April 22, 2003

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, Illinois 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2
NRC INTEGRATED INSPECTION REPORT 50-373/03-02; 50-374/03-02

Dear Mr. Skolds:

On March 31, 2003, 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 inspection findings which were discussed on April 3, 2003, with Mr. G. Barnes 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, one self-revealing finding of very low safety significance (Green) was identified which was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a Non-Cited Violation (NCV) consistent with Section VI.A of the NRC's Enforcement Policy. Additionally, one licensee-identified violation is listed in Section 4OA7 of this report. If you contest any NCV 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, D.C. 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 801 Warrenville Road, Lisle, IL 60532-4351; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the Resident Inspector Office at LaSalle County Station.

Since the terrorist attacks on September 11, 2001, the NRC has issued two Orders (dated February 25, 2002, and January 7, 2003) and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance access authorization. The NRC also issued Temporary Instruction 2515/148 on August 28, 2002, that provided guidance to inspectors to audit and inspect licensee implementation of the interim compensatory measures (ICMs) required by the February 25 Order. Phase 1 of TI2515/148 was completed at all commercial nuclear power plants during calendar year (CY) '02, and the remaining inspections are scheduled for completion in CY'03. Additionally, table-top security drills were conducted at several licensees

to evaluate the impact of expanded adversary characteristics and the ICMs on licensee protection and mitigative strategies. Information gained and discrepancies identified during the audits and drills were reviewed and dispositioned by the Office of Nuclear Security and Incident Response. For CY'03, the NRC will continue to monitor overall safeguards and security controls, conduct inspections, and resume force-on-force exercises at selected power plants. Should threat conditions change, the NRC may issue additional Orders, advisories, and temporary instructions to ensure adequate safety is being maintained at all commercial power reactors

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made 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 website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Bruce L. Burgess, Chief
Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 50-373/03-02;
50-374/03-02

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REGION III

Docket Nos:	50-373, 50-374
License Nos:	NPF-11, NPF-18
Report No:	50-373/03-02; 50-374/03-02
Licensee:	Exelon Generation Company
Facility:	LaSalle County Station, Units 1 and 2
Location:	2601 N. 21st Road Marseilles, IL 61341
Dates:	December 29, 2002 through March 31, 2003
Inspectors:	E. Duncan, Senior Resident Inspector D. Eskins, Resident Inspector B. Palagi, Senior Operations Engineer D. Jones, Reactor Engineer W. Slawinski, Senior Radiation Specialist J. Yesinowski, Illinois Department of Nuclear Safety
Approved by:	Bruce L. Burgess, Chief Branch 2 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000373-03-02, IR 05000374-03-02; Exelon; on 12/29/2002-03/31/2003, LaSalle County Station; Units 1 & 2; As-Low-As-Is-Reasonably-Achievable (ALARA) Planning and Controls.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections on radiation protection and inservice testing. The inspection was conducted by Region III inspectors and 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). 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 3, dated July 2000.

A. Inspection-Identified and Self-Revealing Findings

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

Green. A finding of very low safety significance and an associated Non-Cited Violation (NCV) were identified through a self-revealing event, when two contractor pipe fitters received an unplanned intake of radioactive material during grinding work on highly contaminated piping during Unit 2 refueling outage L2R09. Ineffective radiological controls were established for the work activity due to inadequate communications. This intake of radioactive material during a work activity on contaminated piping was precipitated by job planning deficiencies.

The issue had an actual impact on radiological safety (external and internal contamination) and was associated with the occupational radiation safety cornerstone attribute for exposure/contamination control that affected the cornerstone objective to ensure the adequate protection of worker health and safety from exposure to radioactive material. Although unexpected intakes occurred, the radiological conditions coupled with the work activity were not sufficient to produce a substantial potential for an exposure in excess of regulatory limits. Therefore, the finding was of very low safety significance. One Non-Cited Violation for the failure to meet the requirements of the Radiation Work Permit was identified.

B. Licensee-Identified Violations

One violation of very low safety significance which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking number is listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near full power for the inspection period, with the exception of the following:

- January 2, 2003 - Power was reduced to about 55 percent to perform power suppression testing. The unit was returned to full power on January 7.

- January 19, 2003 - Power was reduced to about 70 percent to perform control rod drive scram time testing and a rod pattern adjustment. The unit was returned to full power on January 20.

- February 14, 2003 - Power was reduced to about 85 percent to insert a control rod with inoperable position indication. The unit was returned to full power on February 15.

- March 7, 2003 - Power was reduced to about 55 percent to perform power suppression testing. The unit was returned to full power on March 12.

Unit 2 continued in coastdown at the beginning of the inspection period until shutdown for refueling outage L2R09 on January 20, 2003, with the exception of the following:

- January 10, 2003 - A manual scram was initiated due to low reactor water level caused by the loss of the 2A and 2C heater drain pumps, following the unexpected loss of the 2B condensate/condensate booster (CD/CB) pump. The unit was subsequently returned to service on January 14.

- January 21, 2003 - Unit 2 was shutdown for scheduled refueling outage L2R09. The outage was completed and Unit 2 was restarted and synchronized to the grid on February 21. The unit was returned to full power on February 25.

- March 14, 2003 - Power was reduced to about 55 percent to perform power suppression testing. The unit was returned to full power on March 19.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed partial walkdowns of accessible portions of trains of risk-significant mitigating systems equipment during times when the trains were of increased importance due to the redundant trains or other related equipment being unavailable. The inspectors utilized the mechanical and electrical breaker checklists

listed at the end of this report to verify that the components were properly positioned and that support systems were lined up as needed. The inspectors also examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies.

The inspectors verified the alignment of the following trains:

- Unit 2 Reactor Core Isolation Cooling (RCIC), Unit 0 and 2A Emergency Diesel Generators (EDGs) with the Unit 2 High Pressure Core Spray (HPCS) EDG out-of-service for planned maintenance.

- Unit 2 “B” Residual Heat Removal (RHR) and Residual Heat Removal Service Water (RHRSW) sub-systems with the Unit 2 “A” RHR and RHRSW sub-systems out-of-service for planned maintenance.

- Unit “0" EDG sub-system with the Unit 2A EDG sub-system out-of-service for planned maintenance.

- Unit 2 RCIC system with the Unit 2 HPCS system out-of-service for planned maintenance.

- Unit “0" EDG sub-system with the Unit 1A EDG sub-system out-of-service for planned maintenance.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Fire Protection Walkdowns

a. Inspection Scope

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

- Fire Zone 5E1: Unit 1 Turbine Building Lower Basement
- Fire Zone 5E2: Unit 2 Turbine Building Lower Basement
- Fire Zone 5C11: Unit 1 and Unit 2 Turbine Building Ground Floor General Area
- Fire Zone 3F: Unit 2 Traversing Incore Probe System Chamber
- Fire Zone 5B2: Unit 2 Heater Bays
- Fire Zone 5C4: Unit 2 Condenser Tube Pull Area
- Fire Zone 3J: Unit 2 Primary Containment
- Fire Zone 10C3: Unit 1 and Unit 2 Offgas Building - Elevation 674 Feet

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 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 observed. The inspectors also observed that extinguishers were located appropriately and that access to the extinguishers was unobstructed. Fire hoses were verified to be installed at appropriate 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 was inspected and verified to be properly installed and in good physical condition.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Observation

a. Inspection Scope

To evaluate the readiness of licensee personnel to fight fires, on February 27, 2003, the inspectors observed the fire brigade respond to a simulated fire in the Unit 2 Motor-Driven Reactor Feedwater Pump Room. The following aspects of the response were reviewed:

- Use of protective clothing and self-contained breathing apparatus (SCBAs).
- Use of fire hoses to demonstrate the capability to reach all necessary fire hazard locations without flow constrictions.
- Testing of hose nozzle patterns prior to entering the fire area.
- Entry into the fire area in a controlled manner.
- Presence of sufficient fire fighting equipment at the scene for the fire brigade to properly perform their fire fighting duties.
- Effectiveness and clarity of the fire brigade leader's directions.
- Efficiency and effectiveness of radio communications between plant operators and fire brigade members.
- Checking for fire victims and fire propagation into other plant areas.
- Effectiveness of simulated smoke removal operations.

The inspectors also verified that the drill was conducted in accordance with Exelon Corporate Procedure OP-AA-201-003, "Fire Drill Performance."

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

Annual Heat Sink Performance Review

a. Inspection Scope

The inspectors performed a visual inspection of the 2B Residual Heat Removal (RHR) heat exchanger and reviewed the associated eddy current examination results. In particular, the inspectors verified that the visual inspection was accomplished in accordance with ER-AA-340-1002, "Service Water Heat Exchanger and Component Inspection Guide," Revision 0. In addition, the inspectors ensured that the 2B RHR heat exchanger eddy current results were appropriately evaluated against preestablished acceptance criteria, and that the frequency of inspection was sufficient to detect degradation prior to the loss of heat removal capabilities below design values.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI) Activities (71111.08)

a. Inspection Scope

The inspectors conducted a review of the licensee's inservice inspection program for monitoring degradation of the reactor coolant system boundary and risk significant piping system boundaries. Specifically, the inspectors conducted a record review of the following examinations performed during Unit 2 Refueling Outage L2RO9:

Weld Number	System	Nondestructive Testing Method
1-NIR-2B	Reactor Pressure Vessel	Ultrasonic
1-NIR-2D	Reactor Pressure Vessel	Ultrasonic
1FW-1001-71A	Feedwater	Ultrasonic/Magnetic Particle
IRI-1001-05	RCIC	Ultrasonic
IRR-1055-13	Reactor Recirculation	Ultrasonic/Liquid Penetrant

In addition, radiographs of the following system welds were also reviewed: 2B21-F010A; 2B21-F010B; 2E12-F009; 2E51-F045.

These examinations were evaluated for compliance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements. The inspectors also reviewed inservice inspection procedures, personnel certifications, and NIS-2 forms for Code repairs performed during the last Unit 2 outage to confirm that ASME Code requirements were met.

The inspectors also reviewed a sample of inservice inspection related problems documented in the licensee's corrective action program, to assess conformance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. In

addition, the inspectors verified that operating experience was correctly assessed for applicability by the ISI group.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

.1 Quarterly Licensed Operator Requalification Training Simulator Observation

a. Inspection Scope

On February 26, 2003, the inspectors observed licensed operator requalification training scenario ESG 00C5-11, Loss of Bus 133/Loss of Reactor Building Closed Cooling Water/Ruptured Scram Discharge Volume/Fuel Element Failure/Emergency Depressurization.

On March 19, 2003, the inspectors observed licensed operator requalification training scenario ESG34, Small Earthquake/Control Rod Drive Drift With Reactor Manual Control System Trip/Fuel Failure/Scram Discharge Volume Rupture/Emergency Depressurization.

The inspectors observed operator actions to assess crew performance in terms of clarity and formality of communication; the ability to take timely action in the safe direction; the prioritizing, interpreting, and verifying of alarms; the correct use and implementation of procedures, including alarm response procedures; timely control board operation and manipulation, including high-risk operator actions; the oversight and direction by the shift manager, including the ability to identify and implement appropriate Technical Specification actions; and the group dynamics.

b. Findings

No findings of significance were identified.

.2 Biennial Written Examination and Annual Operating Test Results

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of individual written tests, Job Performance Measure (JPM) operating tests, and simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee during calender year 2002. The overall results were compared with the Significance Determination Process (SDP) in accordance with NRC Inspection Manual Chapter (IMC) 0609I, “Operator Requalification Human Performance Significance Determination Process.”

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the a(1) action plan associated with Reactor Recirculation and Flow Control (RR) system function RR-02. This function, which required a means to control reactor power by varying the coolant flow through the vessel, had exceeded the established reliability criteria on Unit 2 due to 2B RR flow control valve binding. The inspectors verified that the goals and corrective actions to address this problem were appropriate.

The inspectors reviewed the a(1) action plan associated with Feedwater system function FW-03. This function, which required American Society of Mechanical Engineers (ASME) testing of all primary containment isolation valves, had exceeded the established leakage criteria on Unit 1 and Unit 2 due to ineffective maintenance on the 24-inch inboard feedwater check valves, 1(2)B21-FW010A/B. The inspectors verified that the goals and corrective actions to address this problem were appropriate.

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 to verify that these 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 assessed the licensee actions to address increased online risk during these periods, such as establishing compensatory actions such as protected pathways, minimizing the duration of the activity, obtaining appropriate management approval, and informing appropriate plant staff, when online risk was increased due to maintenance on risk-significant structures, systems, and components (SSCs). The following specific activities were reviewed:

- Maintenance risk assessment for work planned during the week of January 12, 2003.

- Maintenance risk assessment for work planned during the week of February 23, 2003.

- Maintenance risk assessment for work planned during the week of March 2, 2003.

- Maintenance risk assessment for work planned during the week of March 16, 2003.

- Maintenance risk assessment for work planned during the week of March 23, 2003.

b. Findings

No findings of significance were identified.

1R14 Non-Routine Evolutions (71111.14)

.1 Loss of Main Control Room Alarms During Fire Protection Surveillance

a. Inspection Scope

The inspectors reviewed the circumstances surrounding a January 7, 2003, event in which a floor drain overflowed during a routine fire protection surveillance, drained through a degraded fire barrier onto a panel on the floor below, and caused numerous intermittent Main Control Room alarms, a ground on the direct current (DC) distribution system, and six failed annunciators.

In particular, the inspectors responded to the event and verified that the ground was promptly isolated as directed by the licensee's abnormal operating procedures, the affected cabinets were dried out prior to returning the equipment to service, and that additional testing was complete and comprehensive to ensure that no other equipment was affected.

b. Findings

No findings of significance were identified.

.2 Unit 2 Restart From LaSalle Forced Outage L2F35

a. Inspection Scope

On January 10, 2003, the Unit 2 reactor was manually scrammed following a loss of the 2B condensate/condensate booster pump and the 2A and 2B turbine-driven reactor feedwater pumps. The inspectors observed portions of the Unit 2 restart activities, including the approach to criticality, synchronizing of the main generator to the grid, startup and operation of the feedwater system, and power ascension. The inspectors verified that these activities were accomplished in accordance with applicable licensee procedures.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed selected Operability Evaluations (OEs) regarding 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 evaluations were reviewed:

- OE02-13 Revision 0 1(2)C51-J004A,B,C,D, and E Traversing Incore Probe (TIP) Ball and Shear Valves
- OE02-13 Revision 1 1(2)C51-J004A,B,C,D, and E TIP Ball and Shear Valves
- OE02-13 Revision 2 1(2)C51-J004A,B,C,D, and E TIP Ball and Shear Valves
- OE02-14 Revision 0 Degraded 2A RHR Pump Seal Cooler
- OE03-01Revision 0 General Electric Marathon Control Blades
- OE03-01Revision 1 General Electric Marathon Control Blades
- OE02-04 Revision 2 Main Steam Isolation Valve Limit Switch Temperatures
- OE03-02 Revision 0 Control Rod 34-51 Exceeds Maximum Withdrawal Speed

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors reviewed the following Operator Challenge (OC) to identify any potentially adverse impact on the function of mitigating systems or the ability to implement an abnormal or emergency operating procedure:

- OC 350: Emergency Diesel Generator (EDG) Cooler Outlet Throttle Valve Drifts During Cooling Water Pump Operation

As part of this evaluation, the inspectors also compared the configuration of physical restraints installed in the field to prevent the “0" EDG cooler outlet throttle valve from drifting against the configuration approved in Engineering Change (EC) 340193, “Physical Restraint of Diesel Generator Cooler Outlet Throttle Valve Position,” Revision 0.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed Design Change Package 333821 which installed a fully qualified redundant 125 Volt direct current (VDC) backup battery charger for Unit 2 Engineered Safety Feature (ESF) Division 1. In particular, the inspectors verified that the redundant charger was compatible with the physical interfaces, was environmentally and seismically qualified for the application, and was reviewed for inclusion into the Maintenance Rule scope. In addition, the inspectors verified that affected operations procedures and training had been identified and were planned or completed, and reviewed post-modification testing records to ensure that testing procedures were adequate for validation of the modification, and that the modification acceptance criteria had been met. Finally, the inspectors reviewed design and licensing basis documents, such as the Updated Final Safety Analysis Report (UFSAR), and verified that these documents had been updated or were in the process of being updated to reflect the modification.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed and/or observed the following post-maintenance testing activities involving risk significant equipment:

- Work Order (WO) 00430504: Install New 2E12-F009 Valve/Conduct Radiography
- LaSalle Technical Surveillance (LTS) 100-39: 2E51-F068/F040 Local Leak Rate Test
- WO 44919802: Repair 2B EDG Cooler 2E22-S001 Internal Coating Damage

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.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors observed the performance of LaSalle Unit 2 Refueling Outage L2R09 and evaluated licensee outage activities to ensure that the licensee considered risk in developing the outage schedule; adhered to administrative risk reduction methodologies developed to control plant configuration; developed mitigation strategies for losses of key safety functions; and adhered to the operating license and Technical Specification requirements that ensured defense-in-depth. The following specific outage-related activities were accomplished:

- Outage Plan Review

  The inspectors reviewed the licensee's outage control plan to verify that the licensee had appropriately considered risk, industry experience, and previous site-specific problems. The inspectors also confirmed that contingency plans for losses of key safety functions had been established.

- Monitoring of Shutdown Activities

  The inspectors observed the Unit 2 shutdown to Refueling Outage L2R09 to verify that the plant was operated in accordance with regulatory requirements and plant procedures, and in particular, that cool-down restrictions were followed.

- Licensee Control of Outage Activities

  The inspectors verified that the licensee appropriately managed the configuration of equipment during the outage to ensure that a defense-in-depth commensurate with the outage risk plan for key safety functions and applicable Technical Specifications was maintained. The inspectors also verified that outage activities were appropriately managed. In particular, out-of-service activities were reviewed to ensure that tags were properly hung to support the out-of-service. Reactor coolant system instrumentation was verified to be configured to provide adequate indication of reactor vessel pressure, temperature, and level. In addition, the inspectors routinely observed decay heat removal system parameters and verified that decay heat removal systems were functioning properly. The inspectors verified that flow paths, configurations, and alternative means for inventory addition and decay heat removal were consistent with the outage risk plan. The inspectors verified that the licensee controlled reactivity and maintained secondary containment in accordance with Technical Specifications.

- Refueling Activities

The inspectors observed fuel handling operations to verify they were conducted in accordance with Technical Specifications and approved procedures, and that the location of fuel assemblies was tracked from core offload through core reload.

- Monitoring of Heatup and Startup Activities

  The inspectors reviewed Technical Specifications, license conditions, and other prerequisites, commitments, and administrative procedure prerequisites for mode changes to ensure they were met prior to changing modes or plant configurations. The inspectors conducted a walkdown of containment prior to restart to verify that debris had not been left which could adversely impact the Emergency Core Cooling System (ECCS) suction strainers.

- Identification and Resolution of Problems

  The inspectors reviewed the licensee's identification of problems related to refueling outage activities to ensure they were identified at an appropriate threshold and that they were entered into the corrective action program.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed surveillance testing on risk-significant equipment and verified that the structures, systems and components (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 was 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:

- LTS-200-19 ECCS [Emergency Core Cooling System] Cubicle Area Cooler Air Flowrate Test
- LTS-200-9 2A RHR Pump Seal Cooler Service Water Side Flowrate Test

- LTS-800-7 0 EDG Trip/Bypass Test
- LTS-700-18 Unit 2 Division 1 Modified Battery Performance Test
- LOS-RI-R3 Unit 2 Reactor Core Isolation Cooling System Pump Operability Test
- LTS-400-1 Standby Gas Treatment HEPA [High Efficiency Particulate Air] Filter Test
- LTS-400-2 Standby Gas Treatment Charcoal Filter Test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

.1 Review of Temporary Modification (TMOD) 338718 - Removal of 0DG005 Valve Disc

a. Inspection Scope

The inspectors reviewed Temporary Modification 338718 which removed the disc from valve 0DG005, the “0" Emergency Diesel Generator (EDG) cooler inlet maintenance isolation valve, to address a valve stem-to-disc separation. The inspectors reviewed the associated 10 CFR 50.59 safety evaluation against the system design basis documentation, including the UFSAR, and verified that the temporary modification had no adverse impact on safety. In particular, the inspectors verified that the valve only provided a function during maintenance on the system and was not relied upon to isolate flow during a design basis accident.

b. Findings

No findings of significance were identified.

.2 Review of TMOD 338695 - Removal of 1DG019 Valve Disc

a. Inspection Scope

The inspectors reviewed Temporary Modification 338695 which removed the disc from valve 1DG019, the Unit 1 “A” Residual Heat Removal cubicle area cooler inlet maintenance isolation valve, to address a valve stem-to-disc separation. The inspectors reviewed the associated 10 CFR 50.59 safety evaluation against the system design basis documentation, including the UFSAR, and verified that the temporary modification had no adverse impact on safety. In particular, the inspectors verified that the valve only provided a function during maintenance on the system and was not relied upon to isolate flow during a design basis accident.

b. Findings

No findings of significance were identified.

.3 Review of TMOD 340938 - Installation of Temporary Drywell Temperature Monitoring

a. Inspection Scope

The inspectors reviewed Temporary Modification 340938 which installed temperature data loggers in the Unit 2 containment drywell. The inspectors reviewed the associated 10 CFR 50.59 safety evaluation against the system design basis documentation, including the UFSAR, and verified that the temporary modification had no adverse impact on safety.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiological Boundary Verification

a. Inspection Scope

The inspectors conducted walkdowns of selected radiologically controlled areas to verify the adequacy of radiological boundaries and postings. The inspectors reviewed both the administrative controls specified in radiation work permits (RWPs) and the physical controls (radiological postings and barriers) for access to these areas, and assessed worker adherence to these controls through direct observation. Specifically, the inspectors walked down several radiologically significant work area boundaries (high and locked high radiation areas) in the Turbine Building and in the Unit 2 Reactor Building including the Unit 2 drywell, and performed confirmatory radiation measurements in the drywell to verify that these areas and other selected radiation areas were properly posted and controlled in accordance with 10 CFR 20 and the licensee's Technical Specifications.

b. Findings

No findings of significance were identified.

2OS2 As-Low-As-Is-Reasonably-Achievable (ALARA) Planning and Controls (71121.02)

.1 Radiation Dose Goals and Trending

a. Inspection Scope

The inspectors reviewed the licensee's outage exposure data for the last several refueling outages to establish its prior performance relative to the industry. Job specific and cumulative outage exposure data and exposure trends through the first 10 days of

the originally scheduled 27 day Unit 2 refueling outage (L2R09) were reviewed to assess the licensee's radiation dose performance compared to pre-outage exposure projections. The inspectors also reviewed the licensee's dose forecasting practices for selected radiologically significant jobs (those with dose expenditure projected greater than about 5 rem) which were being performed during the outage. The review was performed to determine if adequate technical bases for outage dose estimates existed, and to determine if prior outage experiences, job scope, and resource estimates were accurate and used adequately to establish dose projections. Additionally, the inspectors reviewed the effectiveness of the radiation protection (RP) organization's daily exposure tracking for the outage to verify that the licensee could timely identify problems with its exposure performance and take actions to address identified deficiencies.

b. Findings

No findings of significance were identified.

.2 Radiological Work Planning

a. Inspection Scope

The inspectors reviewed the licensee's procedure for operational ALARA planning and controls and evaluated several L2R09 ALARA plans to verify consistency with the procedure and to assess their overall adequacy relative to prior licensee practices and industry standards. Specifically, the inspectors selected the following outage jobs that were projected to accrue in excess of 5 rem, and assessed the adequacy of the radiological controls and the work planning developed for each:

- L2R09 Temporary Shielding in Drywell (RWP 10001671)
- L2R09 Scaffold Activities in Drywell (RWP 10001673)
- Unit 2 Drywell Insulation Activities for L2R09 (RWP 10001675)
- L2R09 Control Rod Drive (CRD) Replacements (RWP 10001685)
- Unit 2 Drywell 2B21F010A /2B21F010B Valve Repair (RWP 10001694)
- Disassemble and Reassemble Reactor Vessel, Fuel Moves, Reactor Cavity and Dryer Separator Pit Decon for L2R09 (RWP 10001704)
- L2R09 2E12-F009 Valve Activities (RWP 10001801)
- Repair of the 2B33-F060B Valve (RWP 10001802)

The inspectors reviewed the RWP and the ALARA plan developed for each job, and assessed the radiological engineering controls and other dose mitigation techniques specified in these documents to verify that the plans were completed in compliance with procedure, included appropriate controls to reduce dose, and were sufficiently comprehensive as dictated by the radiological hazards. These documents were also reviewed to determine if job history files, lessons the licensee learned from past outages, and industry operating experiences were adequately integrated into each work package. The inspectors discussed ALARA planning with several RP staff to determine if adequate interface between contractors, station work groups, and RP ALARA staff occurred during job planning. Additionally, the inspectors reviewed the RP staff's

assessment and contingency planning for potential transuranic (TRU) nuclides to verify that the licensee developed adequate protocols to identify and control alpha emitting materials.

b. Findings

No findings of significance were identified.

.3 Implementation of ALARA Controls and Radiological Oversight of Work

a. Inspection Scope

The inspectors selected the following high collective exposure or high radiation area jobs being conducted during the outage and reviewed the execution of the ALARA program:

- Unit 2 Turbine Building High Risk Maintenance (i.e., 2A Steam Jet Air Ejector Valve Disassembly) (RWP 10002142)
- Temporary Shielding in Drywell (RWP 10001671)
- Repair of the 2B33-F060A Valve (RWP 1002372)
- Replacement of the 2E12-F009 Valve (RWP 1001801)
- Replacement of the 2B21-F010A/B Valves (RWP 10001694)

The inspectors observed, independently assessed and/or discussed the radiological performance for each activity with involved RP staff and work crews. Also, total effective dose equivalent (TEDE) ALARA evaluations completed for these activities and for other selected outage work activities were assessed for technical adequacy. Work in progress reports for these and other selected jobs were reviewed to assess their adequacy and consistency with the licensee's ALARA procedure. The inspectors reviewed radiation survey data for a variety of radiologically significant outage jobs to determine the extent of any alpha emitting nuclides and to verify the accuracy of assumptions used in TEDE ALARA evaluations completed during work planning. The pre-job briefings for the valve disassembly work in the steam jet air ejector room and for the latter phases of the 2E12-F009 valve cutout were attended to verify that the work activities were adequately planned and that radiological information was exchanged effectively. The inspectors evaluated the licensee's radiological engineering controls at other work locations to verify that the controls were consistent with those specified in the respective ALARA plans. Additionally, the inspector reviewed a radiological intake incident that occurred on January 30, 2003, during work on an RHR system valve in the drywell to assess the licensee's response to the incident, the adequacy of the RP staff's evaluation of the work activity, and the corrective actions (Section 20S2.8).

b. Findings

No findings of significance were identified.

.4 Verification of Exposure Estimates and Exposure Tracking Systems

a. Inspection Scope

The inspectors reviewed the methodology and assumptions used by the ALARA group to develop L2R09 dose estimates, and compared collective outage and individual job dose performance for the first 10 days of the outage to assess dose performance and determine the accuracy of pre-outage projections. The inspectors selectively reviewed job dose history files and dose reduction techniques applied to selected jobs to verify that previous problems had been adequately addressed. In particular, the inspectors reviewed those jobs which had or were expected to expend greater than 5 rem and which the dose expenditure differed from original dose projections, to determine whether revised dose estimates were justified and should not have been accurately projected initially. Specifically, the inspectors evaluated these jobs to determine the extent that additional dose expenditures were caused by ALARA planning or ALARA execution problems and whether the licensee identified those factors that contributed to additional dose and/or inaccurate dose estimates. The inspectors also reviewed the process used to revise dose estimates and capture lessons learned to verify compliance with the licensee's ALARA procedure. As of early January 31, 2003, the licensee had recorded an outage exposure of approximately 180 rem compared to its estimate of about 163 rem for that stage of the outage. The licensee's exposure tracking system was also reviewed to determine if the level of exposure tracking detail, exposure report timeliness, and report distribution were sufficient to support the control of outage exposures.

b. Findings

No findings of significance were identified.

.5 Source Term Reduction and Control

a. Inspection Scope

The inspectors reviewed some of the exposure reduction initiatives taken for the outage such as flushing, hydrolazing and installation of temporary shielding. The inspectors reviewed aspects of the licensee's water chemistry control program relative to initiatives for mitigating intergranular stress corrosion cracking which also had an impact on plant source term. Additionally, the licensee's longer range plans for source term reduction were reviewed to determine if source term reduction initiatives were being developed and supported by station management.

b. Findings

No findings of significance were identified.

.6 Monitoring of Declared Pregnant Women and Dose to the Embryo/Fetus

a. Inspection Scope

The inspectors reviewed the license's monitoring methods and procedures, exposure controls, and the information provided to declared pregnant women to determine if an adequate program had been implemented to limit embryo/fetal dose. The inspectors also reviewed the pregnancy declaration and radiation exposure results for three individuals that declared their pregnancy to the licensee within the 18 months preceding the inspection, to verify compliance with the requirements of 10 CFR 20.1208 and 20.2106.

b. Findings

No findings of significance were identified.

.7 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the results of an RP self-assessment completed as part of an outage ALARA readiness review and condition reports (CRs) generated by the RP staff during the outage to evaluate the effectiveness of the RP organization's ability for problem identification and resolution. The inspectors also reviewed outage related Nuclear Oversight Department field observations, RP program related CRs generated during the outage by those outside the RP organization, and an apparent cause evaluation related to the intake incident described in Section 2OS2.8. This review was performed to verify that the licensee adequately identified individual problems and trends, determined contributing causes and extent of condition, and developed appropriate corrective actions.

b. Findings

No findings of significance were identified.

.8 Review of a Radiological Intake Incident During Work On Valve 2E12-F325/6B

a. Inspection Scope

The inspectors reviewed the circumstances associated with a radiological intake incident that occurred during the Unit 2 refueling outage on January 30, 2003, associated with work on a Residual Heat Removal (RHR) system drain valve. Specifically, the inspectors reviewed the licensee's Apparent Cause Evaluation (ACE) report, ALARA work planning documents, the TEDE ALARA evaluation, the RWP that governed the work activity, and discussed the incident with the radiation protection manager. The inspectors also reviewed the licensee's bioassay results and internal dose assessment calculations to verify the accuracy of the licensee's dose assessment.

b. Findings

Introduction

A self-revealing Green finding and an associated Non-Cited Violation (NCV) were identified for the failure to adhere to an RWP during the performance of high energy (grinding) work on RHR drain valve 2E12-F325/6B.

Description

On January 30, 2003, two contract workers (pipe fitters) were both externally and internally contaminated while working in the drywell, as they used a grinder to cut through a socket weld which held inner and outer diameter sections of RHR drain valve piping together. The inner section of piping needed to be extracted to allow replacement of the drain valve. The contamination event was self-revealing when the workers alarmed personnel contamination monitors (PCMs) following their departure from the Unit 2 drywell. The workers had facial contamination ranging from 5000 to 7000 disintegrations per minute (dpm), small intakes of radioactive material, and areas of the drywell were contaminated as a result of the grinding activities.

On the evening of January 29, 2003, a member of the licensee's ALARA staff and the radiation protection technician (RPT) that was to provide job coverage met with the pipe fitters to discuss the details of the work evolution and the radiological controls that were to be used for the job. The work plan called for use of a band saw to cut-out the valve and a new valve was to be welded in place. An emery cloth or a soft flapping wheel was to be used, as necessary, to prepare the pipe surfaces for welding. A TEDE ALARA evaluation was completed by the ALARA staff and specified the radiological engineering controls given the scope of work to be completed. The ALARA evaluation did not assess the impact or address the radiological controls that would be required for grinding work, since less abrasive flapping was determined to be sufficient. The work plan and associated ALARA evaluation approved the use of a flapper without the need for any radiological engineering controls, provided the contamination levels of those areas to be worked were reduced to less than 10,000 dpm. No grinding was to be performed. The RWP required that high energy work (i.e., grinding) not be performed without RP supervisor approval and a TEDE ALARA evaluation, and that workers directly communicate with the RPT.

The drain valve piping was successfully cut out using the band saw without incident and that work was covered by the RPT that attended the pre-job briefing earlier in the shift. After the pipe cut, that RPT was relieved and minutes later a third RPT relieved the second. Although the pipe was successfully severed, a socket weld held an inner concentric portion of the piping to an outer portion, which interfered with proper valve fit-up. The pipe fitters determined that the socket weld needed to be ground out to extract the inner pipe section, and informed the RPT that was providing job coverage. After consulting the drywell RP supervisor, the RPT determined that grinding was acceptable provided contamination levels were less than 10,000 dpm. The RPT completed contamination surveys on the interior portions of the pipe and socket weld area and found high removable contamination levels (approximately 1 billion dpm). The external areas of the socket weld in the area of the cut exhibited much lower

contamination and were further decontaminated by the RPT to about 3000 dpm so grinding could be completed safely. The grinding was then allowed to commence; however, the RPT did not fully understand the extent of what the pipe fitters intended to grind nor were the bounding conditions of the TEDE ALARA evaluation known to the RPT. The pipe fitters ground-off the socket weld and likely ground into the highly contaminated portions of the piping in the process. As a result, the pipe fitters were contaminated and airborne beta/gamma activity, later determined to be approximately 2 DAC (derived air concentration), was generated.

The work was completed, the crew exited the drywell and alarmed the PCMs. Whole body count analysis showed both pipe fitters had small intakes of radioactive material. Further evaluation by the licensee disclosed intakes primarily through the ingestion pathway and contamination surveys indicated the presence of low levels of alpha emitting nuclides. The maximum worker dose was conservatively calculated at 20 mrem committed effective dose equivalent (CEDE) including a dose of approximately 7 mrem from alpha and pure beta emitters.

The licensee's apparent cause evaluation (ACE) identified that the radiological engineering controls established for the work were ineffective in preventing airborne contamination and intakes because the work was conducted outside the bounds of the TEDE ALARA evaluation. The ACE also determined that communications between those involved in job planning and execution were inadequate, particularly the communications between the pipe fitters and the RPT that covered the grinding operation.

Analysis

The issue had an actual impact on radiological safety (external and internal contamination) and if not corrected would become a more significant concern given the high contamination levels involved and should the radiological controls established in the field not be adequate to prevent airborne radioactivity and worker intakes. Also, the issue was associated with the occupational radiation safety cornerstone attribute for exposure/contamination control (RP control) and affected the cornerstone objective to ensure the adequate protection of worker health and safety from exposure to radioactive material. Therefore, the issue is more than minor and represents a finding which was evaluated using the Significance Determination Process (SDP) for the Occupational Radiation Safety Cornerstone.

The inspectors determined that the lack of clear communications between the pipe fitters and the RPT, concerning the extent of the grinding operation, led to ineffective evaluation of the radiological hazards. Subsequently, this error in communications resulted in the unexpected contamination of the pipe fitters. Furthermore, the inspectors determined that the finding did not involve ALARA planning or work controls (as defined in Manual Chapter 0609, Appendix C), there was no overexposure or a substantial potential for an overexposure (given the actual airborne concentrations), and the ability to assess dose was not compromised. Consequently, the inspectors concluded that the SDP assessment for this finding was of very low safety significance (Green).

Enforcement

Technical Specification 5.4.1 requires, in part, that procedures be established, implemented and maintained that cover the activities recommended in Regulatory Guide 1.33, Revision 2, Appendix A, which include procedures for ALARA program implementation. Procedure RP-AA-401, "Operational ALARA Planning and Controls," requires in Section 3 that workers adhere to RWP requirements. The failure to fully adhere to the RWP requirements for adequate communication with the RPT and for a TEDE ALARA evaluation before performing high energy (grinding) work is a violation of Technical Specification 5.4.1. However, because the licensee documented this issue in its corrective action program (CR 00142019) and because the violation is of very low safety significance, it is being treated as a Non-Cited Violation (NCV 50-373/0302-01 and 50-374/0302-01).

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification(71151)

Cornerstone: Mitigating Systems

.1 Reactor Coolant System Specific Activity Performance Indicator

a. Inspection Scope

The inspectors reviewed the dose equivalent iodine calculation procedure, the reactor coolant system (RCS) specific activity performance indicator procedure and interviewed members of the licensee's chemistry staff involved in the determination and verification of RCS specific activity. The inspectors selectively reviewed the licensee's Unit 1 and Unit 2 chemistry sample analysis results for maximum dose equivalent iodine for April 2002 through December 2002. These reviews were performed to verify that the licensee adequately determined dose equivalent iodine values, and to verify adherence to station procedures and to the guidance contained in Nuclear Energy Institute (NEI) 99-02 relative to assessing and reporting the RCS specific activity performance indicator. Additionally, the inspectors observed a chemistry technician collect an RCS sample to verify that the sample was collected properly, and discussed with chemistry staff the method used to calculate dose equivalent iodine to verify its adequacy.

b. Findings

No findings of significance were identified.

.2 Unplanned Power Changes Per 7000 Critical Hours Performance Indicator

a. Inspection Scope

The inspectors reviewed 4th quarter data for the Unit 1 and Unit 2 Unplanned Power Changes Per 7000 Critical Hours performance indicator. The inspectors utilized the performance indicator definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 2.

b. Findings

No findings of significance were identified.

4OA3 Event Followup(71153)

a. Inspection Scope

On January 10, 2003, the Unit 2 reactor was manually scrammed on rapidly decreasing reactor vessel level following a loss of the 2B condensate/condensate booster pump and the 2A and 2C heater drain pumps. 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. The inspectors determined that all systems responded to the event as designed, the automatic shutdown was not complicated by material condition deficiencies associated with mitigation equipment, and that no human performance errors complicated the event response. Details of the event were communicated to the region-based risk analysts who determined that the event was of low risk-significance.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. Barnes and other members of licensee management on April 3, 2003. 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 exit meetings were conducted for:

- Inservice Inspection with Mr. G. Barnes on January 30, 2003.
- Licensed Operator Requalification with Mr. M. Entwistle on December 19, 2002.
- Occupational Radiation Safety ALARA program inspection with Mr. G. Barnes on January 31, 2003, and followup telephone discussion with Ms. K. Hobbs on February 11 and 13, 2003.

4OA7 Licensee Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which met the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a Non-Cited Violation (NCV).

Technical Specification 5.7.4 requires that for individual areas accessible to personnel with radiation levels such that a major portion of the body could receive in one hour a dose in excess of 1000 millirem (mrem) that are located within large areas, such as containment, where no enclosure exists for purposes of locking, and no enclosure can be reasonably constructed around the individual areas, then that area shall be roped off, conspicuously posted and a flashing light shall be activated as a warning device. On February 17, 2003, radiation personnel identified an area in the Unit 2 containment which exceeded the dose rate limits specified in Technical Specification 5.7.4, but was not controlled as a high-high radiation area as required. This issue was entered into the licensee's corrective action program as Condition Report 144948. Because personnel access to the area was limited due to the location of the area and no actual overexposure occurred, this violation is not more than of very low significance, and is being treated as a Non-Cited Violation (50-374/0302-02).

KEY POINTS OF CONTACT

Licensee

G. Barnes, Site Vice President
S. Landahl, Station Manager
T. Connor, Design Engineering Supervisor
D. Czufin, Site Engineering Manager
D. Enright, Operations Manager
K. Hobbs, Radiation Protection Manager
G. Kaegi, Regulatory Assurance Manager
C. Wilson, Station Security Manager
M. Entwistle, Operations Training Manager
S. Fatora, Chemistry Manager

Nuclear Regulatory Commission

D. Jones, Reactor Engineer
B. Palagi, Senior Operations Engineer
W. Slawinski, Senior Radiation Specialist

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-373/374/0302-01	NCV	Failure to Adequately Follow the Requirements of the RWP for Grinding Work on RHR Drain Valve Piping.
50-374/0302-02	NCV	Uncontrolled High-High Radiation Area.

Closed

50-373/374/0302-01	NRC	Failure to Adequately Follow the Requirements of the RWP for Grinding Work on RHR Drain Valve Piping.
50-374/0302-02	NCV	Uncontrolled High-High Radiation Area.

Discussed

None

LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ALARA	As-Low-As-Is-Reasonably-Achievable
ASME	American Society of Mechanical Engineers
CD/CB	Condensate/Condensate Booster
CEDE	Committed Effective Dose Equivalent
CR	Condition Report
CRD	Control Rod Drive
CFR	Code of Federal Regulations
CY	Calendar Year
DAC	Derived Air Concentration
DC	Direct Current
DRS	Division of Reactor Safety
EC	Engineering Change
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ESF	Engineered Safety Feature
FW	Feedwater
HEPA	High Efficiency Particulate Air
HPCS	High Pressure Core Spray
ICM	Interim Compensatory Measure
IMC	Inspection Manual Chapter
ISI	Inservice Inspection
JPM	Job Performance Measure
L2R09	Unit 2 Ninth Refueling Outage
LOS	LaSalle Operating Surveillance
LTS	LaSalle Technical Surveillance
MT	Magnetic Particle Testing
mrem	millirem
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OC	Operator Challenge
OE	Operability Evaluation
PARS	Publicly Available Records
PCM	Personnel Contamination Monitor
PI	Performance Indicator
PT	Penetrant Testing
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
RP	Radiation Protection
RPT	Radiation Protection Technician
RPV	Reactor Pressure Vessel

LIST OF ACRONYMS USED (Continued)

RR	Reactor Recirculation
RWP	Radiation Work Permit
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SSC	Structure, System, or Component
TEDE	Total Effective Dose Equivalent
TIP	Traversing Incore Probe
TMOD	Temporary Modification
TRU	Transuranic Nuclide
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
UT	Ultrasonic Testing
VDC	Volts Direct Current
WO	Work Order

LIST OF DOCUMENTS REVIEWED

Equipment Alignment

LOP-RI-02M	Unit 2 Reactor Core Isolation Cooling System Mechanical Checklist
LOP-RI-02E	Unit 2 Reactor Core Isolation Cooling System Electrical Checklist
LOP-DG-03M	Unit 0 Emergency Diesel Generator Mechanical Checklist
LOP-DG-03E	Unit 0 Emergency Diesel Generator Electrical Checklist
LOP-DG-04M	Unit 2A Emergency Diesel Generator Mechanical Checklist
LOP-DG-04E	Unit 2A Emergency Diesel Generator Electrical Checklist
LOP-RH-03E	Unit 2 Residual Hear Removal Service Water Electrical Checklist
LOP-RH-04E	Unit 2 Residual Heat Removal Electrical Checklist
LOP-RH-2BM	Unit 2 Residual Heat Removal Mechanical Checklist
LOP-RHWS-2BM	Unit 2 Residual Heat Removal Service Water Mechanical Checklist

Fire Protection

Updated Final Safety Analysis Report - Appendix H, Revision 13
OP-AA-201-003, “Fire Drill Performance,” Revision 5
OP-AA-201-003, Attachment 1, “Fire Drill Record,” dated February 27, 2003

Heat Sink Performance

ER-AA-340-1002, “Service Water Heat Exchanger and Component Inspection Guide,” Revision 0
L2R09 Eddy Current Testing Results - 2B RHR Heat Exchanger

Inservice Inspection

MT-EXLN-102V0, Procedure for Magnetic Particle Examination Using Alternating Current Yoke, Dry Powder, or Wet Visible, dated January 5, 2002
PT-EXLN-104V0, Procedure for Liquid Penetrant Examination Color Contrast (Visible) Solvent Removable, dated January 5, 2002
GE-PDI-UT-1, PDI Generic Procedure for the Ultrasonic Examination of Ferritic Piping Welds, dated January 21, 2003

GE-PDI-UT-2, PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds, dated January 15, 2003
CR 141181, Nuclear Oversight Identified Incomplete Welds
CR 127977, CRD Housing Weld Makeup Calculations

Operator Licensing Requalification

ESG 00C5-11, Loss of Bus 133/Loss of Reactor Building Closed Cooling Water/Ruptured Scram Discharge Volume/Fuel Element Failure/Emergency Depressurization

LIST OF DOCUMENTS REVIEWED

Maintenance Rule Implementation

Maintenance Rule a(1) Action Plan For RR-02
Maintenance Rule a(1) Action Plan For FW-03

Maintenance Risk Assessment and Emergent Work Evaluation

LaSalle 7-Day Look-Ahead Schedule (Various)
WC-AA-10, Attachment 8, "Unavailability Guidelines," Revision 6
SEAG 00-000469, "LaSalle Guidance For Applicable Definition of Unavailable For Online Risk Program," dated November 21, 2000
Clearance Order 00016017, "IM 2E22-N504 HPCS DG Starting Air 2A Pressure Switch"

Personnel Performance During Nonroutine Plant Evolutions

LGP-1-1, Normal Unit Startup, Revision 68

LOP-RM-01, Reactor Manual Control Operation, Revision 21
LOA-RD-201, Control Rod Drive Abnormal, Revision 6
LOA-AN-101, Loss of Annunciators, Revision 6
Prompt Investigation - Fire Protection Surveillance Resulted in Numerous Control Room Alarms

Operability Evaluations

OE02-13, "1(2)C51-J004A,B,C,D, and E Traversing Incore Probe (TIP) Ball and Shear Valves," Revision 0.
Calculation 0-DX-18, "Post-Accident Doses for Determining Equipment Qualification Requirements," Revision 0.
Calculation L-002522, "Power Uprate EQ [Equipment Qualification] Zone and Equipment Radiological Doses," Revision 0.
Condition Report 00131093, "GE [General Electric] Part 21 TIP System Ball and Shear Valve Radiation Specification, dated November 11, 2002.
Condition Report 00131665, "TIP System Ball and Shear Valve Radiation Specification," dated November 14, 2002.
Electrical Power Research Institute (EPRI) Report NP-2129, "Radiation Effects on Organic Materials in Nuclear Plants," dated November 1981.
Calculation 5-EQ-1, "Qualification Doses For Elevation 740'-0","Revision 0, dated September 17, 1981.
NRC Information Notice 96-25, "Traversing Incore Probe Over withdrawn at LaSalle County Station, Unit 1, dated April 30, 1996.
NRC Information Notice 88-63, Supplement 1, "High Radiation Hazards From Irradiated Incore Detectors and Cables," dated October 5, 1990.
LaSalle Administrative Procedure (LAP) 900-51, "TIP Area Access Controls," Revision 0, dated August 14, 2001.
OE02-14, "Degraded 2A RHR Pump Seal Cooler," Revision 0, dated December 9, 2002.

LIST OF DOCUMENTS REVIEWED

Operability Evaluations (continued)

Calculation L-000711, "Evaluation of RHR Service Water Flow to RHR Pump Seal Coolers," Revision 4A, dated May 31, 2002.
CR 00134065, "2A RHR Pump Seal Cooler Flow Outside Acceptance Criteria," dated December 4, 2002.
CR 00134430, "Corrections to CR 134065 Prompt Operability" dated December 6, 2002.
OE03-001, "General Electric Marathon Control Blades," Revision 0, dated January 29, 2003.
OE02-04, "Main Steam Isolation Valve Limit Switch Temperatures," Revision 2
EC338359, "EQ [Equipment Qualification] Life of MSIV [Main Steam Isolation Valve] Limit Switches"
Equipment Qualification (EQ) Binder LS-019, "Limit Switches - NAMCO EA740 Series"
OE03-02, "Control Rod 34-51 Exceeds Maximum Withdrawal Speed," Revision 0

Operator Workarounds

Operator Challenge 350: Emergency Diesel Generator Cooler Outlet Valve Drift During Cooling Water Pump Operation
EC 340193: Physical Restraint of Diesel Generator Cooler Outlet Throttle Valve Position, Revision 0

Permanent Plant Modifications

WO 00378027, "Final Tie of Back-Up Unit 2 Division 1 Battery Charger," dated February 13, 2003
Calculation L-002856, "Evaluation of Cable Tray Routing Points, Conduit Supports, Battery Charger Foundations and Anchorages, and Electrical Panels Due to the Addition and Replacement of 200 Ampere Battery Chargers," Revision 0
LOP-DC-01, "Battery Charger Startup and Shutdown," Revision 21, dated February 10, 2003
LES-DC-103, "Battery Charger Capacity Test," Revision 15, dated October 29, 2002
LST-2002-038, "Unit 2 Division 1 Battery Charger 2DC23E," Revision 0, dated December 16, 2002
Engineering Change 333821, "Installation of New Backup Battery Charger Modification," Revision 0
UFSAR Change Request LU2002-017

Post-Maintenance Testing

Work Order 00430504 Install New 2E12-F009 Valve/Conduct Radiography
LTS-100-39 "2E51-F068/F040 Local Leak Rate Test," Revision 10
Drawing M-147, Sheet 1, Unit 2 Reactor Core Isolation Cooling System
LTS-100-2, "Local Leak Rate Test (LLRT), Mass Makeup Method," Revision 26
WO 44919802 Repair 2B EDG Cooler 2E22-S001 Internal Damage
CR 149471 Gasket Could Not Be Changed Out on Tube Sheet, dated March 17, 2003

LIST OF DOCUMENTS REVIEWED

Refueling and Outage Activities

L2R09 Shutdown Safety Management Program, dated January 9, 2003
LOP-DW-01, “Drywell Closeout (After Outage),” Revision 34, dated January 18, 2003
LGP-1-S1, “Master Startup Checklist,” Revision 53, dated December 17, 2002
LGP-1-1, “Normal Unit Startup,” Revision 69, dated December 18, 2002
LOS-TG-02, “Turbine Generator Startup,” Revision 45, dated February 6, 2003

Surveillance Testing

LTS-200-19, “ECCS Cubicle Area Cooler Air Flowrate Test”
LTS-200-9, “2A RHR Pump Seal Cooler Service Water Side Flowrate Test”
LTS-800-7, “0 EDG Trip/Bypass Test,” Revision 19
LTS-700-18 Unit 2 Division 1 Modified Battery Performance Test
LOS-RI-R3 Unit 2 Reactor Core Isolation Cooling System Pump Operability Test
LTS-400-1 Standby Gas Treatment HEPA Filter Test, Revision 0, dated March 10, 2003
LTS-400-2 Standby Gas Treatment Charcoal Filter Test, Revision 11, dated March 10, 2003
WO99254028, Standby Gas Treatment HEPA Filter Test, dated March 27, 2003

Temporary Plant Modifications

EC338718, “Temporary Configuration Change to Remove Disc From Valve 0DG005 Inlet Isolation to ‘0' EDG Cooler 0DG01A,” Revision 0

10 CFR 50.59 Screening L02-0316, “Temporary Configuration Change to Remove Disc From Valve 0DG005 Inlet Isolation to “0” EDG Cooler 0DG01A”
EC338695, “Temporary Configuration Change to Remove Disc From Valve 1DG019 Inlet Isolation to 1VY01A Cooler,” Revision 0
10 CFR 50.59 Screening L02-0313, “Temporary Configuration Change to Remove Disc From Valve 1DG019 Inlet Isolation to 1VY01A Cooler”
Drawing M-87, Sheet 3, “Core Standby Cooling System,” dated September 5, 2002
EC340938, “Installation of Temporary Temperature Monitoring in the Unit 2 Drywell,” Revision 0
10 CFR 50.59 Screening L03-0061, “Installation of Temporary Temperature Monitoring in the Unit 2 Drywell”

Performance Indicator Verification

Unplanned Power Change Data Sheets - January through December 2002
LaSalle Monthly Operating Reports - January through December 2002
LS-AA-2900; Monthly Performance Indicator Data Elements for Reactor Coolant System Specific Activity; Monthly Data Sheets for April 2002 - January 2003
LCP-310-02, Sampling of Plant Process Water, Revision 15
LCP-830-14, Dose Equivalent I-131, Attachment A (Unit 2) Data Sheets for October and November 2002

LIST OF DOCUMENTS REVIEWED

Identification and Resolution of Problems

Root Cause Report - "Units 1 and 2 - Missing Cooling Coil Mounting Screws in Safety-Related Room Coolers"
Drawing 28SW404543, "CSCS Equipment Area Cooling Coils," dated July 21, 1976
ER-AA-2030, "Conduct of Plant Engineering Manual," Revision 1
EC 340007, "Determination of Minimum Number of Sheet Metal Screws for Safety-Related CSCS [Core Standby Cooling System] Equipment Area Cooler Operability," Revision 2

Event Followup

LAP-200-7, Attachment A, "Root Cause Determination of Event," dated January 10, 2003.
Root Cause Report - Unplanned Trip of LaSalle Unit 2.
Drawing 1E-2-4029AA, Turbine EHC System Schematic Diagram, Revision C.
Drawing 1E-2-4029AQ, Turbine EHC System Alarm Schematic Diagram, Revision D.
Drawing 1E-2-4005AH, 4160 Volt Switchgear 241X Auxiliary Compartment Schematic Diagram, Revision D.

Access Control to Radiologically Significant Areas

RP-AA-460, Controls for High and Very High Radiation Areas, Revision 2
CR 138407, Unposted Radiation Area, January 7, 2003
CR 138492, Process Radiation Alarm - Unposted Radiation Area, January 7, 2003

ALARA Planning and Controls

Alpha Contaminant Assessment Program (and supporting data), Developed October - November 2002
RP-AA-401, Operational ALARA Planning and Controls, Revision 2
RP-AA-403, Administration of the Radiation Work Permit Program, Revision 1
Focus Area Self-Assessment Report 2002-010, Outage Readiness and Preparation, December 2002
Chemistry Trend Charts (various) for Unit 2 Offgas, Reactor Coolant Iodines and Neptunium-239, January 2002 - January 2003
RWP 10001671 and Associated ALARA Plan, L2R09 Temporary Shielding in Drywell, Revision 0
RWP 10001673 and Associated ALARA Plan, L2R09 Scaffold Activities in Drywell, Revision 0
RWP 100001685 and Associated ALARA Plan, L2R09 CRD Replacements, Revision 0
RWP 10001694 and Associated ALARA Plan, Unit 2 Drywell 2B21F010A/2B21F010B Valve Repair/Replace, Revision 1
RWP 10001704 and Associated ALARA Plan, Disassemble and Reassemble Reactor Vessel, Fuel Moves, Reactor Cavity, and Dryer Separator Pit Decontamination for L2R09, Revision 0
RWP 10001801 and Associated ALARA Plan, L2R09 2E12-F009 Valve Activities, Revision 1
RWP 10001802 and Associated ALARA Plan, Repair of the 2B33-F060A Valve, Revision 0
RWP 10002367 and Associated ALARA Plan, Unit 2 Drywell Maintenance Activities for L2R09, Revision 0

LIST OF DOCUMENTS REVIEWED

ALARA Planning and Controls (continued)

RWP 10002142 and Associated ALARA Plan, Unit 2 Turbine Building High Risk Maintenance, Revision 0
L2R09 Hydrolazing and Flushing Summary Information, Undated
2003 - 2005 Business Plan Radiation Exposure Reduction initiatives, Revision 2
RP-AA-441, Evaluation & Selection Process for Radiological Respirator Use, Revision 2
RP-AA-441, Attachment 1, TEDE ALARA Evaluations for L2R09, RWPs 10002142, 10001802, 10001685, 10001694, 10001801, 10001704, 10001671, 10002372
RP-AA-270, Prenatal Radiation Exposure, Revision 2
Work in Progress Reports for RWPs 10002372, 10001671, 10001673, 10001685
CR 141137, L2R09 Facial Contaminations, dated January 25, 2003
CR 140781, Nuclear Oversight Identifies Poor Rad Practices at LPHB Egress, January 23, 2003
CR 141299, Near Miss Compliance with ALARA Pre-job Brief, January 26, 2003
CR 141625, Facial Contamination During Condenser Work, January 28, 2003
CR 138718, Inadequate ALARA/Contingency Planning for 2G33-F042, January 7, 2003
L2R09 Daily Exposure Tracking Information and Trend Charts, January 27 - 30, 2003
RWP 10002367, Revision 0, Unit 2 Drywell Minor Maintenance Activities For L2R09 and Associated Work Plan
Apparent Cause Evaluation and Associated Worker Dose Assessment, 2E12-F325/6B Contamination Events, February 7, 2003