November 7, 2001

Mr. Oliver D. Kingsley, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION
NRC INSPECTION REPORT 50-373/01-011(DRP); 50-374/01-011(DRP)

Dear Mr. Kingsley:

This report is being reissued to include two report inputs that were inadvertently omitted. On September 30, 2001, the NRC completed an inspection at your LaSalle County Station. The enclosed report presents the results of that inspection. The results of this inspection were discussed on September 26, 2001, with Mr. C. Pardee and other members of your staff.

The inspection was an examination by the resident inspectors of activities conducted under your license as they relate to reactor safety and to compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green) that was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this Non-Cited Violation, you should provide a response with a basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at LaSalle County Station.

In addition, since September 11, 2001, LaSalle County Station has assumed a heightened level of security based on a series of threat advisories issued by the NRC. Although the NRC is not aware of any specific threat against nuclear facilities, the heightened level of security was recommended for all nuclear power plants and is being maintained due to the uncertainty about the possibility of additional terrorist attacks. The steps recommended by the NRC include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.

The NRC continues to interact with the Intelligence Community and to communicate information to Exelon Generation Company. In addition, the NRC has monitored maintenance and other activities which could relate to the site's security posture.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Bruce Burgess, Chief
Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 50-373/01-011(DRP);
50-374/01-011(DRP)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-373, 50-374
License Nos:	NPF-11, NPF-18
Report Nos:	50-373/01-011(DRP); 50-374/01-011(DRP)
Licensee:	Exelon Generation Company
Facility:	LaSalle County Station, Units 1 and 2
Location:	2601 N. 21st Road Marseilles, IL 61341
Dates:	August 19 through September 30, 2001
Inspectors:	E. Duncan, Senior Resident Inspector G. Wilson, Resident Inspector R. Jickling, Emergency Preparedness Specialist W. Slawinski, Radiation Protection Specialist J. Yesinowski, Illinois Department of Nuclear Safety
Approved by:	Bruce Burgess, Chief Branch 2 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000373-01-011(DRP), IR 05000374-01-011(DRP), on 08/19-09/30/2001; Exelon, LaSalle County Station, Units 1 & 2, Event Followup.

This report covers a 6-week routine resident inspection. The inspection was conducted by the resident inspectors. One Green finding was identified which was the subject of a Non-Cited Violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609 "Significance Determination Process" (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation.

A. Inspector Identified Findings

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

Green. Operators failed to have an adequate procedure to control the operation of the heater drain system. As a result, the plant was operated in a manner which caused multiple heater string isolations and required a manual scram. One Non-Cited Violation of Technical Specification 5.4.2, "Administrative Controls," was identified.

The issue was of very low safety significance since sufficient mitigating equipment was available to place and maintain the plant in a stable condition following the scram. (Section 4OA3.2)

Report Details

Summary of Plant Status: Both units operated at power until September 3, 2001, when a Unit 2 manual scram was initiated following the unexpected loss of Unit 2, Division 1 Bus 241Y and the resulting loss of automatic feedwater controls. Unit 2 was restarted and sychronized to the grid on September 6, 2001, following restoration of Bus 241Y. Subsequently, on September 7, Unit 2 was manually scrammed due to problems associated with the heater drain system during power ascension activities which resulted in the isolation of two feedwater heater strings. Unit 2 was restarted on September 8 and then manually shutdown on September 9 due to electro-hydraulic control (EHC) system problems. Following repairs to the EHC system, Unit 2 was restarted and synchronized to the grid on September 10, 2001. Both units operated at power for the remainder of the inspection period.

1. REACTOR SAFETY

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

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed a walkdown of accessible portions of the Unit 1 Low Pressure Core Spray (LPCS) system, as well as the 1A Residual Heat Removal (RHR) and 1C RHR sub-systems to verify operability of these low pressure injection systems during maintenance activities associated with the Unit 1B RHR sub-system. The inspectors reviewed documentation to determine correct system lineup. These documents included plant procedures, such as abnormal and emergency operating procedures; plant drawings such as the piping and instrumentation diagrams (P&IDs); and mechanical and electrical checklists. The inspectors verified critical portions of the redundant sub-system or backup system and identified any discrepancies between the existing equipment lineup and the correct lineup.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors walked down the following risk-significant areas to identify for any fire protection degradations:

- Fire Zone 2C: Unit 1 Reactor Building - Elevation 807'
- Fire Zone 7C1: Unit 1 Emergency Diesel Generator (EDG) Building - High Pressure Core Spray (HPCS) Diesel Fuel Tank Room

- Fire Zone 7C2: Unit 1 EDG Building - Division 2 Diesel Fuel Tank Room
- Fire Zone 7C3: Unit 1 EDG Building - Division 1 Diesel Fuel Tank Room
- Fire Zone 4A: Auxiliary Building Ventilation Equipment Floor - 815'
- Fire Zone 4B: Auxiliary Building Ventilation Equipment Floor - 786'
- Fire Zone 4C1: Main Control Room

Emphasis was placed on control of transient combustibles and ignition sources; the material condition, operational lineup, and operational effectiveness of the fire protection systems, equipment, and features; and the material condition and operational status of fire barriers used to prevent fire damage or fire propagation.

In particular, the inspectors verified that all observed transient combustibles were being controlled in accordance with the licensee's administrative control procedures. In addition, the inspectors observed the physical condition of fire detection and suppression devices, such as overhead sprinklers, and verified that any observed deficiencies did not impact the operational effectiveness of the system. The physical condition of portable fire fighting equipment, such as portable fire extinguishers, was also observed and verified to be located appropriately, and that access to the extinguishers was unobstructed. Fire hoses were verified to be installed at their designated locations and the physical condition of the hoses was verified to be satisfactory and access unobstructed. The physical condition of passive fire protection features such as fire doors, ventilation system fire dampers, fire barriers, fire zone penetration seals, and fire retardant structural steel coatings were inspected and verified to be properly installed and in good physical condition.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee implementation of the maintenance rule requirements, including a review of scoping, goal-setting, and performance monitoring, short-term and long-term corrective actions, and current equipment performance status. The systems selected for inspection were all classified as risk-significant by the licensee's maintenance rule program. The following systems were evaluated:

- Reactor Recirculation (RR) System
- Feedwater (FW) System
- Emergency Diesel Generator (EDG) System

The Reactor Recirculation and Feedwater systems were selected based upon their maintenance rule (a)(1) classification. The Emergency Diesel Generators were selected based upon their relatively high core damage frequency contribution.

The inspectors independently verified the licensee's implementation of maintenance rule requirements for these systems by verifying that these systems were properly scoped

within the maintenance rule; that all failed structures, systems, or components (SSCs) were properly categorized and classified as (a)(1) or (a)(2); that performance criteria for SSCs classified as (a)(2) were appropriate; and that the goals and corrective actions for SSCs classified as (a)(1) were appropriate. The inspectors also verified that issues were identified at an appropriate threshold and entered in the corrective action program.

With regard to the Reactor Recirculation system, the inspectors also focused on recent problems associated with the flow control valves and hydraulic power units. The maintenance effectiveness of the identified problems were specifically evaluated. The review consisted of an analysis of common cause factors and observations of maintenance practices on the system and associated components.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors reviewed the licensee's evaluation of plant risk, scheduling, configuration control, and performance of maintenance associated with planned and emergent work activities and verified that scheduled and emergent work activities were adequately managed. In particular, the inspectors reviewed the licensee's program for conducting maintenance risk safety assessments and verified that the licensee's planning, risk management tools, and the assessment and management of online risk was adequate. The inspectors also verified that licensee actions to address increased online risk during these periods, such as establishing compensatory actions, minimizing the duration of the activity, obtaining appropriate management approval, and informing appropriate plant staff, were accomplished when online risk was increased due to maintenance on risk-significant SSCs. The following specific activities were reviewed:

- The inspectors reviewed the maintenance risk assessment for work planned for the week of August 26, 2001. This included work associated with the Unit 1, Division 2, RHR system, Unit 1, Division 2, RHR Service Water system, and Unit 1, Division 2, Core Standby Cooling System room coolers 1VY04Y and 1VY05Y. The inspectors also reviewed the crediting of a temporary station air compressor as a redundant source of station air.

- The inspectors reviewed the licensee's assessment of shutdown risk following two Unit 2 reactor scrams which occurred on September 3, 2001 and September 6, 2001. In particular, the inspectors reviewed the September 3rd Unit 2 scram which included the loss of all Division 1 safety-related Emergency Core Cooling System (ECCS) equipment associated with Bus 241Y, the loss of both Turbine-Driven Reactor Feedwater Pumps (TDRFPs), the erratic operation of the Reactor Core Isolation Cooling (RCIC) system during the transition between the pressure control and level control modes, and the required closure

of the Main Steam Isolation Valves (MSIVs) on abnormally high reactor vessel water level.

- The inspectors reviewed the maintenance risk assessment for work planned for the week of September 16, 2001. This included modification and miscellaneous maintenance activities associated with the 1B EDG, planned maintenance activities associated with the 1B Service Water Pump and the Unit 2 Station Air Compressor, and emergent work activities associated with the 1A Service Water Pump.

b. Findings

The inspectors reviewed the licensee's assessment of shutdown risk following the September 3, 2001, reactor scram. During that review, the inspectors identified concerns that the risk assessment may not have been completed in a timely manner. Additional details regarding this issue are documented in NRC Special Inspection Report 50-374/2001-17.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

.1 Unit 2 Startup From Forced Outage L2F33

a. Inspection Scope

On September 3, 2001, Unit 2 was manually shutdown as a result of blown fuses in the undervoltage circuit associated with Unit 2, Division 1 Bus 241Y. The inspectors observed portions of the Unit 2 startup including the approach to criticality, synchronization of the main generator to the grid, startup and operation of the feedwater system, and power ascension.

b. Findings

During power ascension activities, a manual reactor scram was required as a result of multiple feedwater heater string isolations. Details of this event are documented in Section 4OA3 of this report.

.2 Unit 2 Startup From Forced Outage L2F34

a. Inspection Scope

On September 6, 2001, Unit 2 was manually shutdown as a result of the isolation of two feedwater heater strings during power ascension following the completion of LaSalle Forced Outage L2F33. The inspectors observed portions of the Unit 2 startup. During the startup, a problem associated with the electro-hydraulic control system resulted in operators conducting a shutdown to perform troubleshooting and repair activities. The problem was resolved and Unit 2 was restarted and synchronized to the grid. The inspectors observed portions of the startup, including startup and operation of the feedwater system, and power ascension activities.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed selected Condition Reports (CRs) and Operability Evaluations (OEs) concerning degraded and non-conforming conditions affecting mitigating systems and barrier integrity to ensure that operability was properly justified and the component or system remained available, such that no unrecognized increase in risk had occurred. The following OEs and CRs were reviewed:

- OE01-013 Anomalies During Operation of RHR in Suppression Pool Cooling

This operability evaluation reviewed a perturbation observed during operation of the 2A RHR system in the suppression pool cooling mode. During the opening of 2E12-F024A, the Unit 2 RHR full flow test valve, to place the RHR system in suppression pool cooling, a momentary system low pressure alarm annunciated concurrent with a sudden decrease in system flow and RHR motor current indication. The inspectors walked down accessible portions of the 2A RHR system and verified through a review of surveillance testing data obtained shortly following the anomaly that all system parameters were normal. In addition, the inspectors reviewed the licensee's troubleshooting plan developed to determine the root cause of the momentary abnormal indications observed.

- OE01-014 1B EDG Cooling Water Pump Leakage

This operability evaluation reviewed a 4 gallon per minute (gpm) 1B EDG cooling water pump mechanical seal leak which developed during routine surveillance testing. The inspectors verified that the identified leakage had no adverse impact on system flow to safety-related components and that there was reasonable assurance that the associated spray would not cause the failure of safety-related equipment in the vicinity of the pump, such as the pump motor.

- CR L2001-05085 Evaluation of Excessive Cooldown Rate

During recovery from LaSalle Forced Outage L2F33, during activities to heat the vessel bottom head, licensee personnel established a letdown flowpath using the reactor water cleanup system. This resulted in an unexpected heatup of the reactor coolant system in the reactor vessel bottom head which exceeded the 100 degree Fahrenheit per hour (°F/hr) heatup rate limit specified in Technical Specification 3.4.11, "RCS [Reactor Coolant System] Pressure and Temperature (P/T) Limits." This operability evaluation reviewed the impact of the calculated 177°F/hr heatup which occurred. General Electric Report GE-NE-B13-02057-00-05R1, which established the LaSalle P/T curves as well as reactor pressure vessel thermal cycle limit diagram DWGV 761E581 were reviewed. The inspectors verified that although the limits prescribed in Technical Specification 3.4.11 were exceeded, the actual conditions had not exceeded the design

thermal stress analysis and that the condition did not constitute a challenge to the reactor coolant pressure boundary integrity.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

During post-maintenance testing observations, the inspectors verified that the test was adequate for the scope of the maintenance work which had been performed, and that the testing acceptance criteria was clear and demonstrated operational readiness consistent with the design and licensing basis documents. The inspectors also verified that the impact of the testing had been properly characterized during the pre-job briefing; the test was performed as written and all testing prerequisites were satisfied; and that the test data was complete, appropriately verified, and met the requirements of the testing procedure. Following the completion of the test, the inspectors verified that the test equipment was removed, and that the equipment was returned to a condition in which it could perform its safety function.

The inspectors reviewed and observed the following post-maintenance testing activities involving risk significant equipment associated with the following work orders (WOs):

- WO 99180665: Unit 1 Remote Shutdown Panel 1C61-K005 Power Supply Replacement of Electrolytic Capacitors

Following the replacement of electrolytic capacitors prescribed by the subject work order, initial power supply output voltage readings were outside the acceptance criteria contained in the work order. Subsequently, an engineering evaluation was performed which revised the acceptance criteria to a value within that originally measured and recorded. The inspectors independently reviewed the licensee evaluation of the revised criteria, verified that the revised criteria was appropriate, and validated that the measured power supply output voltage was within the revised criteria.

- WO 00354990: Unit 2 Reactor Protection System (RPS) Relay Switch Replacement

Following the replacement of relay switches associated with the Unit 2 Reactor Protection System, licensee personnel performed LaSalle Instrument Surveillance (LIS) RP-201A, “Unit 2 Reactor Vessel High Steam Dome Reactor Protection System Channels A1 and B1 Relay Response Time Test,” to verify that RPS response time had not been adversely impacted by the maintenance activity. The inspectors observed the post-maintenance testing activity and independently verified through a careful review of strip chart data, that the documented time response data was accurately measured and recorded.

- WO 99250993: 1B EDG Governor Automatic Reset Function

Following the removal of the 1B EDG automatic reset function to eliminate required manual control of fuel injection during a slow start, licensee personnel performed LaSalle Special Test (LST) 2001-17, "1E22B-S026 Switch Replacement Logic and Functional Test," to verify that the automatic governor response had been defeated and that the associated control system had not been adversely impacted by the maintenance activity. The inspectors observed the post-maintenance testing activity and independently verified that all associated continuity checks and associated control functions were adequately tested.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed surveillance testing of risk-significant equipment and verified that the SSCs selected were capable of performing their intended safety function and that the surveillance tests satisfied the requirements contained in Technical Specifications, the Updated Final Safety Analysis Report (UFSAR), and licensee procedures. During surveillance testing observations, the inspectors verified that the test was adequate to demonstrate operational readiness consistent with design and licensing basis documents, and that the testing acceptance criteria was clear. The inspectors also verified that the impact of the testing had been properly characterized during the pre-job briefing; the test was performed as written and all testing prerequisites were satisfied; the test data was complete, appropriately verified, and met the requirements of the testing procedure; and that the test equipment range and accuracy were consistent with the application, and the calibration was current. Following the completion of the test, the inspectors verified that the test equipment was removed, and that the equipment was returned to a condition in which it could perform its safety function.

The following surveillance testing activities were observed:

- LaSalle Instrument Surveillance (LIS) NR-209, "Unit 2 APRM [Average Power Range Monitor] Gain Adjustment"
- LaSalle Operating Surveillance (LOS) PC-Q1, "Unit 1 Primary Containment Isolation Valves Operability Test and Inservice Inspection for Conditions 1, 2, and 3"
- LOS-RH-Q1, Attachment 2C, "2C RHR System Operability and Inservice Test"

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspector discussed with Emergency Preparedness (EP) staff the design, equipment, and periodic testing of the public ANS for the LaSalle reactor facility emergency planning zone to verify that the system was properly tested and maintained. The inspector also reviewed procedures and records for an 18-month period ending June 2001, related to ANS testing, annual preventive maintenance, and non-scheduled maintenance. The inspector reviewed the licensee's criteria for determining whether each model of siren installed in the emergency planning zone would perform as expected if fully activated. Records used to document and trend component failures for each model of installed siren were also reviewed to ensure that corrective actions were taken for test failures or system anomalies.

a. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspector reviewed the licensee's ERO augmentation testing to verify that the licensee maintained and tested its ability to staff the ERO during an emergency in a timely manner. Specifically, the inspector reviewed semi-annual, off-hours staff augmentation drill procedures, related January 2000 through June 2001 drill records, primary and backup provisions for off-hours notification of the LaSalle reactor facility emergency responders, and the current ERO rosters for LaSalle. The inspector reviewed and discussed the facility EP staff's provisions for maintaining ERO call out lists.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspector evaluated the Nuclear Oversight staff's 2000 and 2001 audits and the facility emergency preparedness staff's field observations and reports to verify that these audits complied with the requirements of 10 CFR 50.54(t) and that the licensee adequately identified and corrected deficiencies. The inspector also reviewed a sample of emergency preparedness items and condition reports, related to the facility's

emergency preparedness program, to determine whether corrective actions were acceptably completed.

b. Findings

No findings of significance were identified.

1. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Controls For Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiological Boundary Verifications

a. Inspection Scope

The inspector conducted walkdowns of the radiologically protected area to verify the adequacy of radiological area boundaries and postings. Specifically, the inspector walked down numerous radiologically significant work area boundaries (high and locked high radiation areas) in the Unit 1 and 2 Reactor and Turbine Buildings including the Radwaste Building, and performed confirmatory radiation measurements to verify if these areas and selected radiation areas were properly posted and controlled in accordance with 10 CFR Part 20, licensee procedures, and Technical Specifications. The inspector also reviewed the radiological conditions of work areas within those radiation and high radiation areas walked down, to assess the radiological housekeeping and contamination controls.

b. Findings

No findings of significance were identified.

.2 High Risk Significant, High Radiation Area, and Very High Radiation Area Access Controls

a. Inspection Scope

The inspector reviewed the licensee's procedures, job standards and practices for the control of access to radiologically significant areas (high, locked high, and very high radiation areas), and assessed compliance with Technical Specifications, procedures and the requirements of 10 CFR 20.1601 and 20.1602. In particular, the inspector reviewed the licensee's practices for the control of keys to locked high radiation areas (LHRAs), the use of access control guards to control entry into such areas, and the licensee's methods for independently verifying proper closure and latching of LHRA doors upon area egress. The inspector also reviewed the interface between radiation protection (RP) and plant operations staff to assess communication protocols relevant to changing plant conditions that could alter radiological area status. Additionally, the

inspector reviewed radiological postings and challenged access control boundaries to verify if LHRAs and very high radiation areas were properly controlled.

b. Findings

No findings of significance were identified.

.3 Radiation Work Permit Reviews

a. Inspection Scope

The inspector reviewed several radiation work permits (RWPs) for work in radiologically significant areas. Electronic dosimeter alarm setpoints for both dose rate and integrated dose were evaluated to verify conformity with work area radiological conditions given the work activity. The inspector also reviewed work instructions specified in the RWPs, associated work packages, and in pre-job briefing information in order to assess access control restrictions for compliance with Technical Specifications.

b. Findings

No findings of significance were identified.

.4 Review of Radiologically Significant Work

a. Inspection Scope

The inspector reviewed RWP and as-low-as-is-reasonably-achievable (ALARA) plan packages, attended pre-job briefings and observed work activities for two jobs that took place in high radiation areas during the inspection period. These activities were performed to verify the adequacy of surveys, radiological work controls, exchange of work area radiological information, and to assess radiation worker and radiation protection technician performance. Additionally, the inspector reviewed ALARA plan packages for three jobs recently completed in high radiation areas or in other radiologically significant work environments, to assess the overall radiological work performance and controls. The inspector also reviewed the licensee's procedure and practices for dosimetry placement including the use of multiple dosimetry for work in high radiation areas having significant dose gradients, for compliance with the requirements of 10 CFR 20.1201 and applicable Regulatory Guides.

b. Findings

No findings of significance were identified.

.5 Control of Non-Fuel Materials Stored in the Spent Fuel Pools

a. Inspection Scope

The inspector reviewed the licensee's controls and practices for the storage of highly activated or contaminated materials (non-fuel) within the spent fuel or other storage

pools. Radiation protection and fuel handling procedures were reviewed, involved staff were interviewed, and a walkdown of the refuel floor was conducted. The inspector assessed the adequacy of the administrative and physical controls for underwater storage of non-fuel materials for consistency with the licensee's procedures, and with Regulatory Guide 8.38, Information Notice 90-33, and applicable Health Physics Positions in NUREG/CR-5569.

b. Findings

No findings of significance were identified.

.6 Identification and Resolution of Problems

a. Inspection Scope

The inspector reviewed Radiation Protection Department self-assessments, Nuclear Oversight field observation reports and audits, the station condition report (CR) database and a variety of individual CRs related to radiation worker performance, work practices, and radiological access controls generated in 2001 through August 20, 2001. The inspector evaluated the effectiveness of the self-assessment process to identify, characterize, and prioritize individual problems and repetitive issues and trends, and to implement corrective actions to achieve lasting results. The inspector also evaluated the adequacy of high radiation area door lock contingencies used for about thirty LHRA doors, and discussed with RP management its ultimate plans to install blank door lock strikers to replace chains and padlocks currently in place.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstone: Initiating Events and Mitigating Systems

.1 Reactor Coolant System Identified Leakage

a. Inspection Scope

The inspectors reviewed reported 2nd quarter 2001 data for the Unit 1 and Unit 2 Reactor Coolant System Identified Leakage Rate performance indicator. The inspectors utilized the performance indicator definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 0.

The inspectors reviewed operator log entries and other records of daily measurements of reactor coolant system identified leakage and compared the results to the data reported by the performance indicator.

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness

a. Inspection Scope

The inspector reviewed data and records in order to verify that the licensee had accurately reported the performance indicators: ANS, ERO Drill Participation, and Drill and Exercise Performance, for the emergency preparedness cornerstone. Specifically, the inspector reviewed the licensee's PI records, data reported to the NRC, and condition reports for the period January 2000 through June 2001, to identify any occurrences that were not identified by the licensee. Records of relevant Control Room Simulator training sessions, periodic ANS tests, and excerpts of drill and exercise scenario and evaluations were also reviewed.

b. Findings

No findings of significance were identified.

.3 Occupational Radiation Safety Performance Indicator

a. Inspection Scope

The inspector reviewed the licensee's CR database and selected CRs generated between July 2000 and August 2001, to identify any potential occurrences that were not identified by the licensee and to verify the performance indicator for the occupational radiation safety cornerstone. The inspector also reviewed performance indicator verification records completed by the RP staff since July 2000, and discussed the performance indicator data collection and analysis process with involved staff to determine if the program was implemented consistent with industry guidelines in Nuclear Energy Institute 99-02, Revision 1, "Regulatory Assessment Performance Indicator Guideline."

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

.1 September 3, 2001, Unit 2 Reactor Scram

On September 3, 2001, Unit 2 was manually shutdown following an unexpected loss of Division 1 Bus 241Y due to blown potential transformer fuses which caused a loss of normal feedwater controls. The loss of Bus 241Y also rendered the 2A RHR and Low Pressure Core Spray (LPCS) systems inoperable. In response to the event, the inspectors observed plant parameters and status, including mitigating systems and fission product barriers; evaluated the performance of mitigating systems and licensee

actions; and confirmed that the licensee properly reported the event as required by 10 CFR 50.72. During the event, a number of equipment performance anomalies occurred. These included performance problems associated with the Motor-Driven Reactor Feedwater Pump (MDRFP) which required operators to take action to address an oil leak, oscillations in the Reactor Core Isolation Cooling (RCIC) system which resulted in the operation of the system in manual, an unexpected hydraulic transient in the RCIC system, and a rupture on the roof of the Unit 2 Condensate Storage Tank (CST). Based on the risk and deterministic criteria specified in Management Directive 8.3, "NRC Incident Investigation Program," and Inspection Procedure 71153, "Event Followup," and due to the equipment performance problems which occurred, a special inspection was initiated in accordance with Inspection Procedure 93812, "Special Inspection," to evaluate the facts and circumstances surrounding the event as well as the actions taken by licensee personnel in response to the unexpected system performance issues encountered. The results of that review is documented in NRC Inspection Report 50-374/01-17.

.2 September 6, 2001, Unit 2 Reactor Scram

a. Inspection Scope

On September 6, 2001, Unit 2 was manually shutdown following the loss of numerous feedwater heaters during power ascension activities following the startup from LaSalle Forced Outage L2F33. In response to the event, the inspectors observed plant parameters and status, including mitigating systems and fission product barriers; evaluated the performance of mitigating systems and licensee actions; and confirmed that the licensee properly reported the event as required by 10 CFR 50.72.

b. Findings

One Green finding and an associated Non-Cited Violation was identified for a reactor scram which resulted from the failure to operate the plant within the capabilities of the heater drain system.

On September 6, 2001, during power ascension activities following a Unit 2 startup, operators placed feedwater heater strings in service in accordance with LaSalle Operating Procedure (LOP) HD-01, "Heater Preparation for Operation," Revision 8, and LOP-HD-02, "Normal Startup and Operation of the Heater Drain System," Revision 22. Subsequently, the 21A and 21C low pressure feedwater heaters were operated utilizing the emergency drain valves in lieu of the normal drain valves to address reference leg flashing issues. During additional power ascension activities, operators received a 21A low pressure heater high level alarm and isolated condensate to the 2A feedwater heater string in accordance with LaSalle Abnormal Operating Procedure (LOA) HD-201, "Heater Drain System Trouble," Revision 6. Shortly afterward, the 21C low pressure feedwater heater high level alarm was also received at which point operators isolated the 2C feedwater heater string and manually scrammed the reactor as required by LOA-HD-201.

The inspectors determined that all systems responded to the event as designed, and the manual shutdown was not complicated by material condition deficiencies associated

with mitigation equipment. Details of the event were communicated to the region-based risk analysts who determined that the event was of low risk-significance.

The licensee conducted a root cause investigation of the circumstances surrounding the events as discussed above. That investigation concluded that operating procedures LOP-HD-01 and LOP-HD-02 failed to contain appropriate direction to operators regarding reactor power limitations with the heater drain system in other than the normal lineup. As a result, operators increased power above the capacity of the 21A and 21C feedwater heater emergency drain valves, necessitating the isolation of the condensate to the feedwater heater strings and requiring a manual reactor scram.

Significance Evaluation

The inspectors reviewed this issue against the guidance contained in Appendix B, "Thresholds for Documentation," of Inspection Manual Chapter (IMC) 0610*, "Power Reactor Inspection Report." The inspectors determined that with regard to the Group 1 questions in IMC 0610*, the issue had an actual impact on safety since a reactor scram occurred as a result of the failure to have an adequate procedure regarding the operation of the heater drain system. As a result, the inspectors reviewed this issue against the Group 2 questions to determine if the issue impacted one or more cornerstones. The inspectors determined that the "Initiating Event" cornerstone was affected since a reactor scram, an initiating event, occurred as a result of the heater string isolations. As a result, the inspectors evaluated this issue utilizing the guidance prescribed by IMC 0609, "Significance Determination Process." During that review, the inspectors determined that since the "Initiating Event" cornerstone was affected, that a Phase 2 Significance Determination Process (SDP) evaluation was required. This evaluation, completed under the oversight of the RIII Senior Reactor Analyst (SRA), resulted in the classification of the issue as a Green finding. These results were shared and discussed with licensee probabilistic risk assessment personnel.

Enforcement Actions

This finding did have a credible impact on safety since a reactor scram occurred as a result of the heater string isolations. However, since no significant equipment performance issues occurred following the scram, the finding was considered to be of very low safety-significance (Green). Technical Specification 5.4.1, "Administrative Controls," requires that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2. Appendix A to Revision 2 of Regulatory Guide 1.33, "Quality Assurance Program Requirements," includes general plant operating procedures for power ascension. The failure to have an adequate general operating procedure to control the operation of the heater drain system during power ascension activities was an example where the requirement of Technical Specification 5.4.1 was not met and was a violation. However, because of the very low safety-significance of the item and because the licensee has included this item in their corrective action program (Condition Report L2001-05124), this violation is being treated as a Non-Cited Violation (NCV 50-374/2001011-01).

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. C. Pardee and other members of licensee management on September 26, 2001. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

The Emergency Preparedness inspector presented the preliminary inspection results to Mr. C. Pardee and other members of licensee management on September 21, 2001. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

The Radiation Protection inspector presented the preliminary inspection results to Mr. C. Pardee and other members of licensee management on August 24, 2001. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Exelon

D. Bost, Site Engineering Manager
D. Enright, Operations Manager
F. Gogliotti, Design Engineering Supervisor
C. Pardee, Site Vice President
J. Henry, System Engineering Manager
W. Riffer, Regulatory Assurance Manager
M. Schiavoni, Station Manager
C. Wilson, Station Security Manager
J. Banichello, Security Manager
J. Eggart, Emergency Preparedness Coordinator
A. Howard, Emergency Preparedness Instructor
S. McCain, MWROG Emergency Preparedness Manager
S. Taylor, Radiation Protection and Emergency Preparedness Manager
P. Quealy, Radiation Protection Field Operations Superintendent

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-373/2001011-01;50-374/2001011-01	NCV	Inadequate Heater Drain Procedure

Closed

50-373/2001011-01;50-374/2001011-01	NCV	Inadequate Heater Drain Procedure

Discussed

None

LIST OF DOCUMENTS REVIEWED

Document Number	Document Title	Revision
	LaSalle Station EPZ Outdoor Warning Siren Information	December 1990
	LaSalle Off-Site Siren Test Plan	January 2001
	LaSalle Nuclear Power Station Mobile Alert and Notification Route Guide	February 1998

	Siren Monthly Operability Reports	January 2000 - June 2001
	Siren Daily Operability Data Sheets	December 1, 2000 - June 30, 2001
	CECo Semi-Annual Siren Trending Report	July - December 31, 2000
	Exelon Semi-Annual Siren Report	January 1 - June 30, 2001
	LaSalle Plant Warning System Maintenance and Operational Report	January 17-31, 2000
	LaSalle Plant Warning System Maintenance and Operational Report	February 14 - March 13, 2001

1EP3 Emergency Response Organization (ERO) Augmentation Testing

EP-AA-113	Protective Actions	Revision 1
EP-AA-122	Conduct of Emergency Response Organization Off-hours Augmentation Drills	Revision 0
	Conduct of Emergency Response Organization Off-hours Augmentation Drill Results	May and October 2000
	Conduct of Emergency Response Organization Off-hours Augmentation Drill Results	June 2001

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

AC-AA-106	Corrective Action Program (CAP) Process Procedure	Revision 3
LS-AA-125-1006	CAP Process Expectations Manual	June 12, 2001
GSEP	Generating Stations Emergency Plan Sections 4.2 and 4.3.1 and Table 4.4-3	Revision 10
Memorandum	LaSalle Station Focus Area Assessment On Emergency Preparedness Cornerstone	September 7, 2001
Memorandum	2000 GSEP Exercise Findings and Observations Report	December 15, 2000
Memorandum	ERO Training and Qualification Assessment	May 25, 2001
Memorandum	LaSalle NRC Cornerstone Performance Indicator Assessment	February 15, 2001

	Emergency Preparedness 4th Quarter 2000 Focus Area Self-Assessment Report Emergency Response Organization Augmentation	December 11-12, 2000
	Focus Area Self-Assessment Report	May 17-19, 2000
	LaSalle Station Radiation Protection Department 1st Quarter 2000 Focus Area Self-Assessment Report	March 7-18, 2000
	Station Emergency Preparedness Self-Assessment Report 4th Quarter 2000	
	Focus Area Self-Assessment Report	May 17-19, 2000
	Station Emergency Preparedness Self-Assessment Report 3rd Quarter 2000	
	Station Emergency Preparedness Self-Assessment Report 2nd Quarter 2000	
	Nuclear Oversight Field Observation GSEP Exercise in TSC	October 4, 2000
	Nuclear Oversight Field Observation 2000 Medical Drill	October 13, 2000
	Nuclear Oversight Field Observation Emergency Preparedness Table Top Drill - Team C	October 27, 2000
	Nuclear Oversight Field Observation Work Practices	December 8, 2000
	Nuclear Oversight Field Observation Offsite Agency Interface	December 21, 2000
AR 00046952 01	Communications Failures on Some Sirens	March 13, 2001
AR 00046952 02	DC Power Failures Occurred on Some Sirens	March 13, 2001
AR 00046952 03	Siren Heater Failures on Some Banshee Sirens	March 13, 2001
CR L2000-01414	Deficiencies with Fundamentals During Admin Crew Performance on Simulator	March 8, 2000
CR L2000-02478	Augmentation Drill Issues	May 4, 2000
CR L2000-05514	TSC Overall Conditions Marginal	September 30, 2000
CR L2000-05610	NRC Performance Indicator S.18 Decline for EP	October 5, 2000

CR L2000-06240	Augmentation Drill Issues	November 6, 2000
CR L2000-06332	EP Facility Critique Issues from Tabletop Drills	November 10, 2000
CR L2000-07085	Possible Inconsistent Expectations Between EP Station Directors	October 27, 2000
CR L2000-07146	Miscommunication of GSEP Station Director Responsibilities	December 27, 2000
CR L2001-00238	GSEP Exercise Comments and Improvements	January 15, 2001
CR L2001-03269	Emergency Preparedness Drill Critique Items	June 4, 2001
CR L2001-03325	Fire Safety Issue (NSB) and PA System	June 6, 2001
CR L2001-03583	Station Off-hours Augmentation Drill	June 5, 2001
CR L2001-04091	Emergency Preparedness Drill Critique Items	July 11, 2001
CR L2001-04059	Training simulator abort during GSEP Scenario	July 11, 2001
CR L2001-04335	Emergency Preparedness Drill Critique Items	July 18, 2001
CR L2001-05198	Declining Performance in EP Drill, Exercise, and Actual Event (DEP) Performance Indicator	September 6, 2001

2OS1 Access Control For Radiologically Significant Areas

Condition Reports

L2000-03555	Locked High Radiation Area Door Opening From Spurious Strike From Abandoned Card Reader	June 28, 2000
L2001-02954	Additional Dose Received While Removing Scaffold	May 16, 2001
L2001-02001	Inadequate Input From Ops High Rad OOS Needs	March 31, 2001
L2001-03138	Unit-2 Scram Generated High Radiation Area	May 27, 2001
L2001-04293	Employees Entered High Radiation Areas With Flashlights	July 26, 2001
L2001-00927	Ineffective Use of Dose Reports	Feb. 14, 2001
L2001-03864	Increase of SDV Dose Rates Following Scrams	July 2, 2001
L2001-00442	Station Clock Reset - Human Performance	Jan 20, 2001

L2001-04305	Personal Items Released From the RPA	July 26, 2001
L2001-03991	Unposted Radiation Area Discovered While Performing Surveys	July 10, 2001
L2001-03644	Confusing Rad Posting Found During Routine System Walkdown	June 21, 2001
L2001-03324	Unposted Radiation Area	June 6, 2001
L2001-02659	Routine Survey Not Reflecting Current Rad Conditions	April 23, 2001
L2001-01489	Rad Rope Broken Due to Weather	March 8, 2001

Station Procedures and Job Standards

RP-AA-460	Controls For High and Very High Radiation Areas	Revision 1
RPJS-6.8	RP Coverage For Entry into High, Locked High and Very High Radiation Areas	Revision 1
RPJS-7.1	RP Posting Standard	Revision 0
RP-AA-210	Dosimetry Issue, Usage and Control	Revision 1
LFP-100-5	Control of Material/Equipment on the Refuel Floor	Revision 5

RWP and ALARA Plans

RWP #01010801	High Radiation Housekeeping Activities
RWP #01010810	Reactor Building RWCU Activities
RWP #01010831	Replace TIPS With Gamma TIPS
RWP #01010835	Decon Unit-2 Dryer Separator Pit
RWP # 01010889	Perform In-Leakage Testing on Unit-1

Audits, Self-Assessments and Field Monitoring Reports

	Self-Assessment Access Control to Radiologically Significant Areas	August 2001

	Monthly Self-Assessment Reports for the RP Department	Jan-July 2001
NOA-LS-00-4Q	Nuclear Oversight Continuous Assessment Report	Oct-Dec 2000
NOA-LS-01-1Q	Nuclear Oversight Continuous Assessment Report	Jan-March 2001
NOA-LS-01-2Q	Nuclear Oversight Continuous Assessment Report	April-June 2001
ATM #41483	Nuclear Oversight Field Observation	Jan 18, 2001
ATM #48039-20	Nuclear Oversight Field Observation	May 17, 2001
ATM #48047-11	Nuclear Oversight Field Observation	April 1, 2001
ATM # 48047-31	Nuclear Oversight Field Observation	May 28, 2001
ATM #55863-01	Nuclear Oversight Field Observation	July 9, 2001
ATM #55863-5	Nuclear Oversight Field Observation	July 17, 2001
ATM #55863-14	Nuclear Oversight Field Observation	July 23, 2001
ATM #55867-21	Nuclear Oversight Field Observation	July 24, 2001
ATM #55867-42	Nuclear Oversight Field Observation	July 27, 2001
ATM #55867-50	Nuclear Oversight Field Observation	Aug. 14, 2001
ATM #55867-53	Nuclear Oversight Field Observation	Aug. 16, 2001

Surveillance Records

RP-AA-460	Locked High Radiation Area Key Log, Access Log and Access Approvals	Jan-July 2001

Other Documents

	Effectiveness Review of Root Cause Investigation of Violation of RP Program	June 1, 2001
	LaSalle Radiologically Posted Area, Performance (Listing of Radiation, High Radiation and Locked High Radiation Areas)	
	LaSalle High Radiation Area Technical Specifications	

4OA1 Performance Indicator (PI) Verification

S.18	Emergency Preparedness Department Training and Reference Material ERO Drill/Exercise and Event Performance, NRC Performance Indicator 08 (S.18) Guidance	January 6, 2000
S.19	Emergency Preparedness Department Training and Reference Material Emergency Response Organization Drill Participation NRC Performance Indicator 09 (S.19) Guidance	February 1, 2000
EP-AA-120-1003	Emergency Preparedness Group Training and Reference Material Alert and Notification System Reliability NRC Performance Indicator R.EP.03 Guidance	March 31, 2001
RS-AA-122-108	Performance Indicator Emergency Response Organization Drill/Exercise Performance	Revision D
RS-AA-122-109	Emergency Response Organization Drill Participation	Revision D
RS-AA-122-110	Performance Indicator - Alert and Notification System Reliability	Revision 1
	LaSalle Monthly Siren Availability Report (Telemetry)	January 2000 - June 2001
	LaSalle Station Regulatory Assessment Performance Indicator R.EP.01: Drill, Exercise, and Actual Event Performance Data	January 2000 - June 2001
	LaSalle Station Regulatory Assessment Performance Indicator R.EP.02: Emergency Response Organization Drill Participation	January 2000 - June 2001
RS-AA-122-115	Performance Indicator - Occupational Exposure Control Effectiveness (Data Sheets Completed for July 2000-July 2001)	Revision 2

LIST OF ACRONYMS

ALARA	As-Low-As-Is-Reasonably-Achievable
ANS	Alert and Notification System
CFR	Code of Federal Regulations
CR	Condition Report
CST	Condensate Storage Tank
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EHC	Electro-Hydraulic Control
EP	Emergency Preparedness
ERO	Emergency Response Organization
FW	Feedwater
gpm	Gallons per Minute
HPCS	High Pressure Core Spray
IMC	Inspection Manual Chapter
LHRA	Locked High Radiation Area
LIS	LaSalle Instrument Surveillance
LOA	LaSalle Abnormal Operating Procedure
LOP	LaSalle Operating Procedure
LOS	LaSalle Operating Surveillance
LPCS	Low Pressure Core Spray
LST	LaSalle Special Test
MDRFP	Motor-Driven Reactor Feed Pump
MSIV	Main Steam Isolation Valve
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OE	Operability Evaluation
PI	Performance Indicator
P&ID	Piping and Instrumentation Diagrams
P/T	Pressure/Temperature
Radwaste	Radioactive Waste
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RP	Radiation Protection
RPS	Reactor Protection System
RR	Reactor Recirculation
RWP	Radiation Work Permit
SDP	Significance Determination Process
SRA	Senior Reactor Analyst
SSC	System, Structure, or Component
TDRFP	Turbine-Driven Reactor Feed Pump
UFSAR	Updated Final Safety Analysis Report
Vac	Volts, Alternating Current
WO	Work Order