UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

January 15, 2003

Harold B. Ray, Executive Vice President
San Onofre, Units 2 and 3
Southern California Edison Co.
P.O. Box 128, Mail Stop D-3-F
San Clemente, California 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 50-361/02-06 AND 50-362/02-06

Dear Mr. Ray:

On December 28, 2002, the NRC completed an inspection at your San Onofre Nuclear Generating Station, Units 2 and 3, facility. The enclosed report documents the inspection findings which were discussed on October 7, November 8 and 22, and December 13, 2002, with Mr. Dwight Nunn and other members of your staff.

This 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. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has identified two issues that were evaluated under the Significance Determination Process as having very low safety significance (Green). The NRC has also determined that violations are associated with these issues. Consistent with Section VI.A of the Enforcement Policy, these violations are being treated as noncited violations (NCVs) because they have been entered into your corrective action program. The NCVs are described in the subject inspection report. If you contest the violation or significance of the NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the San Onofre Nuclear Generating Station, Units 2 and 3, facility.

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

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Claude E. Johnson, Chief
Project Branch C
Division of Reactor Projects

Dockets: 50-361
50-362
Licenses: NPF-10
NPF-15

Enclosure:
NRC Inspection Report
50-361/02-06; 50-362/02-06

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets:	50-361 50-362
Licenses:	NPF-10 NPF-15
Report:	50-361/02-06 50-362/02-06
Licensee:	Southern California Edison Co.
Facility:	San Onofre Nuclear Generating Station, Units 2 and 3
Location:	5000 S. Pacific Coast Hwy. San Clemente, California
Dates:	September 22 through December 28, 2002
Inspectors:	C. C. Osterholtz, Senior Resident Inspector M. A. Sitek, Resident Inspector P. J. Elkmann, Emergency Preparedness Inspector T. W. Jackson, Resident Inspector R. E. Lantz, Senior Emergency Preparedness Inspector L. Mellen, Senior Operator Licensing Examiner J. B. Nicholas, PhD., Senior Health Physicist J. L. Taylor, Reactor Engineer G. Warnick, Resident Inspector W. C. Walker, Senior Project Engineer
Approved By:	Claude E. Johnson, Chief, Project Branch C Division of Reactor Projects

SUMMARY OF FINDINGS

San Onofre Nuclear Generating Station, Units 2 and 3
NRC Inspection Report 50-361/02-06; 50-362/02-06

IR 05000361/2002-006, 05000362/2002-006; Southern California Edison; 09/22-12/28/2002; San Onofre Nuclear Generating Station, Units 2 and 3; Integrated Resident & Regional Report; Exercise Evaluation, Postmaintenance Testing

The inspection was conducted by resident and regional inspectors. The inspection identified two Green findings, both of which are noncited violations. The significance of the issues is indicated by their color and was determined by the Significance Determination Process in NRC Inspection Manual Chapter 0609. 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. NRC-Identified Findings

Cornerstone: Barrier Integrity

- Green. The inspectors identified a noncited violation after the licensee implemented inadequate corrective actions in response to a Part 21 notification for Asea Brown Boveri K-line circuit breakers. The licensee was unaware that Containment Cooling Fan 3ME402 Circuit Breaker 3B0611 was within scope of the Part 21 notification until after two surveillance test failures occurred. This was a violation of 10 CFR Part 50, Appendix B, Criterion XVI.

  The issue was considered more than minor because it resulted in Containment Cooling Fan 3ME402 exceeding its allowed Technical Specification outage time of 7 days. However, the finding was considered to have very low safety significance because of a low probability for failure (three failures out of approximately 10,000 breakers in service industry-wide), and both containment cooling trains remained capable of performing their safety function (Section 1R19.1).

Cornerstone: Emergency Preparedness

- Green. A noncited violation of 10 CFR Part 50, Appendix E IV.B, was identified for inadequate procedures for implementation of an emergency action level. Emergency Action Level C.3.1(c) requires that a site area emergency be declared if radiation readings outside of containment at specific locations exceed established levels. These locations are not monitored by installed devices and licensee procedures do not require these readings to be taken.

  The finding was determined to be a performance deficiency in that the licensee failed to identify that, during certain plant conditions, the emergency response procedures would not evaluate Emergency Action Level C.3.1(c.) The finding was evaluated using the Emergency Preparedness Significance Determination Process to be more than minor because failure to evaluate a potential site area emergency could result in delayed

facility and public evacuations. The finding was evaluated as having very low safety significance, since it was a failure of a regulatory requirement but not a failure to meet an emergency planning standard (Section 1EP1).

B. Licensee-Identified Findings

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

Report Details

Summary of Plant Status:

Both units were at approximately 100 percent power at the beginning of this inspection period. On October 16, 2002, Unit 3 power was reduced to approximately 65 percent following a trip of main feedwater Pump 3K006 during feedwater pump lube oil testing. The feedwater pump was recovered and Unit 3 returned to essentially full power operation on October 17, 2002. Unit 3 power was again reduced to approximately 40 percent for axial shaping purposes following a drop of Control Element Assembly 25 on December 22, 2002. Control Element Assembly 25 was recovered and Unit 3 returned to approximately 100 percent power on December 24, 2002. On November 2, 2002, Unit 2 automatically tripped on low steam generator water level in Steam Generator 2G0089 when feedwater regulating Valve FRV1111 inadvertently closed due to a failed master controller circuit card. The circuit card was replaced and Unit 2 reactor startup commenced on November 4, 2002. On the afternoon of November 4, 2002, with Unit 2 at approximately 18 percent power, the reactor was manually tripped after pressurizer spray Valve 2PV0100A failed 47 percent open. Unit 2 reactor coolant Pumps 2P001 and 2P004 were secured and pressurizer spray Valve 2PV0100A was isolated. On November 6, 2002, Unit 2 was started up and reached approximately 100 percent power on November 7, 2002. Both units remained at full power throughout the rest of this inspection period.

1. REACTOR SAFETY

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

1R04 Equipment Alignments (71111.04)

a. Inspection Scope

The inspectors performed four partial walkdowns of the following four trains of equipment during maintenance outages of their redundant trains or during instances of unexpected performance:

- Auxiliary feedwater System 2MP504 flow path alignment during maintenance on auxiliary feedwater Valve 2HV4763 on November 7, 2002 (Unit 2)
- High pressure governor Valve 2UV2200C breaker alignment following an unexpected loss of power on November 8, 2002 (Unit 2)
- Saltwater cooling system during maintenance and testing of saltwater cooling Pump 2MP113 on November 13, 2002 (Unit 2)
- Control room emergency air cleanup system Train B during maintenance on Train A on December 5, 2002 (Units 2 and 3)

The inspectors physically verified critical portions of the trains to identify any discrepancies between the existing and proper alignment as determined by system piping and instrumentation drawing and plant procedures.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Routine Fire Inspection Tours - Units 2 and 3

a. Inspection Scope

The inspectors performed routine fire inspection tours, and reviewed relevant records, for the following six plant areas important to reactor safety:

- Unit 2 saltwater cooling pump room
- Unit 3 saltwater cooling pump room
- Unit 2 turbine building 7' level
- Unit 3 turbine building 7' level
- Unit 2 Train A Class 1E switchgear room
- Unit 2 Train B Class 1E switchgear room

The inspectors observed the material condition of plant fire protection equipment, the control of transient combustibles, and the operational status of barriers. The inspectors compared in-plant observations with the commitments in the relevant portions of the Updated Fire Hazards Analysis Report.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

The inspectors reviewed licensed operator requalification testing activities, including the licensed operators' performance and evaluators' critique. The inspectors compared performance in the simulator on October 31, 2002, with performance in the control room during this inspection period.

The inspectors placed an emphasis on high-risk licensed operator actions, operator activities associated with the emergency plan, and previous lessons-learned items. These items were evaluated to ensure that operator performance was consistent with protection of the reactor core during postulated accidents.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed the implementation of the requirements of the Maintenance Rule (10 CFR 50.65) to verify that the licensee had conducted appropriate evaluations of equipment functional failures, maintenance preventable functional failures, unplanned capacity loss factor, and system unavailability. The inspectors reviewed root causes and corrective action determinations for equipment failures and reviewed performance goals for ensuring corrective action effectiveness. The inspectors discussed the evaluations with the reliability engineering supervisor and the system engineers. The following system was reviewed:

- 4000 Vac electrical

b. Findings

No findings of significance were identified.

.2 Routine Maintenance Effectiveness

a. Inspection Scope

The inspectors independently verified that the licensee appropriately handled safety significant component performance associated with potential deterioration of motor-operated valve line starter switches. The inspectors reviewed Action Request (AR) 030801672 and discussed the maintenance plan for inspection and replacement of motor-operated valve line starter switches with Engineering and Maintenance personnel.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors verified the accuracy and completeness of assessment documents and that the licensee's program was being appropriately implemented. The inspectors also ensured that plant personnel were aware of the appropriate licensee-established risk category, according to the risk assessment results and licensee program procedures.

The inspectors also reviewed selected emergent work items to ensure that overall plant risk was being properly managed and that appropriate corrective actions were being properly implemented.

The inspectors reviewed the effectiveness of risk assessment and risk management for the following three activities:

- Repair for Unit 3 spent fuel pool primary makeup water line performed on October 22, 2002 (AR 020800129)
- Internal hydraulic leak for Unit 3 Feedwater Isolation Valve 3HV4052 due to degraded performance of a hydraulic dump valve solenoid on October 24, 2002 (AR 021001266)
- Unit 2 pressurizer spray Valve 2PV0110A failure to close on November 4, 2002 (AR 021100192)

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

a. Inspection Scope

The inspectors observed operator response to three nonroutine events during the inspection period. In addition to direct observation of operator performance, the inspectors reviewed procedural requirements, operator logs, and plant computer data to determine that the response was appropriate with that required by procedures and training. The following three operator responses were reviewed:

- Unit 3 Main Feedwater Pump K-006 automatic trip during feedwater pump lube oil surveillance testing on October 16, 2002
- Unit 2 automatic reactor trip due to failed steam generator level master controller card on November 2, 2002
- Unit 2 manual reactor trip initiated in response to primary depressurization caused by failed Pressurizer Spray Valve 2PV0100A on November 4, 2002

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

.1 Containment Cooling Fan 3ME402 Postmaintenance Testing

a. Inspection Scope

The inspectors reviewed the circumstances associated with a missed Part 21 notification scoping opportunity for a containment cooling fan circuit breaker.

b. Findings

Introduction

The inspectors determined that the licensee implemented inadequate corrective actions in response to a Part 21 notification for Asea-Brown Boveri (ABB) K-line circuit breakers. The licensee was unaware that Containment Cooling Fan 3ME402 Circuit Breaker 3B0611 was within scope of the Part 21 notification until after two surveillance test failures occurred. This finding is being documented as a noncited violation with a very low safety significance (Green).

Description

On June 29, 2002, Containment Cooling Fan 3ME402 Circuit Breaker 3B0611 failed to close during surveillance testing. Troubleshooting was performed on the breaker, and the cause was determined to be a pinched secondary contact wire. The wire was replaced, and postmaintenance testing was performed on the breaker. The breaker was successfully cycled three times and declared operable. The postmaintenance testing did not include a review for potential Part 21 applicability.

Circuit Breaker 3B0611 passed surveillance tests in July and August 2002, but failed to close during surveillance testing performed on September 9, 2002. During review of the September 9, 2002, surveillance test failure, the licensee discovered that Circuit Breaker 3B0611 was susceptible to a deficiency that had been previously identified in a Part 21 notification. The licensee determined that the surveillance failures that occurred in June and September 2002 were caused by the Part 21 deficiency. The deficiency was also determined to have rendered Circuit Breaker 3B0611 inoperable since the last successful surveillance test performed on August 24, 2002. This caused Containment Cooling Fan 3ME402 to be inoperable for 16 days, exceeding its allowed Technical Specification outage time of 7 days.

On May 6, 2002, ABB issued a notification of potential defect to the NRC in accordance with 10 CFR Part 21 on the potential for K-line circuit breakers to fail to charge and close. The Part 21 notification indicated that a defective operating mechanism in the breaker was the problem and that replacing the operating mechanism with a new model would correct the deficiency. The Part 21 notification also stated that “ABB recognizes that this failure mode may exist in any K-line circuit breaker manufactured or having undergone mechanism repair, refurbishment, or replacement between January 1, 1988, and December 31, 1998, and therefore recommends that utilities address this issue at the next available maintenance interval.” The licensee received the Part 21 notification on May 17, 2002.

On May 17, 2002, the licensee entered the Part 21 notification in their corrective action program as AR 020500942. The licensee initially determined in June 2002 that 13 safety-related circuit breakers were within scope of the Part 21. The licensee made this determination based on a review of purchase orders for ABB circuit breaker operating mechanisms submitted between January 1988 and December 1998. However, the licensee did not consider that complete circuit breakers procured with

operating mechanisms installed were susceptible to the Part 21 deficiency. This oversight prevented the licensee from scoping 15 additional safety-related breakers that could have been susceptible to the failure mode described in the Part 21 notification. Containment Cooling Fan 3ME402 Circuit Breaker 3B0611 was one of the missed safety-related breakers.

The licensee verified that none of the other susceptible safety-related breakers had experienced a demand failure and scheduled all susceptible breaker operating mechanisms for replacement. All but two susceptible safety-related breakers that were required to shut to perform their safety function had their operating mechanisms replaced by the end of the inspection period. Circuit breakers for Unit 2 Pressurizer Heater Bank 2B0402 and Unit 3 Charging Pump 3B0405 were scheduled to be worked during the first quarter of 2003.

Analysis

The inspectors evaluated the significance of the finding using the Significance Determination Process. The inspectors determined that the issue had a credible impact on the Barrier Integrity cornerstone because the finding represented an actual reduction of the atmospheric pressure control function of reactor containment. The issue was considered more than minor because it resulted in Containment Cooling Fan 3ME402 exceeding its allowed Technical Specification outage time of 7 days. However, the finding was considered to have very low safety significance because of a low probability for failure (three failures out of approximately 10,000 breakers in service industry-wide), and both containment cooling trains remained capable of performing their safety function.

Enforcement

The regulations in 10 CFR Part 50, Appendix B, Criterion XVI, state, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to this criterion, the licensee did not ensure that a safety-related breaker which contained an operability deficiency was properly scoped during a postmaintenance testing opportunity. This violation of 10 CFR Part 50 is being treated as a noncited violation (NCV 361; 362/2002006-01) consistent with Section VI.A of the Enforcement Policy. This violation is in the licensee's corrective action program as AR 020500942.

.2 Routine Postmaintenance Testing Review

a. Inspection Scope

The inspectors observed and/or reviewed postmaintenance testing for the following six activities to verify that the test procedures and activities adequately demonstrated system operability:

- Unit 2 component cooling water Pump 2MP026 postmaintenance test per Procedure SO23-3-3.60.3, “Surveillance Operating Instruction,” Revision 3, performed on September 18, 2002, following routine scheduled maintenance

- Unit 3 shutdown cooling heat exchanger bypass flow Control Valve 3HV0396 linestarter postmaintenance test inspection per Procedure SO123-I-9.13, “480 VAC Linestarter Inspection, Coil, and Power Contact Replacement,” Revision 3, performed on October 8, 2002, following scheduled maintenance under Maintenance Orders (MOs) 02091830000 and 02071709001

- Unit 3 reactor coolant drain tank sample containment isolation Valve 3HV0516 line starter inspection per Procedure SO123-I-9.13, “480 VAC Linestarter Inspection, Coil, and Power Contact Replacement,” Revision 3, performed on October 9, 2002, following scheduled maintenance under MO 02091730000

- Unit 3 QSPDS 91-day Channel A check for cold leg wide-range temperature per Procedure SO23-3-3.35, “PAMI/SAFE Shutdown Monthly Checks,” performed on October 10, 2002, under MO 02030584

- Unit 2 Control Element Assembly 77 postmaintenance check per MO 02071506000, performed on November 3, 2002, following troubleshooting activities

- Unit 2 Feedwater Regulating Valve 1111 postmaintenance check per MO 02110064000, performed on November 3, 2002, following replacement of a steam generator level master controller card

The inspectors determined that the effect of testing on the plant had been adequately addressed, that the tests were adequate for the scope of the maintenance work performed, and that the acceptance criteria were clear and consistent with design and licensing basis documents.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed and/or reviewed performance and documentation for the following five surveillance tests to verify that the structures, systems, and components were capable of performing their intended safety functions and to assess their operational readiness:

- Units 2 and 3 saltwater cooling pumps’ quarterly surveillance tests on bearing water check valves per Procedure SO23-3-3.60.4, “Saltwater Cooling Pump and Valve Testing,” Revision 4, performed on October 7, 2002

- Unit 3 containment personnel hatch interlock surveillance test per Procedures SO23-3-2.34, “Containment Access Control, Inspections, and Airlocks Operation,” Revision 15, and SO 23-3-3.51.1, “Containment Penetration Leak Rate Testing, Containment Airlock, Purge and ILRT Penetrations,” Revision 8, performed on October 9, 2002

- Unit 2 high pressure safety injection Pump 2P019 “HFA Stud Wiggle Test” performed on feeder Breaker 2A0608 per MO 02020392000, performed on October 15, 2002

- Unit 3 main feedwater Pump 3K005 monthly surveillance test per Procedure SO23-2-1.1, “Main Feedwater Pump/Turbine Protective Trip Tests,” Revision 6, performed on October 16, 2002

- Unit 3 reactor coolant pump gasket leakage surveillance per Procedure SO23-V-8.6, “Reactor Coolant Pump Gasket Leakage Monitoring,” Revision 4, performed on November 18, 2002

b. Findings

No findings of significance were identified.

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors reviewed the objectives and the scenario for the 2002 biennial Emergency Plan exercise to determine if the exercise would acceptably test major elements of the Emergency Plan. This exercise had been postponed from 2001 because of the events of September 11, 2001. The scenario simulated a reactor vessel flange coolant leak, loss of vital electrical buses, a fire in the main transformer, and failure of the reactor to automatically trip, which resulted in significant fuel damage. The scenario continued with a large loss of reactor coolant and loss of containment integrity, which allowed a radiological release to the environment.

The inspectors evaluated exercise performance by focusing on the risk-significant activities of classification, notification, protective action recommendations, and offsite dose consequences in the simulator control room and in the following dedicated emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility

The inspectors also assessed personnel recognition of abnormal plant conditions, the transfer of emergency responsibilities between facilities, communications, protection of emergency workers, emergency repair capabilities, and the overall implementation of the Emergency Plan.

The inspectors attended the November 6, 2002, post-exercise critiques in each of the above facilities to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended the November 8, 2002, presentation of the exercise evaluation results to plant management.

b. Findings

Introduction

A noncited violation of very low safety significance (Green) was identified for inadequate procedures for implementation of an emergency action level (EAL).

Description

EAL C.3.1(c) requires that a site area emergency (SAE) be declared if radiation readings outside of containment at specific locations exceed an established level above background readings. These locations are not monitored by installed devices and would require that a technician be directed to take measurements locally with portable radiation detection equipment. Licensee procedures require these readings to be taken only if the Hi Range In-Containment monitor is declared inoperable. Therefore, for all other radiological emergency plant conditions where the Hi Range In-Containment monitor is operable, conditions for an SAE could exist and not be adequately evaluated by the operators. For example, given a large release into containment with uneven mixing or other unknown conditions, localized dose rates could cause the external containment radiation levels at specific locations to exceed EAL C.3.1(c) and not exceed the Hi Range In-Containment monitor threshold for an SAE.

Analysis

The finding was determined to be a performance deficiency associated with emergency response procedure quality in that the licensee failed to identify that, during certain plant conditions, the emergency response procedures would not adequately direct operators to evaluate EAL C.3.1(c.) The finding was evaluated to be more than minor using the Emergency Preparedness Significance Determination Process. The finding affects the Emergency Preparedness cornerstone objective in that failure to evaluate a potential SAE could result in delayed facility and public evacuations. The finding was evaluated as having very low safety significance (Green) since it was a failure of a regulatory requirement, but not a failure to meet an emergency planning standard.

Enforcement

Failure to provide adequate procedures to ensure that conditions that could require the declaration of an SAE are recognized and evaluated is a violation of 10 CFR Part 50, Appendix E IV.B, which requires that the licensee's emergency plan describe "the means to be used for determining . . . the impact of the release of radioactive materials . . . including emergency action levels . . . . " This violation is being treated as a noncited violation (NCV 361; 362/2002006-02) in accordance with Section VI.A of the NRC Enforcement Policy and is in the licensee's corrective action process as AR 021100376.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors performed an in-office review of the following changes to the San Onofre Emergency Plan and implementing procedures, against previous document versions and 10 CFR 50.54(q), to determine if the revision decreased the effectiveness of the Emergency Plan.

- Emergency Plan Sections 3, 4, 5, 6, and 8, Revision 12
- Emergency Plan Section 4, Revision 13
- Procedure SO123-VIII-1, “Recognition and Classification of Emergencies,” Revision 17

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the following emergency preparedness drill to evaluate the drill conduct and the adequacy of the licensee’s performance critique. The inspectors observed the site-wide drill from the Technical Support Center on the following date:

- September 25, 2002

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety, Public Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

The inspectors reviewed and assessed the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and locked high radiation areas. The inspectors interviewed radiation workers and Radiation Protection personnel involved in high dose rate and high exposure jobs during normal operations. The inspectors also conducted plant

walkdowns within the radiologically controlled area and conducted independent radiation surveys of selected work areas. The following items were reviewed and compared with regulatory requirements:

- Area postings and other access controls for airborne radioactivity areas, radiation areas, locked high radiation areas, and very high radiation areas
- Access controls, radiation exposure permits, and radiological surveys involving airborne radioactivity areas and high radiation areas (REP-200101, REP-200117, REP-200123, REP-200128, REP-200129, REP-200134, REP-200159, REP-200163, REP-200173, and REP-200191)
- Formal prejob briefings presented prior to opening the Unit 2 containment personnel hatch outer door and prior to performing high radiation work in the Unit 3 spent fuel pool
- High radiation area key controls
- Controls involved with the storage of highly radioactive items in the spent fuel pool
- A summary of access controls and high radiation area work practice related ARs written since August 2001 and selected specific examples: (010801449, 010900750, 010900931, 011000987, 011001184, 011001703, 011100073, 011100103, 011200069, 020200458, 020300217, 020300960, 020400340, 020400406, 020501227, 020501300, 020600335, 020600452, 020601312, 020601602, and 020602055)
- Nuclear Oversight Audit Report SCES-009-01, “Health Physics/Radiation Protection,” Nuclear Oversight Surveillance Report SOS-036-02, “High Radiation Area Controls,” and Radiation Protection Department Quarterly Self-Assessments for the third quarter 2001 through the third quarter 2002 involving high radiation area controls

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors verified the accuracy of data reported by the licensee for the following performance indicators to ensure that the performance indicator color was correct for both Units 2 and 3:

- BI-01 Reactor Coolant System Specific Activity

The inspectors reviewed the performance indicator data for the last four quarters. The inspectors reviewed NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," and operator operating logs. The inspectors discussed the status of the performance indicators and compilation of data with Engineering personnel.

b. Findings

No findings of significance were identified.

.2 Drill and Exercise Performance

a. Inspection Scope

The inspectors reviewed the following documents related to the drill and exercise performance indicator in order to verify the licensee's reported data:

- Drill schedules for calendar year 2002
- Drill and exercise scenarios for a 100 percent sample of drills conducted during the second and third quarters of calendar year 2002
- Evaluator and participant logs and offsite notification forms for a 100 percent sample of drills conducted during the second and third quarters of calendar year 2002
- Drill evaluation worksheets
- Performance indicator reports

b. Findings

No findings of significance were identified.

.3 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspectors reviewed the following records related to emergency response organization participation in order to verify the licensee's reported data:

- List of key emergency response organization positions
- Drill participation date summaries for key emergency responders for the second and third quarters of calendar year 2002
- Emergency response organization rosters for the second and third quarters of calendar year 2002
- Drill participation records for a sample of eight emergency responders
- Performance indicator reports

b. Findings

No findings of significance were identified.

.4 Alert and Notification System

a. Inspection Scope

The inspectors reviewed a 100 percent sample of siren testing records for the second and third quarters of calendar year 2002 to verify the accuracy of data reported for this performance indicator.

b. Findings

No findings of significance were identified.

.5 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors reviewed corrective action program records involving locked high radiation areas (as defined in Technical Specification 5.8.2), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned exposure occurrences (as defined in NEI 99-02) for the past 12 months to confirm that these occurrences were properly recorded as performance indicators. Radiologically controlled area entries with exposures greater than 100 millirems within the past 12 months were reviewed, and selected examples were examined to determine whether or not they were within the dose projections of the governing radiation exposure permits. Whole body counts or dose estimates were reviewed if radiation workers received committed effective dose

equivalents of more than 100 millirems. Where applicable, the inspectors reviewed the summation of unintended deep dose equivalent and committed effective dose equivalent to verify that the total effective dose equivalent did not surpass the performance indicator threshold without being reported.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed radiological effluent release program corrective action records, licensee event reports (LERs), and annual effluent release reports documented during the past four quarters to determine if any doses resulting from effluent releases exceeded the performance indicator thresholds (as defined in NEI 99-02).

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

.1 (Closed) LER 361; 362/2002-005-00: missed Technical Specification surveillance requirement for saltwater cooling system check valves

The missed Technical Specification surveillance requirement was determined to be a minor violation. This issue was dispositioned in NRC Inspection Report 50-361; 362/2002-011. This LER is closed.

.2 (Closed) LER 361; 362/2002-002-00: breaker failure to close renders containment emergency fan inoperable for longer than allowed by Technical Specifications

This issue was dispositioned in Section 1R19.1 of this report. This LER is closed.

.3 (Closed) LER 362/2002-003-00: main feedwater pump turbine trip results in manual actuation of auxiliary feedwater system

The inspectors reviewed this LER and determined that it was of minor significance. The inspectors concluded that the licensee's root cause determination and proposed corrective actions were appropriate. This LER is closed.

4OA5 Other

.1 Institute of Nuclear Power Operations Evaluation

The inspectors reviewed the report issued by the Institute of Nuclear Power Operations dated October 3, 2002, for the bienniel assessment performed from August 11-23, 2002. The inspectors noted that the evaluation was consistent with performance observed by the NRC staff.

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. D. Nunn and other members of licensee management at exit meetings on October 7, November 8 and 22, and December 13, 2002. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether or not any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

The following finding of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a noncited violation:

Technical Specification 5.8.1 requires high radiation areas, as defined in 10 CFR 20.1003, be barricaded and conspicuously posted. However, on May 22 and June 6, 2002, the licensee identified examples of high radiation areas that were not barricaded and conspicuously posted, as described in ARs 020501300 and 020600452, respectively. The apparent cause of each example was different; therefore, the corrective action for the first example may not have reasonably been expected to prevent the second example. Because neither example involved an overexposure or possessed a substantial potential for overexposure, this violation is not of more than very low safety significance and is being treated as a noncited violation.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Allen, Supervisor, Reliability Engineering
C. Anderson, Manager, Site Emergency Preparedness
J. Austin, Planner, Health Physics
D. Brieg, Manager, Maintenance Engineering
G. Cook, Supervisor, Compliance
B. Corbett, Supervisor, Health Physics
B. Culverhouse, Program Analyst, Offsite Emergency Preparedness
M. Farmer, Supervisor, Health Physics
J. Fee, Manager, Maintenance
G. Ferrigno, Planner, Health Physics
K. Fowler, Site Emergency Planner
S. Giannell, Site Emergency Planner
J. Gregerson, Site Emergency Planner
M. Goettel, Manager, Business Planning and Financial Services
P. Handley, Supervisor, Offsite Emergency Planning
J. Hirsch, Manager, Chemistry
M. Hug, Supervisor, Site Emergency Planning
J. Madigan, Manager, Health Physics
A. Martinez, Supervisor, Health Physics
M. McBrearty, Engineer, Nuclear Oversight and Regulatory Affairs
D. Nunn, Vice President, Engineering and Technical Services
R. Richter, Supervisor, Fire Protection Engineering
A. Scherer, Manager, Nuclear Oversight and Regulatory Affairs
J. Scott, Emergency Planning Coordinator
M. Short, Manager, Systems Engineering
T. Vogt, Manager, Operations
R. Waldo, Station Manager, Nuclear Generation
J. Winslow, Supervisor, Systems Engineering

ITEMS OPENED AND CLOSED

Opened

None

Opened and Closed During this Inspection

361; 362/2002006-01	NCV	Containment cooling fan postmaintenance testing (Section 1R19.1)
361; 362/2002006-02	NCV	Inadequate procedures for implementation of EAL 3.C.1(c) (Section 1EP1)

Previous Items Closed

361; 362/2002-005-00	LER	Missed Technical Specification surveillance requirement for SWC system check valves (Section 4OA3)
361; 362/2002-002-00	LER	Breaker failure to close renders containment emergency fan inoperable for longer than allowed by Technical Specification (Section 4OA3)
362/2002-003-00	LER	Main feedwater pump turbine trip results in manual actuation of auxiliary feedwater system (Section 4OA3)

Previous Items Discussed

None

LIST OF ACRONYMS USED

ABB	Asea-Brown Boveri
AR	action request
CFR	Code of Federal Regulations
EAL	emergency action level
LER	licensee event report
MO	maintenance order
MSPI	mitigating system performance indicator
NCV	noncited violation
NRC	Nuclear Regulatory Commission
SAE	site area emergency

PARTIAL LIST OF DOCUMENTS REVIEWED

SONGS Emergency Plan, Revision 13

Procedure SO123-VIII-1	“Recognition and Classification of Emergencies,” Revision 17

Procedure SO123-VIII-10	“Emergency Coordinator Duties,” Revision 14
Procedure SO123-VIII-10.3	“Protective Action Recommendations,” Revision 6
Procedure SO123-VIII-40	“TSC Health Physics Leader Duties,” Revision 17
Procedure SO123-VIII-40.1	“OSC Health Physics Coordinator Duties,” Revision 21
Procedure SO123-VIII-40.100	“Dose Assessment,” Revision 9
Procedure SO123-VII-20.9.5	“Alternate Pre-Planned Methods for Radiation Monitors,” Revision 3, Temporary Change Notice 3-4