

November 2, 2007

Mr. Christopher M. Crane  
President and Chief Nuclear Officer  
Exelon Nuclear  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2  
NRC INTEGRATED INSPECTION REPORT 05000373/2007004;  
05000374/2007004

Dear Mr. Crane:

On September 30, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your LaSalle County Station, Units 1 and 2. The enclosed report documents the results of this inspection, which were discussed on October 2, 2007, with the Site Vice President, Mr. Daniel Enright, and other members of your staff.

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

Based on the results of this inspection, two self-revealed findings of very low safety significance (Green) were identified. One of these findings also involved a violation of NRC requirements. However, because the finding associated with the violation was of very low safety significance and because the issue was entered into the licensee's corrective action program, the NRC is treating the issue as a Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of any finding or Non-Cited Violation in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors' Office at the LaSalle County Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000373/2007004; 05000374/2007004  
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - LaSalle County Station  
LaSalle County Station Plant Manager  
Regulatory Assurance Manager - LaSalle County Station  
Chief Operating Officer  
Senior Vice President - Nuclear Services  
Senior Vice President - Mid-West Regional  
Operating Group  
Vice President - Mid-West Operations Support  
Vice President - Licensing and Regulatory Affairs  
Director Licensing - Mid-West Regional  
Operating Group  
Manager Licensing - Clinton and LaSalle  
Senior Counsel, Nuclear, Mid-West Regional  
Operating Group  
Document Control Desk - Licensing  
Assistant Attorney General  
Illinois Emergency Management Agency  
State Liaison Officer  
Chairman, Illinois Commerce Commission

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Letter to C. Crane from K. Riemer dated November 2, 2007

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2  
NRC INTEGRATED INSPECTION REPORT 05000373/2007004;  
05000374/2007004

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000373/2007004; 05000374/2007004

Licensee: Exelon Generation Company, LLC

Facility: LaSalle County Station, Units 1 and 2

Location: Marseilles, Illinois

Dates: July 1, 2007, through September 30, 2007

Inspectors: D. Kimble, Senior Resident Inspector  
F. Ramírez, Resident Inspector  
T. Bilik, Regional Engineering Inspector  
B. Dickson, Senior Resident Inspector – Clinton Station  
R. Jickling, Senior Emergency Preparedness Inspector  
M. Mitchell, Health Physicist  
C. Phillips, Senior Resident Inspector – Dresden Station  
J. Tapp, Reactor Engineer  
J. Yesinowski, Illinois Emergency Management Agency

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000373/2007004, 05000374/2007004; 07/01/2007 - 09/30/2007; LaSalle County Station, Units 1 & 2; Surveillance Testing and Radioactive Material Processing and Transportation Report.

The inspection was conducted by resident inspectors and regional inspectors. The report covers a three month period of baseline inspection. Two Green findings and one associated Non-Cited Violation (NCV) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using U.S. Nuclear Regulatory Commission (NRC) 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.

During the inspection, the NRC reviewed a letter dated June 22, 2007, from Susan R. Landahl, Site Vice President of LaSalle County Station, to the NRC Office of Enforcement, which requested that Confirmatory Order EA-04-170 be rescinded because LaSalle County Station had complied with its terms. The inspection verified that LaSalle County Station has fully implemented the requirements of Confirmatory Order EA-04-170, however, compliance with a Confirmatory Order is not grounds for rescission. Although it will not be rescinded, no further action is required to comply with the Confirmatory Order.

### **A. Inspector-Identified and Self-Revealed Findings**

#### **Cornerstone: Mitigating Systems**

- Green. A self-revealing finding of very low safety significance was identified following the inadvertent actuation of the 2B residual heat removal (RHR) pump minimum flow valve (2E12-F064B) during a Unit 2 RHR pump 2B/2C flow indication calibration. Specifically, licensee instrument technicians returning the 2E12-N015B flow instrument to service created a pressure spike when valving in the instrument following calibration; the pressure spike was sufficient to cause the 2B RHR pump injection flow high alarm (2H13-P601-B307) setpoint to be reached, and the 2B RHR pump minimum flow valve automatically repositioned shut as a result. No violations of NRC requirements or regulations were identified by the inspectors.

The performance deficiency associated with this finding involved the failure of licensee instrument maintenance technicians to exercise due caution when restoring the 2E12-N015B transmitter (2B RHR pump flow indication) to service following calibration, such that a pressure spike was created that caused the 2B RHR pump minimum flow valve to automatically reposition shut. This error resulted in the unnecessary and unintentional actuation of a safety-related component, and rendered the 2B RHR train inoperable per Technical Specifications. The finding was determined to be of more than minor significance in that it had a direct impact on the objective for the Mitigating Systems cornerstone for reactor safety. Because the finding did not represent the actual loss of a safety function for any single train or system, and did not screen as

potentially risk significant due to a seismic, flooding, or severe weather initiating event, the inspectors concluded that it was of very low safety significance and within the licensee's response band. In addition, the inspectors determined that the finding was related primarily to the cross-cutting area of Human Performance since the licensee's instrument maintenance technicians did not appropriately utilize applicable human error prevention techniques, such as self checking, etc., when restoring the 2E12-N015B flow transmitter to service (H.4(a)). Corrective actions planned and completed by the licensee included the performance of a quick Human Performance investigation and conducting a detailed apparent cause evaluation analysis for the event. (Section 1R22.1)

**Cornerstone: Public Radiation Safety**

- Green. A self-revealing NCV of 10 CFR 71.5 was identified when a package of licensed material offered for shipment exceeded the external radiation limit contained in 49 CFR 173. The shipment was surveyed upon receipt at the final destination by individuals qualified in radioactive materials package receipt and the radiation levels at the package surface were in excess of 200 millirem (mrem)/hr. As a result of this event, the licensee changed the shipping procedure to require that all items placed in the package be surveyed prior to closure, survey and shipment.

The cause of the error was a failure to assure that all package contents were properly surveyed and secured so they could not shift and create a change in radiation field during transport. The finding, under the Public Radiation Safety cornerstone, does not involve the application of traditional enforcement. The finding was more than minor as it involved an occurrence in the licensee's radioactive material transportation program that is contrary to NRC or Department of Transportation (DOT) regulations and is a key attribute under the objective of the radiation safety cornerstone to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain, as a result of routine civilian nuclear reactor operation. Although the limits for external radiation levels on a package were exceeded, the finding is of very low safety significance because the area of the package having the higher external radiation levels would not have been accessible to a member of the public. The inspectors determined that the finding had a cross-cutting aspect associated with problem identification and resolution, in that the licensee did not implement and institutionalize operating experience through changes to procedures (P.2(b)). (Section 2PS2.1)

**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 September 2, 2007, power was reduced to approximately 75 percent to perform control rod and turbine surveillance tests, a control rod sequence exchange, and fuel channel distortion monitoring. The unit returned to operation at full power on September 3, 2007. On September 30, 2007, power was reduced to approximately 76 percent to perform a control rod sequence exchange and fuel channel distortion testing. The unit returned to operation at full power later that same day and remained operating at or near full power for the remainder of the inspection period.

#### Unit 2

The unit began the inspection period operating at full power. On July 20, 2007, a power reduction to approximately 76 percent was initiated to permit repairs to the mechanical linkage for one of the three position indication transmitters associated with one of four main turbine control valves (TCVs). The evolution had to be temporarily halted due to problems with the turbine speed control on both the 2A and 2B turbine-driven reactor feed pumps (TDRFPs) (Section 4OA3.1). On July 21, 2007, the power reduction to about 76 percent was completed and the TCV position indication repairs were performed. The unit returned to operation at full power later that same day.

On August 11, 2007, power was reduced to about 81 percent to facilitate repairs to the 2A TDRFP turbine speed control. Full power operation was resumed later that same day. On August 13, 2007, power was again reduced to approximately 82 percent to facilitate additional TCV position indication emergent repairs, and the unit resumed full power operation later that same day.

On September 9, 2007, power was reduced to about 75 percent to perform a control rod sequence exchange, various surveillance tests, and fuel channel distortion monitoring. After completing these activities, power was further reduced to approximately 60 percent to perform a final set of repairs/modifications for the remaining TCV position indication linkages that had not previously been upgraded. Full power operation was restored later that same day, and the unit continued to operate at or near full power for the remainder of the inspection period.

### **1. REACTOR SAFETY**

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

1R01 Adverse Weather Protection (71111.01)

.1 Readiness For Impending Adverse Weather Condition – Severe Thunderstorm Watch

a. Inspection Scope

The inspectors performed an assessment of the licensee's preparations for adverse weather, including conditions that could lead to loss of off-site power and other conditions that could result from high winds or tornado-generated missiles. The licensee's procedures and preparations during severe weather conditions in LaSalle County over a three day period from August 14, 2007 through August 16, 2007, were reviewed by the inspectors and were verified to be adequate. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to respond to specified adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures.

This review constituted a single inspection sample.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Semiannual Complete System Alignment Verification

a. Inspection Scope

Due to the system's risk significance, the inspectors selected the Unit 1 and Unit 2 reactor core isolation cooling (RCIC) systems for a complete alignment verification. The inspectors conducted physical verifications of the mechanical and electrical equipment lineups, material condition, component labeling, component and equipment cooling, and hangers and supports, and verified supporting system operability to ensure that ancillary equipment or debris did not interfere with equipment operation.

This complete system alignment verification constituted a single inspection sample.

b. Findings

No findings of significance were identified.

.2 Quarterly Partial System Alignment Verifications

a. Inspection Scope

The inspectors performed a partial walkdown of the following equipment trains to verify operability and proper equipment lineup. These systems were selected based upon risk

significance, plant configuration, system work or testing, or inoperable or degraded conditions:

- Unit 1 RCIC system;
- Unit 1 Division 1 and Division 2 emergency diesel generators (EDGs) with the Unit 1 Division 3 EDG out of service for planned maintenance;
- Unit 2 standby gas treatment (SBGT) system with the Unit 1 SBGT system out of service for planned maintenance; and
- Unit 1 Division 2 residual heat removal service water (RHRSW) system with Unit 1 Division 1 RHR out of service for planned maintenance.

The inspectors verified the position of critical redundant equipment and looked for any discrepancies between the existing equipment lineup and the required lineup.

These partial equipment alignments constituted four inspection samples.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Protection Zone Inspections

a. Inspection Scope

The inspectors walked down the following risk significant areas looking for any fire protection issues. The inspectors selected areas containing systems, structures, or components that the licensee identified as important to reactor safety.

- Fire Zone 7C4, Unit 2 high pressure core spray EDG pump room, 674'0";
- Fire Zone 3I4, Unit 2 low pressure core spray (LPCS)/RCIC pump cubicle, 673'4";
- Fire Zone 4B, auxiliary building lower ventilation equipment floor, 786'6";
- Fire Zone 2H2, Unit 1 high pressure core spray pump cubicle, 694'6";
- Fire Zone 4F1, Unit 1 Division 1 essential switchgear room, 710'6"; and
- Fire Zone 4F2, Unit 2 Division 1 essential switchgear room, 710'6".

The inspectors reviewed the control of transient combustibles and ignition sources, fire detection equipment, manual suppression capabilities, passive suppression capabilities, automatic suppression capabilities, and barriers to fire propagation.

These quarterly fire protection zone inspections constituted six inspection samples.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

.1 Semiannual Internal Flooding Review

a. Inspection Scope

The inspectors reviewed the licensee's flooding mitigation plans and equipment to determine consistency with design requirements and the risk analysis assumptions related to internal flooding. The following specific plant areas particularly susceptible to internal flooding were inspected:

- Units 1 and 2 turbine building, 710' 0" elevation.

Walkdowns and reviews performed considered design measures, seals, drain systems, contingency equipment condition and availability of temporary equipment and barriers, performance and surveillance tests, procedural adequacy, and compensatory measures.

This semiannual internal flooding review constituted a single inspection sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

a. Inspection Scope

The inspectors observed a training crew during an evaluated simulator scenario and reviewed licensed operator performance in mitigating the consequences of events. The scenario included multiple equipment and instrumentation failures, and the transient resulted in a complex loss of coolant accident. Areas observed by the inspectors included: clarity and formality of communications, timeliness of actions, prioritization of activities, procedural adequacy and implementation, control board manipulations, managerial oversight, emergency plan execution, and group dynamics.

Although a Site Area Emergency declaration was required by the scenario conditions, the training crew personnel only recognized and issued a less significant Alert emergency declaration. The inspectors observed the training instructors' critique of the crew's performance and verified that: the error had been identified by the instructors; that the applicable members of the training crew were scheduled for appropriate remediation prior to resumption of licensed duties; that the failure to properly classify the emergency event was appropriately reflected in the licensee's emergency preparedness drill and exercise performance indicator data; and that the issue was entered into the licensee's corrective action program (CAP).

This quarterly licensed operator training observation constituted a single inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's handling of performance issues and the associated implementation of the Maintenance Rule of the Code of Federal Regulations (10 CFR 50.65) to evaluate maintenance effectiveness for the selected systems. The following systems were selected based on being designated as risk significant under the Maintenance Rule, being in the increased monitoring (Maintenance Rule category a(1)) group, or due to an inspector identified issue or problem that potentially impacted system work practices, reliability, or common cause failures:

- Control room and auxiliary electric equipment room ventilation (VC/VE) system issues;
- Reactor recirculation flow control valve hydraulic issues; and
- TDRFP turbine governor control issues.

The inspectors' review included verification of the licensee's categorization of specific issues including evaluation of the performance criteria, appropriate work practices, identification of common cause errors, extent of condition, and trending of key parameters. Additionally, the inspectors reviewed the licensee's implementation of the Maintenance Rule requirements, including a review of scoping, goal-setting, performance monitoring, short-term and long-term corrective actions, functional failure determinations associated with the condition reports reviewed, and current equipment performance status.

These maintenance effectiveness reviews constituted three inspection samples.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed and observed emergent work, preventive maintenance, or planning for risk significant maintenance activities. The inspectors observed maintenance or planning for the following activities or risk significant systems undergoing scheduled or emergent maintenance.

- Division 1 '0' EDG surveillance failure and emergent repairs;
- Unit 2 TCV linear voltage differential transformer failures and emergent repairs;
- Unit 2 TDRFP turbine governor failures and emergent repairs;

- Emergent corrective actions associated with ultimate heat sink high temperatures;
- Unit 1 main turbine master trip solenoid valve performance issues and troubleshooting; and
- Emergent troubleshooting and repairs to the Unit 2 motor-driven reactor feedwater pump minimum flow valve air actuation circuit.

The inspectors also reviewed the licensee's evaluation of plant risk, risk management, scheduling, and configuration control for these activities in coordination with other scheduled risk significant work. The inspectors verified that the licensee's control of activities considered assessment of baseline and cumulative risk, management of plant configuration, control of maintenance, and external impacts on risk. In-plant activities were reviewed to ensure that the risk assessment of maintenance or emergent work was complete and adequate, and that the assessment included an evaluation of external factors. Additionally, the inspectors verified that the licensee entered the appropriate risk category for the evolutions.

The inspectors' reviews of these issues constituted six inspection samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the technical adequacy of the following operability evaluations to determine the impact on Technical Specifications, the significance of the evaluations, and to ensure that adequate justifications were documented.

- Issue Report (IR) 643099: 2D main steam isolation valve limit switch temperatures;
- OE 06-02, Revision 6: Evaluation of the instrument nitrogen system with respect to safety/relief valves and the low-low set feature logic;
- IR 648422: Unit 2 main turbine digital electro-hydraulic control (DEHC) maximum combined flow settings;
- IR 544587: Evaluation of metallic debris from General Electric control rod blades; and
- IR 657860: Evaluation of service water line vibration issues associated with the return header from the Unit 1 turbine building closed cooling water (TBCCW) heat exchangers.

Operability evaluations were selected based upon the relationship of the safety-related system, structure, or component to risk.

The inspectors' review of these operability evaluations and issues constituted five inspection samples.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (PMT) (71111.19)

a. Inspection Scope

The inspectors selected the following post-maintenance activities for review. Activities were selected based upon the structure, system, or component's ability to impact risk.

- Division 1 '0' EDG testing following emergent maintenance;
- 2B TDRFP emergent repairs PMT;
- 1B EDG operability test after a major planned maintenance work window; and
- 1A EDG operability test after a major planned maintenance work window.

The inspectors verified by witnessing the test or reviewing the test data that post-maintenance testing activities were adequate for the above maintenance activities. The inspectors reviews included, but were not limited to, integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use and compliance, control of temporary modifications or jumpers required for test performance, documentation of test data, Technical Specification applicability, system restoration, and evaluation of test data. Also, the inspectors verified that maintenance and post-maintenance testing activities adequately ensured that the equipment met the licensing basis, Technical Specifications, and UFSAR design requirements.

The inspectors' review of these post maintenance testing activities constituted four inspection samples.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 General Surveillance Tests

a. Inspection Scope

The inspectors selected the following general surveillance test activities for review. Activities were selected based upon risk significance and the potential risk impact from an unidentified deficiency or performance degradation that a system, structure, or component could impose on the unit if the condition were left unresolved:

- LOS-DG-M2: 1A EDG idle start test;
- LIP-RH-602B: 2B & 2C RHR pump flow indication calibrations;
- LOS-VC-M1, Attachment B: control room emergency makeup unit Train B test; and
- LOS-RD-SR7: fuel channel distortion testing/monitoring.

The inspectors observed the performance of surveillance testing activities, including reviews for preconditioning, integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use, control of temporary modifications or jumpers required for test performance, documentation of test data, Technical Specification applicability, impact of testing relative to performance indicator reporting, and evaluation of test data.

The review of these general surveillance testing activities by the inspectors constituted four inspection samples.

b. Findings

Introduction

A self-revealing finding of very low safety significance (Green) was identified following the inadvertent actuation of the 2B RHR pump minimum flow valve (2E12-F064B) during a Unit 2 RHR pump 2B/2C flow indication calibration. Specifically, licensee instrument technicians returning the 2E12-N015B flow instrument to service created a pressure spike when valving in the instrument following calibration; the pressure spike was sufficient to cause the 2B RHR pump injection flow high alarm (2H13-P601-B307) setpoint to be reached, and the 2B RHR pump minimum flow valve automatically repositioned shut as a result.

Description

On August 09, 2007, at approximately 1:36 a.m., instrument maintenance technicians were in the process of performing surveillance LIP-RH-602B, "Unit 2 RHR Pump 2B/2C Flow Indication Calibration." Technicians were in the process of returning transmitter 2E12-N015B to service by procedure following calibration when operators in the main control room unexpectedly received the 2B RHR pump injection flow high alarm (2H13-P601-B307), and the 2B RHR pump minimum flow valve (2E12-F064B) closed indication. All other plant parameters were normal.

The work was stopped. Following discussions between control room operators and the instrument maintenance technicians, the on-watch operations crew confirmed that the technicians had finished valving in the transmitter and that no additional inadvertent valve actuations would occur. The 2B RHR minimum flow valve was then re-opened by operations personnel. During the approximately four minutes that the 2B RHR pump minimum flow valve was closed, the 2B RHR train was considered by operators to have been inoperable and the appropriate Technical Specifications action statement entered.

A subsequent review of the event revealed that the 2E12-N015B transmitter (2B RHR pump flow indication) shared a sensing line with several other instruments (2E12-N010BA, "2B RHR Flow 'A' Pressure Differential"; 2E12-N010BB, "2B RHR Flow 'B' Pressure Differential"; and 2C61-N001, "2B Remote Shutdown Transmitter"). Additionally, the 2E12-N010BA differential pressure switch had a setpoint that was known to be very sensitive to variations in the sensing line pressure, and set at a mere 0.397 psid. Unlike the procedure being performed, LIP-RH-602B, several related instrument procedures contained detailed precautions regarding potential control

room alarms and the possibility of inadvertent actuation of the RHR pump minimum flow valve if instruments were not valved back into service with due caution. Although the procedure in question, LIP-RH-602B, did not contain such notes and precautions on the sensitivity of this shared sensing line, licensee personnel following up on the event concluded that the procedure was adequate as written and that the notes and precautions contained in similar procedures constituted only enhancements. The instrument maintenance technicians performing the surveillance had received a proper pre-job briefing, and all had indicated to their supervisor that they had performed this or similar procedures in the past and were knowledgeable of the work to be performed.

### Analysis

The inspectors determined that there was a performance deficiency associated with the licensee's performance of the LIP-RH-602B surveillance. Specifically, instrument maintenance technicians returning the 2E12-N015B transmitter (2B RHR pump flow indication) to service following calibration did not exercise due caution in valving in the transmitter, such that a pressure spike was created that caused the 2B RHR pump minimum flow valve to automatically reposition shut. This error resulted in the unnecessary and unintentional actuation of a safety-related component, and rendered the 2B RHR train inoperable per Technical Specifications.

In accordance with NRC IMC 0612, "Power Reactor Inspection Reports," the inspectors compared the issue to the examples in Appendix E, "Examples of Minor Issues." No correlating example was identified. The inspectors then determined that the finding was of more than minor significance in accordance with Appendix B, "Issue Screening," in that it had a direct impact on the objective for the Mitigating Systems cornerstone for reactor safety "to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage)." Specifically, the inspectors determined that the error by the licensee's instrument maintenance technicians created an unnecessary challenge to control room personnel and the capability of the 2B RHR train.

The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," and conducted a Phase 1 characterization and initial screening. Because the finding did not represent the actual loss of a safety function for any single train or system, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event, the inspectors concluded that the finding was of very low safety significance (Green) and within the licensee's response band.

In addition, the inspectors determined that the finding was related primarily to the cross-cutting area of Human Performance as defined in NRC IMC 0305, "Operating Reactor Assessment Program," since the licensee's instrument maintenance technicians did not appropriately utilize applicable human error prevention techniques, such as self checking, etc., when restoring the 2E12-N015B flow transmitter to service. (H.4(a))

## Enforcement

No violations of NRC requirements or regulations were identified by the inspectors.

The inspectors reviewed the licensee's conclusion that the LIP-RH-602B procedure was adequate as written and that the notes and precautions contained in similar procedures advising personnel of potential issues with the restoration of the 2E12-N015B flow transmitter constituted only enhancements. Since the instrument maintenance technicians performing the surveillance had all indicated to their supervisor that they had performed this or similar procedures in the past successfully and were knowledgeable of the work to be performed, the inspectors determined that although such notes and precautions would have been desirable in LIP-RH-602B, no violation of Criterion V of 10 CFR 50, Appendix B, "Instructions, Procedures, and Drawings," had occurred. Similarly, since the instrument maintenance technicians had also received a proper pre-job briefing and the activity did not impact the availability of any safety-related system, structure, or component, the inspectors determined that no violation of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," had occurred.

The licensee entered this issue into their CAP as IR 658684. Corrective actions planned and completed by the licensee included the performance of a quick Human Performance investigation and conducting a detailed apparent cause evaluation analysis for the event. (FIN 05000374/2007004-01)

## .2 Inservice Testing (IST) Required by the American Society of Mechanical Engineers Operations and Maintenance Code

### a. Inspection Scope

Based on the relatively high risk significance of the system, the inspectors selected the following Code pump IST activity for review:

- LOS-RI-Q5: Unit 1 RCIC pump cold quick start test.

The inspectors observed the performance of the test, including reviews for preconditioning, applicability of acceptance criteria, test equipment calibration and control, procedural use, documentation of test data, Technical Specification applicability, compliance with 10 CFR 50.55a, "Codes and Standards," impact of testing relative to performance indicator reporting, and evaluation of the test data.

The review of this IST quarterly pump surveillance constituted a single inspection sample.

### b. Findings

No findings of significance were identified.

1EP2 Alert and Notification System (ANS) Evaluation (71114.02)

a. Inspection Scope

The inspectors discussed with Emergency Preparedness (EP) staff the operation, maintenance, and periodic testing of the ANS in the LaSalle County Station's plume pathway emergency planning zone to determine whether the ANS equipment was adequately maintained and tested in accordance with emergency plan commitments and procedures. The inspectors reviewed records of April 2005 through June 2007 monthly trend reports and siren test failures, as well as April 2005 through June 2007 maintenance checklists.

These activities constituted one inspection sample.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation Testing (71114.03)

a. Inspection Scope

The inspectors reviewed and discussed with plant EP staff the emergency plan commitments and procedures that addressed the primary and alternate methods of initiating an ERO activation to augment the on-shift ERO as well as the provisions for maintaining the plant's ERO call-out roster. The inspectors also reviewed reports and a sample of CAP records of unannounced off-hour augmentation tests, which were conducted May 2005 through July 2007, to determine the adequacy of the drills' critiques and associated corrective actions. The inspectors also reviewed the EP training records of a sample of approximately 28 LaSalle County Station ERO personnel, who were assigned to key and support positions, to determine whether they were currently trained for their assigned ERO positions.

These activities constituted one inspection sample.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspectors reviewed a sample of nuclear oversight staff's 2005, 2006, and 2007 audits of the LaSalle County Station emergency preparedness program to verify that these independent assessments met the requirements of 10 CFR 50.54(t). The inspectors also reviewed critique reports and samples of CAP records associated with the 2006 biennial exercise, as well as various EP drills conducted in 2005, 2006, and 2007 in order to verify that the licensee fulfilled its drill commitments and to evaluate the

licensee's efforts to identify, track, and resolve concerns identified during these activities. Additionally, the inspectors reviewed a sample of EP items, CAP, and corrective actions related to the facility's EP program and activities to determine whether corrective actions were acceptably completed.

These activities constituted one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The resident inspectors reviewed the following licensee ERO drills and exercises to evaluate ERO conduct and the adequacy of the licensee's critique of performance to identify weaknesses and deficiencies.

- Off-year ERO full-scale exercise, held on August 22, 2007; and
- ERO Team D drill, held on September 26, 2007.

The inspectors selected simulator scenarios that the licensee had scheduled as providing input to the Drill/Exercise Performance Indicator. The inspectors observed, when applicable, the classification of events, notifications to off-site agencies, protective action recommendation development, and drill critiques. Observations were compared to the licensee's observations and CAP entries. The inspectors verified that there were no discrepancies between observed performance and performance indicator reported statistics. The scenarios observed resulted in simulated declaration of multiple emergency event classifications.

The inspectors' observations associated with these ERO drills and exercises constituted two inspection samples.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstones: Occupational Radiation Safety and Public Radiation Safety**

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns

a. Inspection Scope

The inspectors reviewed several radiological problem reports since the last inspection that found that the cause of the event was radiation protection technician error. The inspectors performed that review to determine if there was an observable pattern traceable to a similar cause and to determine if the perspective matched the corrective action approach taken by the licensee to resolve the reported problems. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

2OS2 As-Low-As-Is-Reasonably-Achievable Planning And Controls (ALARA) (71121.01)

.1 Problem Identification and Resolutions

a. Inspection Scope

The inspectors reviewed the licensee's self assessments, audits, and Special Reports related to the ALARA program since the last inspection to determine if the licensee's overall audit program's scope and frequency (for all applicable areas under the Occupational cornerstone) met the requirements of 10 CFR 20.1101. This review represented one inspection sample.

For any repetitive deficiencies or significant individual deficiencies in problem identification and resolution, the inspector verified that the licensee's self assessment activities were also identifying and addressing the deficiencies. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

2PS2 Radioactive Material Processing and Transportation (71122.02)

.1 Shipment Preparation and Records

a. Inspection Scope

The inspectors reviewed the documentation of shipment packaging, surveying, package labeling and marking, vehicle inspections and placarding, emergency instructions, and licensee verification of shipment readiness for two selected non-excepted radioactive material and radwaste shipments, made on June 28, 2006, and August 20, 2007. The shipment documentation reviewed included:

- Refuel floor equipment, shipped as LSA II; and
- Irradiated hardware, shipped as Type B.

For each shipment, the inspectors determined if the requirements of 10 CFR 20, 61, and 71, and those of the DOT in 49 CFR 170-189 were met. Specifically, records were reviewed, and staff involved in shipment activities were interviewed to determine if packages were labeled and marked properly, if packages and transport vehicle surveys were performed with appropriate instrumentation, whether survey results satisfied DOT requirements, and if the quantity and type of radionuclides in each shipment were determined accurately. The inspectors also determined whether shipment manifests were completed in accordance with DOT and NRC requirements, if they included the required emergency response information, if the recipient was authorized to receive the shipment, and if shipments were tracked as required by 10 CFR 20.

Selected staff involved in shipment activities were interviewed by the inspectors to determine if they had adequate skills to accomplish shipment related tasks and to determine if the shippers were knowledgeable of the applicable regulations to satisfy package preparation requirements for public transport with respect to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," and 10 CFR 71.47, Subpart H. Also, the inspectors observed personnel conducting package preparation and surveys on packages containing fuel cleaning equipment in preparation for return shipment to a fuel service vendor.

These reviews constituted two inspection samples.

b. Findings

(1) External Radiation Levels on Package Exceeded 200 mrem/hr on Contact

Introduction

A Green self-revealing finding and associated NCV were identified concerning a radioactive package shipped to another NRC licensee that was found to have surface external radiation levels exceeding the regulatory limit of 200 mrem/hr.

Description

On August 23, 2007, LaSalle County Station was notified by the receiving NRC licensee that a radioactive material package that was received from LaSalle County Station had surface radiation levels exceeding the applicable regulatory limits.

On August 20, 2007, LaSalle County Station offered for exclusive use, a shipment of three packages, including a package that contained a satellite punch tool and associated equipment. The package also contained a tool box, which the licensee had previously received but had not opened or used. The licensee had evaluated the contamination and dose rate levels of the punch tool and the associated equipment that it had removed and used; however, they did not thoroughly survey the other items that came with the container and that were not used at LaSalle County Station.

The licensee's survey of the external surfaces of package prior to shipment did not identify any radiation levels in excess of 200 mrem/hr. The highest measurement on the surface of the package was 133 mrem/hr. The package was loaded on an exclusive use conveyance with two other packages. The shipment was completed without incident between the station and the destination.

The initial receipt survey, conducted upon arrival at the destination, identified that radiation levels on the bottom (underside) of the package were 234 mrem/hr at the highest spot. During the shipment, the package was secured on a flatbed trailer, and the effected area was not accessible without using a mechanical lifting device, such as a crane or forklift. Therefore, the inspectors concluded that the area was not accessible to the public during transportation. Further investigation by the recipient and the licensee identified that the toolbox contained in the package had elevated radiation levels and that the contents of the tool box had likely shifted during transport. The radiation levels on the bottom of the package likely increased as radioactive material in the tool box moved closer to the outside (bottom) of the package.

The licensee's initial prompt investigation determined the cause of the event was a lack of adequate "defense in depth" for procedure RP-AA-601, "Surveying Radioactive Material Shipments," when using the procedure for high risk shipments, such as those that might contain hot particles or materials of high specific activity. Specifically, the licensee concluded that it had failed to assure through self-checking that all items in the package were surveyed and that all contents were properly secured within the package prior to shipping, resulting in the external radiation levels of the package changing during transport and exceeding 200 mrem/hr.

### Analysis

The inspectors determined that the performance deficiency associated with this event was the failure to ensure that the external radiation levels of a package of licensed material offered for shipment met the requirements of 10 CFR 71.5 and 49 CFR 173.441. The finding, under the Public Radiation Safety cornerstone, does not involve the application of traditional enforcement because it did not result in actual safety consequences or potential to impact the NRC's regulatory function and was not the result of any willful actions. The finding was more than minor as it involves an occurrence in the licensee's radioactive material transportation program that is contrary to NRC or DOT regulations and is a key attribute under the objective of the radiation safety cornerstone to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The finding was evaluated using the transportation branch of the SDP for the Public Radiation Safety cornerstone, and was determined to be of very low safety significance (Green). Although the external radiation limit for the surfaces of a package was exceeded, the affected area of the package was not accessible to the public and was not greater than two times the allowable limit for external radiation. The finding is of very low safety significance because no transportation workers or members of the public were or likely could have been exposed to radiation levels in excess of the regulatory limits while the exclusive use shipment was in storage or transport. The inspectors' review of this issue agreed with the licensee's that a substantial cause of the issue was the licensee's failure to properly implement

and institutionalize operating experience through its procedures. Industry experiences and issues have documented problems concerning the lack of adequate surveys for materials received, and then subsequently re-shipped by licensees. Specifically, the licensee did not review and revise the shipping procedures to assure that all contents of radioactive material packages are evaluated during the packaging process. Consequently, the inspectors determined that the finding had a cross-cutting aspect associated with problem identification and resolution. Specifically, the licensee did not implement and institutionalize operating experience through changes to procedures (P.2(b)).

### Enforcement

Title 10 CFR 71.5 requires that licensed material shipped via highway must meet the requirement contained in 49 CFR 170 - 189. Title 49 CFR 173.441 requires that each package offered for shipment in an opened transport vehicle, including those in exclusive use shipment, must not exceed 200 mrem/hr on contact.

Contrary to the above, on August 23, 2007, during a receipt survey it was identified that the bottom outside surface of a radioactive material package had a surface radiation level of 234 mrem/hr. The affected surface was on the bottom (underside) of the package that was secured to the vehicle and not accessible to a major portion of the whole body without use of extraordinary means (mechanical lifting devices). Since the finding is of very low safety significance and had been entered into the licensee's CAP as IR 663732, the associated violation of 10 CFR 71.5 and 49 CFR 173.441 is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy.

Corrective actions by the licensee included revising RP-AA-601, "Surveying Radioactive Material Shipments," and training shipping personnel on the procedural changes. (NCV 05000373/2007004-02; 05000374/2007004-02)

### (2) State of South Carolina Suspended Access to Barnwell Disposal Facility

On August 21, 2007, the State of South Carolina notified LaSalle County Station that it was suspending Radioactive Waste Permit 0178-12-07-X as of August 22, 2007, for a period of not less than 30 calendar days. This action was in response to noncompliance with applicable state regulations. Specifically, Shipment No. 0607-13412 was inspected by the State of South Carolina on July 9, 2007, at the Energy Solutions burial facility in Barnwell, South Carolina. During the process of opening the shipping cask and removing the liner for burial, loose radioactive material was identified on the bottom of the cask. The exposure rate of the material was 35 rem/hr.

LaSalle County Station personnel were made aware of this finding on July 9, 2007, by Energy Solutions staff, the operators of the burial facility in Barnwell, South Carolina. The identified debris was described as a 1/8 inch by 1/8 inch black chip, with radiation levels of approximately 35 rem/hr when removed from the shipping cask and isolated. The Energy Solutions staff contained the debris with other incidental site generated debris and buried it in the facility, rendering the material inaccessible.

In response to identifying the debris in the cask, licensee personnel initially reviewed the cask loading procedures to identify any provisions that needed to be made to minimize the risk of debris on the outside of the liner or inside the cask. Following the notice of non-compliance from the State of South Carolina, the licensee initiated a root cause analysis of loading activities associated with this shipment.

This event remains under review by the NRC and is categorized as an Unresolved Item. (URI 05000373/2007004-03; 05000374/2007004-03)

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program (71122.03)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the most current annual Radiological Environmental Operating Report dated May 10, 2007, and licensee assessment results to evaluate if the REMP was implemented as required by the Radiological Environmental Technical Specifications (RETS) and the Offsite Dose Calculation Manual (ODCM). The inspectors reviewed the report for changes to the ODCM with respect to environmental monitoring and commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, interlaboratory comparison program, and data analysis. The inspectors reviewed the ODCM to identify environmental monitoring stations and evaluated licensee self-assessments, audits, licensee event reports, and interlaboratory comparison program results. The inspectors reviewed the Final Safety Analysis Report for information regarding the environmental monitoring program and meteorological monitoring instrumentation. The inspectors also reviewed the scope of the licensee's audit program to determine if it met the requirements of 10 CFR 20.1101(c).

This review constituted a single inspection sample.

b. Findings

No findings of significance were identified.

.2 Onsite Inspection

a. Inspection Scope

The inspectors walked down selected air sampling stations (>30 percent) and approximately 20 percent of the thermoluminescent dosimeter monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition.

The inspectors observed the collection and preparation of a variety of environmental samples including drinking water, surface water, and air. The environmental sampling program was evaluated to determine if it was representative of the release pathways as

specified in the ODCM and that sampling techniques were performed in accordance with station procedures.

The inspectors evaluated the condition of the meteorological instruments using observations and record reviews, and assessed whether the equipment was operable, calibrated, and maintained in accordance with guidance contained in the Final Safety Analysis Report, NRC Safety Guide 23, and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments, including computer interfaces and data loggers, that measure and record wind speed, wind direction, delta temperature, and atmospheric stability measurements were available on the licensee's computer system and whether this information was available in the control room.

The inspectors reviewed each event documented in the Radiological Environmental Operating Report which involved missed samples, inoperable samplers, lost thermoluminescent dosimeters, or anomalous measurements for the cause and corrective actions.

The inspectors reviewed the ODCM for significant changes that resulted from land use census modifications, or sampling station changes made since the last inspection. This included a review of technical justifications for changed sampling locations. The inspectors assessed whether the licensee performed reviews required to ensure that the changes did not affect their ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors reviewed the calibration and maintenance records for five air samplers to evaluate operating parameters. The inspectors reviewed results of the vendor's interlaboratory comparison program and quality assurance programs to assess the adequacy of environmental sample analyses performed by the licensee.

The inspectors reviewed quality assurance audit results of the REMP to determine whether the licensee met the Technical Specification/ODCM requirements.

These reviews constituted six inspection samples.

b. Findings

No findings of significance were identified.

.3 Unrestricted Release of Material From the Radiologically Restricted Area

a. Inspection Scope

The inspectors observed the access control location where the licensee monitored potentially contaminated material leaving the radiologically controlled area and inspected the methods used for control, survey, and release of material from this area. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use to verify that the work was performed in accordance with plant procedures.

The inspectors evaluated whether the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources that represented the expected isotopic mix. The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material and verified that there was guidance on how to respond to an alarm indicating the presence of licensed radioactive material. The inspectors evaluated the licensee's equipment to determine if radiation detection sensitivities were consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination, and Health Physics Position-221 for volumetrically contaminated material.

The inspectors reviewed the licensee's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters such as counting times and background radiation levels. The inspectors assessed whether the licensee had established a "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

These reviews constituted two inspection samples.

b. Findings

No findings of significance were identified.

.4 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, condition reports, and special reports related to the radiological environmental monitoring program since the last REMP inspection to determine if identified problems were entered into the CAP for resolution. The inspectors also assessed whether the licensee's self-assessment program was capable of identifying and addressing repetitive deficiencies or significant individual deficiencies that were identified by the problem identification and resolution process.

The inspectors also reviewed corrective action documents related to the REMP that affected environmental sampling and analysis, and meteorological monitoring instrumentation. Staff members were interviewed and documents were reviewed to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- Initial problem identification, characterization, and tracking;
- Disposition of operability/reportability issues;
- Evaluation of safety significance/risk and priority for resolution;
- Identification of repetitive problems;
- Identification of contributing causes;
- Identification and implementation of effective corrective actions;
- Resolution of NCVs tracked in the corrective action system; and

- Implementation/consideration of risk significant operational experience feedback.

This review constituted one inspection sample.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151)

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

.1 Initiating Events, Mitigating Systems, and Barrier Integrity Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed Licensee Event Reports, licensee data reported to the NRC, plant logs, and NRC inspection reports to verify the following performance indicators for the Second Quarter of 2007:

- Reactor Coolant System Activity, Units 1 and 2.

The inspectors verified that the licensee accurately reported performance as defined by the applicable revision of Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline."

These reviews constituted two inspection samples.

b. Findings

No findings of significance were identified.

.2 Radiation Safety Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed, at a minimum, the most recent 12 months of licensee event reports, licensee data reported to the NRC, plant logs, and NRC inspection reports to verify the following performance indicators reported by the licensee for the Second Quarter of 2007:

- Occupational exposure control effectiveness; and
- Radiological effluent technical specifications (RETS)/Offsite dose calculation manual (ODCM) radiological effluent occurrence.

The inspectors verified that the licensee accurately reported performance as defined by the applicable revision of NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline."

These performance indicator reviews constituted two inspection samples.

b. Findings

No findings of significance were identified.

.3 Emergency Preparedness Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed the licensee's records associated with the three EP performance indicators listed below. The inspectors verified that the licensee accurately reported these indicators in accordance with relevant procedures and NEI guidance endorsed by NRC. Specifically, the inspectors reviewed licensee records associated with PI data reported to the NRC for the period October 2006 through June 2007. Reviewed records and processes discussed included: procedural guidance on assessing opportunities for the three PIs; assessments of PI opportunities during predesignated control room simulator training sessions, the 2006 biennial exercise, and other drills; revisions of the roster of personnel assigned to key ERO positions; and results of periodic ANS operability tests. The following PIs were reviewed:

- ANS;
- ERO Drill Participation; and
- Drill and Exercise Performance.

These performance indicator reviews constituted three inspection samples.

b. Findings

No findings of significance were identified.

.4 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the Second Quarter 2007 performance indicators for any obvious inconsistencies prior to its public release in accordance with IMC 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

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 Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures conducted during the period, the inspectors verified that the licensee entered the problems identified during the inspection into their CAP. Additionally, the inspectors verified that the licensee was identifying issues at an appropriate threshold and entering them in the CAP, and verified that problems included in the licensee's CAP were properly addressed for resolution. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue.

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 CAP Reviews

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 40A2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six month period of January 2007 through June 2007, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This review by the inspectors constituted a single semi-annual trend inspection sample.

b. Findings and Issues

No findings of significance were identified. No issues were identified.

.4 Selected Issue Follow-up Inspection: Ultimate Heat Sink High Temperature Issues

Introduction

On March 13, 2006, the licensee submitted a Technical Specifications amendment request to the NRC requesting that the ultimate heat sink (UHS) temperature surveillance limit be raised from the existing 100 °F to 101.5 °F. This request was created after several instances during summertime months, especially during the summer of 2005, when extreme ambient temperatures and low wind conditions combined to cause the LaSalle lake water temperature (i.e., UHS) to approach the 100 °F licensed limit. The licensee proposed that a 1.5 °F increase in the UHS temperature limit could be granted because they had reduced the temperature measurement uncertainty by replacing the existing thermocouples for measuring lake water temperature with higher precision temperature measurement equipment.

On June 15, 2006, the NRC Headquarters staff forwarded a request for additional information (RAI) to the licensee regarding the UHS temperature amendment request. The licensee initially responded to the RAI on July 13, 2006. Subsequently, after a

number of telephone conferences, the licensee submitted a supplemental response to the NRC on August 4, 2006. Nonetheless, after reviewing all the material supplied by the licensee the NRC staff determined that the degree of measurement accuracy that would be required to support the amendment request had not been adequately demonstrated and the licensee's request was denied on November 13, 2006.

The licensee responded to the denial in writing on January 24, 2007, and on January 26, 2007, a public meeting was held between the NRC and licensee personnel to discuss the denial of the UHS submittal and the licensee's plan for re-submittal. On April 5, 2007, a second public meeting was held between the NRC and licensee personnel to discuss the UHS proposed amendment re-submittal, and on June 29, 2007, the licensee submitted their revised amendment request, again requesting that the UHS temperature surveillance limit be raised from the existing 100 °F to 101.5 °F.

While the revised submittal was being reviewed by the NRC staff, a period of sustained ambient high temperatures and other unfavorable weather conditions combined to raise the UHS temperature to very near the 100 °F Technical Specification limit. On August 1, 2007, licensee thermal prediction models revealed that the UHS temperature would exceed the 100 °F limit on August 3<sup>rd</sup> unless there were significant changes in the local weather conditions. As a result, on August 1<sup>st</sup> the licensee submitted a request for an emergency amendment to the 100 °F UHS temperature limit in plant Technical Specifications. Unlike previous requests, however, the licensee modified their technical approach to the issue to use a previously approved NRC methodology. The different methodology allowed for an increase in the UHS temperature limit by 1.25 °F, versus the licensee's previous requests for a 1.5 °F increase. On August 2, 2007, the NRC staff approved the licensee's request for a new UHS Technical Specification temperature limit of 101.25 °F after several telephone conferences and the submittal of some supplemental information from the licensee's technical staff.

The inspectors' review of this issue constituted a single inspection sample.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed the licensee's CAP entries, correspondence, and actions associated with this issue to verify that the identification of the problems by the licensee were complete, accurate, and timely, and that the consideration of extent-of-condition review, generic implications, common cause, and previous occurrences were adequate.

(2) Issues

No issues of significance were identified. In general, the licensee's efforts were adequate at identifying the issue. By the summer of 2005, the nature of the UHS temperature excursions were well understood by the licensee's technical staff. Licensee personnel have had at their disposal for several years a lake temperature thermal computer model developed specifically for the licensee by a third party vendor. This

model has been able to predict UHS temperature several days into the future based on current and anticipated weather conditions to a fairly high degree of accuracy.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

In reviewing the licensee's CAP entries, correspondence, and actions associated with this issue, the inspectors considered the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Issues

The licensee's prioritization for the corrective actions related to the UHS temperature issue raised several key questions. Chiefly among these was the question of why over a period of essentially two years the licensee did not develop a viable solution for the issue, and yet when weather conditions threatened the existing 100 °F Technical Specification UHS temperature limit in early August of 2007, a viable solution was developed in a matter of days.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed multiple related CAP documents, correspondence, and licensee actions associated with the problem of UHS high temperature during the summer months. The intent of this review was to determine if the CAP actions effectively addressed the causal factors of this event.

(2) Issues

No issues of significance were noted. Ultimately, the licensee's actions to address the subject condition consisted of adopting a methodology for their UHS Technical Specification amendment that had been previously approved by the NRC staff, and reducing the requested change in the UHS temperature limit from 1.5 °F to 1.25 °F. The inspectors noted that historical UHS/LaSalle lake temperatures suggest that the new UHS Technical Specification temperature limit of 101.25 °F should not be challenged by typical summertime weather conditions. Based on this historical data, the inspectors concluded that the licensee's corrective actions appeared to be effective.

.5 Selected Issue Follow-up Inspection: Repetitive Unit 2 DEHC TCV LVDT Failures

Introduction

During the most recent Unit 2 refuel outage (February – March 2007), the licensee installed a state-of-the-art DEHC system to provide control for the unit's main turbine-generator. The new system consisted of three identical trains of digital control that operated on a two out of three voter principle. As such, each main turbine TCV was

provided with three identical LVDT assemblies to provide valve position information back to the DEHC computer processors.

On April 14, 2007, the mechanical linkage for one of the three position indication LVDTs associated with TCV No. 3 catastrophically failed. However, because the new DEHC system operated on a two out of three voter principle, the failure did not cause a transient or result in any inadvertent component actuations. The licensee repaired the broken assembly with a like-for-like replacement.

On June 14, 2007, the mechanical linkage for one of the three position indication LVDTs associated with TCV No. 4 catastrophically failed. The failure was similar, but not identical, to the previous position indication failure on TCV No. 3, and resulted in the licensee beginning an extensive investigation into possible causes for the failures. Again, the licensee repaired the broken assembly with a like-for-like replacement.

On July 20, 2007, the mechanical linkage for one of the three position indication LVDTs associated with TCV No. 1 catastrophically failed. Unlike the repairs for the previous two cases, however, by this time the licensee had developed an enhanced repair/modification that consisted of installation of more robust, hardened parts. Licensee failure analyses associated with the two previous cases suggested that the original parts used to complete the mechanical linkage of the LVDT to the TCV were too frail and insufficient for the TCV operating environment. The repairs to the broken TCV No. 1 LVDT linkage were accomplished with the hardened parts.

On August 11, 2007, the licensee installed hardened parts on the No. 2 LVDT on TCV No. 3, and the No. 2 LVDT on TCV No. 4. The licensee had been subjecting a LVDT assembly using the hardened parts to continuous vibration testing on a shaker table at an off site facility, and the results were extremely promising. Following the two new installations using the hardened parts, on August 13, 2007, LVDT No. 3 on TCV No. 3 catastrophically failed. As was the case for the previous failures, the licensee was forced to reduce plant power in order to reduce radiation dose rates near the TCV so that repairs could be facilitated. The broken mechanical linkage for the LVDT was repaired using the hardened parts.

During a scheduled load reduction for surveillance testing and a control rod sequence exchange on September 9, 2007, the licensee replaced the eight remaining LVDT mechanical linkages on the four Unit 2 TCVs that still had original parts, and installed hardened parts. At the time of the writing of this report, no LVDT mechanical linkage using the licensee's new hardened parts has failed.

The inspectors' review of this issue constituted a single inspection sample.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed the licensee's CAP entries and actions associated with this issue to verify that the identification of the problems by the licensee were complete,

accurate, and timely, and that the consideration of extent-of-condition review, generic implications, common cause, and previous occurrences were adequate.

(2) Issues

No issues of significance were noted. The inspectors concluded that the licensee's CAP efforts adequately identified the root and contributing causes for the recurring LVDT mechanical linkage failures.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

In reviewing the licensee's CAP entries and actions associated with this issue, the inspectors considered the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Issues

No issues of significance were noted. The inspectors found that the licensee had appropriately prioritized CAP actions associated with this issue. Although each individual LVDT mechanical linkage failure by itself resulted in only alarm and indication issues, the licensee's response in each case was appropriately swift due to the potential for a plant transient should a second LVDT mechanical linkage on the same TCW have failed before repairs were enacted.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed the multiple related CAP documents associated with the issue. The intent of this review was to determine if the CAP actions effectively addressed the causal factors for the LVDT mechanical linkage failures.

(2) Issues

No issues of significance were noted. At the time of this writing, the licensee was still subjecting a LVDT assembly using the hardened parts to continuous vibration testing on a shaker table at an off site facility, and the assembly had not failed. Likewise, no LVDT mechanical linkage installed in the plant using the new hardened parts has failed since installation.

4OA3 Event Follow-up (71153)

**Cornerstone: Initiating Events**

.1 Failure of 2A and 2B TDRFP Turbine Speed Control

a. Inspection Scope

The inspectors responded to an abnormal operating condition on Unit 2 on July 20, 2007. While reducing power to support TCV LVDT emergent repairs, on-watch reactor operators noted that reactor water level did not respond automatically to the power reduction as expected. The operators halted the power reduction and began closely monitoring reactor level. As control room alarm 2H13-P603, "Feedwater Control Reactor Vessel Level 7 High," annunciated, the operations crew entered the applicable abnormal operating procedure for high reactor vessel water level and placed both the 2A and 2B TDRFPs in "manual." Neither TDRFP responded to manual changes in speed demand. In accordance with their abnormal operating procedures, control room operators subsequently attempted to lower reactor vessel water level using a back-up manual mode of TDRFP control. When these efforts also proved unsuccessful, control room operators were forced to stabilize reactor level by returning plant power to its original value in order to match reactor steam flow and feedwater flow per the applicable abnormal operating procedure.

In response to the event, the inspectors observed plant parameters and status, including an independent review of the licensee's assessment of plant risk; evaluated the availability of mitigating systems and the performance of licensee actions; and independently confirmed the licensee's conclusion that the event did not require reporting under 10 CFR 50.72. The inspectors observed operating crew actions in the station's main control room, including a subsequent power reduction and the removal of the 2B TDRFP from service utilizing an infrequently performed special procedure to account for the inability to command the TDRFP to change speed.

The inspectors' response to this abnormal operating condition and subsequent observation of licensee response actions constituted a single inspection sample.

b. Findings

No findings of significance were identified.

40A5 Other

**Cornerstone: Occupational Radiation Safety**

.1 Compliance with a Confirmatory Order EA-04-170, dated November 22, 2005

a. Inspection Scope

The inspectors reviewed a letter from the LaSalle Generating Station dated June 22, 2007, stating that actions required by the Confirmatory Order dated November 22, 2005 were completed. The inspectors also reviewed NRC Inspection Reports 05000373/2006003; 05000374/2006003 and 05000373/2007002; 05000374/2007002 that discussed inspection activity related to the review of the specific actions taken by the licensee in compliance with the Confirmatory Order, to assure that the licensee had completed all the required actions within the two outages that followed.

The inspectors' review of Confirmatory Order EA-04-170 compliance was an integral part of the NRC's enforcement process for violations previously identified and documented in other inspection reports, and as such did not represent any additional inspection samples.

b. Issues and Findings

No findings of significance were identified. No issues were identified. The licensee has completed all required actions of Confirmatory Order EA-04-170, dated November 22, 2005.

40A6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to the Site Vice President, Mr. Daniel Enright, and other members of licensee management on October 2, 2007. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exits were conducted for:

- A radioactive material controls program and access control inspection with the Site Vice President, Ms. Susan Landahl, and other members of licensee management on July 20, 2007;
- An emergency preparedness inspection with Ms. Susan Landahl, the Site Vice President, and other members of licensee management on July 27, 2007;
- An inspection of the licensee's compliance with Confirmatory Order EA-04-170 with Mr. T. Simpkin, Regulatory Affairs Manager, on September 10, 2007; and
- A radioactive material processing and transportation inspection with Mr. B. Kapellas, Radiation Protection Manager, and other members of the licensee's staff on September 25, 2007.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

S. Landahl, Site Vice President  
D. Enright, Plant Manager (Site Vice President as of September 24, 2007)  
J. Bashor, Site Engineering Director  
R. Chrzanowski, Chemistry Manager  
T. Connor, Maintenance Director  
R. Ebright, Site Training Director  
B. Ginter, Engineering Programs Manager  
F. Gogliotti, System Engineering Manager  
K. Ihnen, Nuclear Oversight Manager  
B. Kapellas, Radiation Protection Manager  
S. Marik, Work Management Director  
D. Rhoades, Operations Director (Plant Manager as of September 24, 2007)  
J. Rommel, Design Engineering Manager  
K. Rusley, Emergency Preparedness Manager  
T. Simpkin, Regulatory Assurance Manager  
H. Vinyard, Shift Operations Superintendent  
C. Wilson, Station Security Manager

#### Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

05000374/2007004-01	FIN	Instrument Maintenance Technicians Cause Pressure Spike when Valving in Flow Transmitter and Render RHR Train Inoperable (Section 1R22.1)
05000373/2007004-02; 05000374/2007004-02	NCV	External Radiation Levels on Package Exceeds 200 mrem/hr on Contact (Section 2PS2.1)
05000373/2007004-03; 05000374/2007004-03	URI	State of South Carolina Suspended Access to Barnwell Disposal Facility on August 22, 2007 (Section 2PS2.1)

### Closed

05000374/2007004-01	FIN	Instrument Maintenance Technicians Cause Pressure Spike when Valving in Flow Transmitter and Render RHR Train Inoperable (Section 1R22.1)
05000373/2007004-02; 05000374/2007004-02	NCV	External Radiation Levels on Package Exceeds 200 mrem/hr on Contact (Section 2PS2.1)

### 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

#### Issue Reports:

- 660380; NRC IDENTIFIED – Potential Hazards Due to Forecasted High Wind Conditions; 8/14/2007

#### Procedures:

- LOA-TORN-001; High Winds/Tornado; Revision 7
- OP-AA-108-111-1001; Severe Weather and Natural Disaster Guidelines; Revision 2
- LAP-900-48; Building Emergency Egress/Shelter Plan; Revision 4

### 1R04 Equipment Alignment

#### Procedures:

- LOP-RI-01M; Unit 1 RCIC System Mechanical Checklist; Revision 17
- LOP-RI-01E; Unit 1 RCIC System Electrical Checklist; Revision 11
- LOP-VG-01; Preparation for Standby Operation of the SBGT System; Revision 12
- LOP-RI-05; Preparation for Standby Operation of the RCIC System; Revision 26
- LOP-RH-05; Operation of the RHR Service Water System; Revision 31

#### Drawings:

- M-89; Standby Gas Treatment; Revision AF
- M-87, Sheet 1; Core Standby Cooling System Equipment Cooling Water System; Revision AU

### 1R05 Fire Protection

#### Miscellaneous Fire Protection Documents:

- LaSalle County Station - Fire Protection Report

### 1R06 Flood Protection Measures

#### Miscellaneous Documents:

- LaSalle County Station Individual Plant Examination; 4/1994

#### Issue Reports:

- 651851; TBCCW Pipe Rubbing Against Floor; 7/19/2007
- 657860; NRC Identified Concerns with U2 WS Return from TBCCW HX; 8/6/2007

## 1R11 Licensed Operator Requalification Program

### Dynamic Simulator Scenario Guide:

- ESG 74; Revision 1; 7/23/2007

### Issue Reports:

- 655509; Training – Two Individuals Failed During LORT 07-04 OBE; 7/31/2007
- 656273; Training – LaSalle LORT WD3.E Change From Green to Yellow; 8/1/2007

## 1R12 Maintenance Effectiveness

### Root Cause Reports:

- 629995; 0B VE Compressor Tripped on High Oil Temperature; 6/13/2007
- 497654; Trip of VC Compressor Due to Less Than Optimal System Design and Inadequate Scope of Preventative Maintenance Resulting in an Unplanned Entry into a Technical Specification Limiting Condition for Operation Action Statement; 8/18/2006

### Issue Reports:

- 647839; Oil Cooler on 0B VE Compressor Not Installed; 7/6/2007
- 637774; Noise Heard During Swap of VC/VE From 0A to 0B; 6/6/2007
- 652624; Unit 2 RR A1 Subloop Servo Sticking; 7/23/2007
- 653585; Maintenance Rule FW-04 Functional Failure; 7/25/2007
- 652014; Both TDRFP Speed Control Stuck; 7/20/2007

### Work Orders:

- 01007968-01; Troubleshooting Package for 1B RR Hydraulic Power Unit; 7/18/2007

### Plant Issue Resolution Decision Documentation:

- 634249/652014; 2A and 2B TDRFPs; 7/19/2007

## 1R13 Maintenance Risk Assessments and Emergent Work Control

### Plant Issue Resolution Decision Documentation:

- 634249/652014; 2A and 2B TDRFPs; 7/19/2007

### Procedures:

- LGP-3-1; Power Changes; Revision 41
- LOP-FW-05; Shutdown of Turbine-Driven Reactor Feedwater Pump; Revision 27
- LOP-FW-03; Startup of Motor-Driven Reactor Feedwater Pump; Revision 35
- LOS-TG-M1; Turbine Surveillances; Revision 4

### Issue Reports:

- 652014; Both TDRFP Speed Control Stuck; 7/20/2007
- 659044; Control Valve LVDT Failure; 8/9/2007
- 659660; Unit 2 TCV No. 4 LVDT No. 2 Reading Higher Than Expected; 8/11/2007
- 658912; Unexpected DEHC Minor Alarm Received in the Main Control Room; 8/9/2007
- 617564; Drill Bit Broken in 2B21-CV3 LVDT Heim Stud Assembly; 4/16/2007
- 617113; DEHC Diagnostic Alarms; 4/14/2007
- 617288; Request for Vibration Analysis on 2B21-CV3; 4/14/2007

- 617318; Erratic DEHC Pressure Control; 4/15/2007
- 656325; Average Circulating Water Inlet Temperature Reaches 99 ° F; 8/1/2007
- 664563; 1A Master Trip Solenoid Valve Test Failed; 8/25/2007

Infrequently Performed Activity Briefing Packages:

- Attempting to Unbind 2B TDRFP Control Linkage; 7/20/2007
- Attempting to Unbind the 1A MTSV Spool; 8/30/2007

Engineering Evaluations and Change Documents:

- EC 356645; Assessment of High Lake Temperature on the Functionality of the Plant; Revision 1

Correspondence:

- Exelon Letter RS-07-112; Additional Information Supporting Request for a License Amendment to Technical Specification 3.7.3, "Ultimate Heat Sink," and Request for Processing on an Emergency Basis; 8/1/2007

1R15 Operability Evaluations

Issue Reports:

- 650091; 2TE-VP115 Reading >160 °. F; 7/14/2007
- 643099; 2D MSIV Switch Temperature Exceeds 185 degrees; 6/22/2007
- 651041; 2TE-VP115 Reading >185 °. F; 7/18/2007
- 313793; 2TE-VP115 for 2D Inbd MSIV Limit Switch Metal Temp Ind High; 3/17/2005
- 151767; D MSIV Limit Switch Area Temp Above Normal; 3/29/2003
- 648422; U2 Max Combined Flow Limit Setting; 7/9/2007
- 544587; Potential Metallic Debris on GE Blades Installed on Unit 1; 10/16/2006
- 543846; Metallic Debris in GE Control Blade Velocity Limiters; 10/31/2006
- 648734; NOS IDENTIFIED – UFSAR 6.3.3.3 Single Failure and Operability Evaluation No. 06-002; 7/10/2007
- 657860; NRC Identified Concerns with U2 WS Return from TBCCW HX; 8/6/2007
- 651851; TBCCW Pipe Rubbing Against Floor; 7/17/2007

Engineering Evaluations and Change Documents:

- EC 338359; EQ Life of MSIV Limit Switch; Revision 0
- EC 342074; EQ Life of U2 Inboard MSIV Limit Switches; Revision 0
- EC 337565; Evaluation of 2TE-VP115 Mounting Location Being Incorrect; Revision 0

Operability Evaluations:

- OE 06-002; Instrument Nitrogen System and SRVs 1(2)B21-F013C, D, E, S, and U; Revisions 1-6

Plant Issue Resolution Decision Documentation:

- 544587; Unit 1 Marathon 'C' Control Rod Blades; 7/19/2007

1R19 Post-Maintenance Testing

Procedures:

- LOS-DG-M1; 0 Diesel Generator Operability Test; Revision 59

- LMS-DG-01; Main Emergency Diesel unit Surveillances; Revision 40
- LOP-DG-01; Diesel Generator Start Up and Operation; Revision 43
- LOS-DG-M3; 1B Diesel Generator Operability Test; Revision 65
- LOS-DG-R1A; 1A Diesel Generator, 1DG01K Twenty-Four Hour Run Surveillance; Revision 10

Plant Issue Resolution Decision Documentation:

- 634249/652014; 2A and 2B TDRFPs; 7/19/2007

Issue Reports:

- 652014; Both TDRFP Speed Control Stuck; 7/20/2007
- 670507; 1B DG Cooling Wtr Pump, Pump Seal/Packing Leak 1 Drop/5 seconds; 9/12/2007
- 673041; 1A DG Cylinder 20 Injector Timing Late; 9/19/2007

1R22 Surveillance Testing

Issue Reports:

- 658684; Pressure Spike During LIP-RH-602B; 8/9/2007
- 667185; Unit 1 Control Rod 58-31 Failed Friction Settle Testing; 9/2/2007
- 667195; LOS-RD-SR7 Results for Unit 1, September 2, 2007; 9/2/2007
- 667335; Unit 1 Control Rod 10-51 Anomalous Performance; 9/3/2007
- 667344; Unit 1 Control Rod 50-51 Slow to Withdraw Following Scram Time Test; 9/3/2007
- 667433; Unit 1 Control Rod 10-51; 9/3/2007

Procedures:

- LOS-RI-Q5; Unit 1 RCIC System Pump Operability, Valve Inservice Tests in Modes 1, 2, 3, and Cold Quick Start; Revision 26
- LOS-DG-M2; 1A Diesel Generator Operability Test; Revision 67
- LOS-VC-M1, Att. B; Control Room Emergency Makeup Unit Train B Operability Test; Revision 24
- LIP-RH-602B; Unit 2 RHR Pump 2B/2C Flow Indication Calibration; Revision 5
- LOS-RD-SR5; Control Rod Drive Timing; Revision 20
- LOS-RD-SR7; Channel Interference Monitoring; Revisions 9 and 10

Operations Shift Logs:

- Unit 2; 8/9/2007
- Shift Manager; 8/9/2007

Quick Human Performance Investigation Reports Associated with IR 658684

1EP2 Alert and Notification System Evaluation

LaSalle Station Monthly Siren Availability Reports:

- Semi-Annual LaSalle Siren Report for 07/01/2006 through 12/31/2006
- Semi-Annual LaSalle Siren Report for 1/1/2006 through 6/30/2006
- Semi-Annual LaSalle Siren Report for 7/1/2005 through 12/31/2005
- Semi-Annual LaSalle Siren Report for 1/1/2005 through 6/30/2005

Federal Emergency Management Agency Acceptance Letter for LaSalle Station Alert and Notification System Modifications; 5/8/2002

Issue Reports:

- 571951; EP Check-In Deficiency – Braidwood 2006 Pre-NRC Program Inspection; 12/21/2006
- 564530; LaSalle Alert Notification System Sirens Reached a 25 Percent Outage; 12/2/2006

1EP3 Emergency Response Organization Augmentation Testing

Issue Reports:

- 653208; Augmentation (Call-In) Drill Participation; 7/24/2007
- 647665; FASA Identified Weakness – EP Potential Vulnerability Radiation Protection Technicians; 7/6/2007
- 629429; Fleet-Wide E-Plan Minimum Staffing Augmentation Process Gap; 5/14/2007
- 610463; Misunderstanding During Announced ERO Backup Number Drill; 3/29/2007
- 610232; Failure to Respond to ERO Page; 3/29/2007
- 530555; ERO Pager Response Misleading; 9/13/2006
- 511490; Failed Facility Objective During Call-In Drill; 7/20/2006
- 482129; 3/2006 ERO Minimum Staffing Depth PI Yellow

Procedures:

- EP-AA-112-100-F-06; Midwest ERO Notification or Augmentation; Revision G
- EP-AA-122-1001, Attachment 2; Conduct of Call-In Augmentation Drills; Revision 7
- EP-AA-1000, Table B-1; Minimum Staffing Requirements for the Exelon ERO; Revision 17
- TQ-AA-113, Attachment 3; Station ERO Position Qualification Requirements; Revision 8

Miscellaneous Documents:

- ERO Augmentation Memo – Call-In Augmentation Drill Results from 5/3/2005 through 7/10/2007
- LaSalle Station ERO Roster; 7/23/2007

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

Issue Reports:

- 611023; St. Mary's Hospital Inventory Deficient; 3/30/2007
- 578603; NOS Rating of EP for 4<sup>th</sup> Quarter 2006; 1/12/2007
- 576097; 12/7/2006 EP Drill – KI Evaluation/Recommendation/Approval/and Issuance Weakness; 1/6/2007
- 559256; NRC EP Exercise Site Area Emergency Classification Not Timely; 11/17/2006
- 544302; 10/4/2006, EP Pre-Exercise – 5 Operations Support Center Performance Improvement Items; 10/15/2006
- 541106; The EP Drill and Exercise Objective For Use of KI Was Unsatisfactory; 10/6/2006
- 539361; EP Pre-Exercise Drill Issues to Resolve; 10/4/2006
- 530671; 6/22/2006, LaSalle Drill Low Level Drill/Scenario Control Issues; 9/13/2006
- 525677; Training – Two Individual Failures During Cycle 06-4 Week 6 Out-of-the-Box-Evaluation; 8/30/2006
- 525472; Review For Applicability Lessons Learned; 8/30/2006
- 524150; TSC Diesel Generator Failure to Start; 8/26/2006
- 522268; NOS Identified Ineffective Corrective Actions; 8/22/2006

- 521389; Decline In The ERO Response Percent To Call-In Drills; 8/18/2006
- 510991; NOS Rating For LaSalle EP Yellow For Second Quarter 2006; 7/19/2006
- 456768; 2/20/2006, LaSalle Site Area Emergency Declaration; 2/21/2002
- 441782; NRC Bulletin 2005-02 Implementation Defective; 1/13/2006

Nuclear Oversight Audits:

- NOSA-SAS-07-04; LaSalle Station 4/16/2007 through 4/20/2007 Emergency Preparedness Audit; 4/25/2007
- NOSA-SAS-06-03; LaSalle Station 4/24/2007 through 4/28/2006 Emergency Preparedness Audit; 5/3/2006
- NOSA-NCS-07-04, NOS Objective Evidence Report – Emergency Preparedness; 5/18/2007
- NOSA-SAS-05-04; LaSalle Station May 2 through 6, 2005, Emergency Preparedness Audit; 5/11/2005
- NOSA-NCS-06-03, NOS Objective Evidence Report – Offsite Agency Interface; 4/28/2006

Miscellaneous Documents:

- Check-In Self-Assessment Report 565793; LaSalle Station 2007 NRC Baseline Program Inspection Readiness Assessment
- LaSalle 2006 NRC Graded Exercise Evaluation Report; 11/15/2006
- LaSalle Generating Station EP Information Newsletters; 1/17/2006 and 9/11/2006

1EP6 Drill Evaluation

LaSalle Third Quarter 2007 PI Drill Scenario; 9/26/2007

Issue Reports:

- 672329; Off Year EP Exercise – Unsatisfactory TSC Demo Criteria; 9/17/2007
- 672939; Off Year EP Exercise – Unsatisfactory OSC Demo Criteria; 9/19/2007
- 672948; Off Year EP Exercise – Facilities and Equipment; 9/19/2007
- 673641; Off Year EP Exercise – Exercise Management; 9/20/2007
- 673654; Off Year EP Exercise – Simulator ERO Performance; 9/20/2007
- 673668; Off Year EP Exercise – TSC ERO Performance; 9/20/2007

2OS1 Access Control to Radiologically Significant Areas

Issue Reports:

- 645498; Locked High Radiation Area Entry While on Wrong Radiation Work Permit; 6/28/2007

Procedures:

- CY-AA-170-210; Potentially Contaminated System Controls Program; Revision 0
- NF-AA-390; Spent Fuel Pool Material Control; Revision 2
- RP-AA-203-1001; Personnel Exposure Investigation; Revision 3
- RP-AA-460; Controls for High and Very High Radiation Areas; Revision 12
- RP-AA-460-1001; Additional High Radiation Exposure Control; Revision 2

## 2PS2 Radioactive Material Processing and Transportation

### Issue Reports:

- 670544; Effective Action From Grand Gulf Shipping Issue; 9/12/2007
- 667677; Current Name Listed on 2007 Permit No Longer Active Employee; 9/4/2007
- 663766; South Carolina Suspends LaSalle's Radioactive Waste Permit for Barnwell; 8/22/2007
- 648587; Unexpected Radioactive Debris Identified in TN-RAM Cask; 7/10/2007
- 663732; Low Specific Activity Shipment received at Grand Gulf Station Exceeds 200 millirem/hour Contact Dose Rates Upon Receipt; 8/23/2007
- 665096; Shipping Liner Not Video Taped As Per Nukem Procedure; 8/26/2007

### Procedures:

- RP-AA-601; Surveying Radioactive Material Shipments; Revisions 6 and 7

### Miscellaneous Documents:

- COC-9233; TN-RAM Certificate of Compliance; 5/7/2007
- Shipping Package RM07-113; Radioactive Material Shipment; 8/20/2007

## 2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

### Issue Reports:

- 429737; Chemistry; Radwaste; Effluent and Environmental Monitoring Program Audit Report; 4/19/2007
- 494055; Issue Identified During REMF FASA Performance; 5/26/2006
- 534355; ACE – Investigate Liquid Found Coming From Dry Active Waste; 11/9/2006
- 563929; Meteorology Tower 375 Foot Wind Speed Not Functioning; 11/30/2006
- 569423; Purple Painted Tool Outside Radiologically Protected Area; 12/1/2006
- 625074; NOS Identifies Meteorology Instrument Accuracy does not meet requirement; 4/25/2007
- 651663; REMF Sample Points Discovered Without Power; 7/19/2007

### Self-Assessments:

- ASSA 568487-02; Radioactive Materials Controls Self Assessment; 4/4/2007
- FASA 435995-05; Radiological Environmental Monitoring Program (REMF); 6/13/2006
- SART 564985; Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems Focused Area Self-Assessment; 5/24/2007

### Procedures:

- CY-AA-170-400; Radiological Groundwater Protection Program; Revision 1
- CY-LA-170-4160; Radioactive Groundwater Protective Program Scheduling and Notification; Revision 0
- LCP-310-55; 1(2) PL14J Reactor Panel Sampling; Revision 2
- LCP-410-01; Preparation of Samples for Gamma Ray Spectrometer Measurements, Revision 11
- LRP-1140-1; Routine Surveys; Revision 11
- LRP-5822-11; Small Article Monitor Calibration Data Sheet; Revision 13
- RP-AA-503; Unconditional Release Survey Method; Revision 1

Annual Radiological Reports:

- 2006 Annual Radiological Environmental Operating Report; 5/15/2006
- 2006 Annual Radioactive Effluent Release Report; 4/30/2006

4OA1 Performance Indicator Verification

Issue Reports:

- 564188; 13 of 50 Alert and Notification System Sirens Disabled Due to Power Loss; 12/1/2006
- 649371; Missing Paperwork From LORT Cycle 3 DEP Opportunities; 7/9/2007
- 383173; Incomplete NRC EP DEP PI Documentation SEP LORT Simulator; 10/7/2005
- 579885; LaSalle Station EP PI Drill Cancellation; 1/17/2007

Miscellaneous Documents:

- EP-AA-125-1003; Key ERO Participation and Stability Monthly Data Reporting Elements; 12/2006 through 6/2007
- EP-AA-125-1002, Attachment 1; R-EP.01 and EPPI.01A-C PI Summary; 10/2006 through 6/2007
- EP-MW-114-100-F-01; Nuclear Accident Reporting System Form; 10/2006 through 6/2007
- LaSalle Station Monthly Siren Availability Reports; 10/2006 through 6/2007
- LS-AA-2110, Attachment 1; Monthly Data Elements for NRC Emergency Response Organization Drill Participation; 10/2006 through 6/2007
- LS-AA-2120, Attachment 1; Monthly Data Elements for NRC Drill/Exercise Performance; 10/2006 through 6/2007
- LS-AA-2130, Attachment 1; Monthly PI Elements for NRC Alert and Notification System Reliability; 10/2006 through 6/2007

4OA2 Identification and Resolution of Problems

Issue Reports:

- 659044; Control Valve LVDT Failure; 8/9/2007
- 659660; Unit 2 TCV No. 4 LVDT No. 2 Reading Higher Than Expected; 8/11/2007
- 658912; Unexpected DEHC Minor Alarm Received in the Main Control Room; 8/9/2007
- 617564; Drill Bit Broken in 2B21-CV3 LVDT Heim Stud Assembly; 4/16/2007
- 617113; DEHC Diagnostic Alarms; 4/14/2007
- 617288; Request for Vibration Analysis on 2B21-CV3; 4/14/2007
- 617318; Erratic DEHC Pressure Control; 4/15/2007
- 656325; Average Circulating Water Inlet Temperature Reaches 99 ° F; 8/1/2007

Engineering Evaluations and Change Documents:

- EC 356645; Assessment of High Lake Temperature on the Functionality of the Plant; Revision 1

Correspondence:

- Exelon Letter RS-07-016; Response to LaSalle County Station, Units 1 and 2 – Denial of License Amendment; 1/24/2007
- Exelon Letter RS-07-069; Request for a License Amendment to Technical Specification 3.7.3, "Ultimate Heat Sink"; 6/29/2007

- Exelon Letter RS-07-112; Additional Information Supporting Request for a License Amendment to Technical Specification 3.7.3, "Ultimate Heat Sink," and Request for Processing on an Emergency Basis; 8/1/2007
- Exelon Letter RS-07-113; Additional Information Supporting Request for a License Amendment to Technical Specification 3.7.3, "Ultimate Heat Sink"; 8/2/2007
- Exelon Letter RS-07-114; Additional Information Supporting Request for a License Amendment to Technical Specification 3.7.3, "Ultimate Heat Sink"; 8/2/2007

#### 4OA3 Event Follow-up

##### Plant Issue Resolution Decision Documentation:

- 634249/652014; 2A and 2B TDRFPs; 7/19/2007

##### Issue Reports:

- 652014; Both TDRFP Speed Control Stuck; 7/20/2007

##### Infrequently Performed Activity Briefing Package:

- Attempting to Unbind 2B TDRFP Control Linkage; 7/20/2007

##### Procedures:

- LOA-FW-201; Unit 2 Reactor Level/Feedwater Pump Control Trouble; Revision 5
- LGA-001; Reactor Pressure Vessel Control; Revision 8
- LOP-FW-05; Shutdown of Turbine-Driven Reactor Feedwater Pump; Revision 27
- LOP-RL-01; Operation of the Reactor Level Control System; Revision 20
- LGP-3-1; Power Changes; Revision 41
- LOP-FW-03; Startup of Motor-Driven Reactor Feedwater Pump; Revision 35

## LIST OF ACRONYMS USED

ANS	Alert and Notification System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DEHC	Digital Electro-Hydraulic Control
DOT	Department of Transportation
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
IMC	Inspection Manual Chapter
mrem	Millirem
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PI	Performance Indicator
PMT	Post-Maintenance Testing
RAI	Request For Additional Information
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
SGBT	Standby Gas Treatment
SDP	Significance Determination Process
TBCCW	Turbine Building Closed Cooling Water
TCV	Turbine Control Valve
TDRFP	Turbine-Driven Reactor Feedwater Pump
UFSAR	Updated Final Safety Analysis Report
UHS	Ultimate Heat Sink
URI	Unresolved Item