/20/1999
- WO 1085182-01; Exchange Control Rod Drive at Core Location 34-59 (L2R12)
- WO 1221296-01; Exchange Control Rod Drive at Core Location 30-43 (L2R13)

Drawings:

- Fig. 4.1; Monitoring Well and Sampling Locations LaSalle Generation Station; 5/2006
- M-57; P & ID Feedwater & Zinc; Rev. Q
- M-74; P & ID Cycled Condensate Storage; Rev. AD
- S-170; Miscellaneous Outdoor Foundations; Rev S78
- Schematic for 1CY 01T & 2 CY01T; 8/18/1994

Issue Reports Resulting from NRC/IEMA Inspection:

- 1095832; NRC Questions on 1B EDG Fuel Line IR 1041421; 7/28/2010
- 1097417; NRC ID: Monitoring Equip Installed per LLP-200-004; 8/3/2010
- 1109704; MSPI Basis Document Revision; 9/3/2010
- 1109208; NRC: Question on Preconditioning Prior to DG Fast Start; 9/2/2010
- 1092393; NRC Id'd: 2<sup>nd</sup> Quarter Exit Comments regarding OPDRV's; 7/20/2010
- 1096201; NRC Question Maintenance Rule Performance Criteria; 7/30/2010
- 1113490; NRC Identified Concern; 9/15/2010

Miscellaneous:

- ER-AA-335-004 / WO 1257328-04; Ultrasonic Thickness Calibration for Examination of Unit 1 CY tank; 7/5/2010
- IR 1028441; Equipment Apparent Cause Evaluation: Pressure Switch 1B21-N061 KK Contacts Not Open; 2/10/2010
- IR 1085357/1089216: Equipment Issue Report for Leak Identified at Bottom of 1CY01T; 7/6/2010
- IR 1086216; Adverse Condition Monitoring and Contingency Plan for CY System Monitoring and Outside Frac Tank Monitoring (Rev. 1); 7/2/2010
- IR 1086216; Issue Resolution Documentation for Tritium Leakage Identified in the Unit 1 CY Tank; 7/26/2010
- L2R12 – Schedule During CRD Exchanges; 1/29/2009 – 2/13/2009
- L1R13 – Schedule During CRD Exchanges; 2/18/2010 – 3/4/2010
- Memorandum from DRP Project Directorate on TIA – Fermi 2 Performance of an Operation with the Potential to Drain the Reactor Vessel; Oct 23, 1995
- MW-LS-104S; Daily Monitoring of H3 (pCi/L) Level (Graph); 7/1/2010 – 7/23/2010
- OP-AA-106-101-2006; System Description Information Sheet for CY Storage Tanks
- Operator Workaround Board Meeting Agenda, 9/14/2010
- Operator Work Arounds and Challenges List as of 9/7/2010
- Operations Log Entries for 7/2/2010 – 7/6/2010
- PORC 10-012; Plant Operations Review Committee Meeting: EC 380464 – Evaluation of Preconditioning of TS and TRM Pressure Switches; 7/28/2010
- Troubleshooting Plan: Loose Terminal Screws at Common IO Module 1UD-FW314-10; Rev. 10

- Q02-10.xls; Operator Burden Aggregate Assessment; 3/2010 – 6/2010
- UFSAR 9.2-25; Cycled Condensate System; Rev. 14

4OA3 Followup of Events and Notices of Enforcement Discretion

Miscellaneous:

- LER 2010-002-00; Division 1 Diesel Generator Cooling Water Pump Trip and Auto Re-Start Due to Shutdown Attempt with Remote Automatic Start Signal Present; 9/24/2010

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
ALARA	As-Low-As-Is-Reasonably-Achievable
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CRD	Control Rod Drive
CSCS	Core Standby Cooling System
CST	Condensate Storage Tank
CY	Cycled Condensate
DG	Diesel Generator
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
HPCS	High Pressure Core Spray
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Issue Report
IST	In-Service Testing
LER	Licensee Event Report
LPCS	Low Pressure Core Spray
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OG	Off Gas
OPDRV	Operations with the Potential to Drain the Reactor Vessel
OWA	Operator Workaround
PARS	Publicly Available Records System
PCP	Process Control Program
PI	Performance Indicator
PMT	Post-Maintenance Testing
RAM	Radioactive Materials
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RP	Radiation Protection
RT	Reactor Water Cleanup
RWCU	Reactor Water Cleanup
RWP	Radiation Work Permit
SBLC	Standby Liquid Control
SDP	Significance Determination Process
TDRFP	Turbine Driven Reactor Feed Pump
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
VHRA	Very High Radiation Area
WO	Work Order
WS	Service Water

November 2, 2010

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

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2  
NRC INTEGRATED INSPECTION REPORT 05000373/2010004;  
05000374/2010004

Dear Mr. Pacilio:

On September 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your LaSalle County Station, Units 1 and 2. The enclosed report documents the results of this inspection, which were discussed on October 13, 2010, with the Site Vice President, Mr. David Rhoades, 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, no findings of significance were identified.

In accordance with 10 CFR 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 document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,  
**/RA/ By N. Shah Acting For/**  
Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

Docket Nos. 50-373; 50-374

License Nos. NPF-11; NPF-18

Enclosure: Inspection Report 05000373/2010004; 05000374/2010004

w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

**DISTRIBUTION:**

See next page

DOCUMENT NAME: G:\DRPIII\1-Secy\1-Work In Progress\LAS 2010 004.docm

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	C	RIII	N	RIII		RIII	
NAME	NShah for KRiemer:cs		NShah for CScott					
DATE	11/02/10		11/02/10					

**OFFICIAL RECORD COPY**

Letter to M. Pacilio from K. Riemer dated November 2, 2010

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2  
NRC INTEGRATED INSPECTION REPORT 05000373/2010004;  
05000374/2010004

DISTRIBUTION:

Daniel Merzke  
RidsNrrDorlLp3-2 Resource  
RidsNrrPMLaSalle  
RidsNrrDirslrib Resource  
Steven West  
Steven Orth  
Jared Heck  
Allan Barker  
Carole Ariano  
Linda Linn  
DRPIII  
DRSIII  
Patricia Buckley  
Tammy Tomczak  
[ROPreports Resource](#)