



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064**

July 11, 2002

Harold B. Ray, Executive Vice President
Southern California Edison Co.
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, California 92674-0128

SUBJECT: NRC INTEGRATED INSPECTION REPORT 50-361/02-02; 50-362/02-02

Dear Mr. Ray:

On June 22, 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 April 12 and June 21, 2002, with Mr. J. Wambold 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 one issue that was evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that a violation is associated with this issue. The violation is being treated as a noncited violation (NCV), consistent with Section VI.A of the Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation or significance of the NCV, 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.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories and, although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional

security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your responses to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat. From these audits, the NRC has concluded that your security program is adequate at this time.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response 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
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Dockets: 50-361
50-362
Licenses: NPF-10
NPF-15

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

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets: 50-361
50-362

Licenses: NPF-10
NPF-15

Report No.: 50-361/02-02
50-362/02-02

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: March 24 through June 22, 2002

Inspectors: C. C. Osterholtz, Senior Resident Inspector
M. A. Sitek, Resident Inspector
R. V. Azua, Project Engineer
I. Barnes, Consultant, Engineering and Maintenance Branch
T. Jackson, Resident Inspector
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W. Sifre, Reactor Engineer
J. Taylor, Reactor Engineer

Approved By: C. E. Johnson, Chief, Project Branch C

SUMMARY OF FINDINGS

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

IR05000361-02-02, IR05000362-02-02: 03/24-06/22/2002; Southern California Edison; San Onofre Nuclear Generating Station, Units 2 & 3; Integrated Resident and Regional Report; Emergent Work.

The inspection was conducted by resident and regional reactor inspectors, with one consultant. This inspection identified one Green finding, which was a noncited violation. The significance of the issue is indicated by its color and was determined by the Significance Determination Process in Inspection Manual Chapter 0609.

Cornerstone: Initiating Events

- Green. The inspectors identified a noncited violation for a lapse in procedural compliance that resulted in a leak path for water from the reactor refueling cavity across a steam generator nozzle dam to the cold leg side of Steam Generator 2E088. This was a violation of 10 CFR Part 50, Appendix B, Criterion V.

This issue was more than minor because it resulted in an inadvertent leak from the reactor coolant system of approximately 1500 gallons. The finding was considered to have very low safety significance because the leak rate was very small (approximately 0.3 gallons per minute), and the leak was quickly isolated once it was identified. This violation is in the licensee's corrective action program as Action Request 020601156.

Report Details

Summary of Plant Status:

Both units began the inspection period at 100 percent power. On April 27, 2002, Unit 3 power was reduced to approximately 72 percent to replace Circulating Pump Motor 3MP115 and to replace Iso-phase Bus Cooling Fan 3A-002. Unit 3 power was returned to 100 percent on April 29, 2002, and remained at 100 percent throughout the rest of this inspection period. Unit 2 was shut down for a scheduled refueling outage on May 20, 2002, and entered Mode 6 refueling operations on May 24, 2002. Refueling operations were completed and Unit 2 entered Mode 5 on June 20, 2002. Unit 2 remained in Mode 5 at the end of this inspection period.

1. **REACTOR SAFETY**

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

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors reviewed the design features and procedures for protecting Units 2 and 3 mitigating systems from the adverse effects of high winds and temperatures. The inspection consisted of reading applicable procedures, vendor material, and design basis documents, including Procedure S023-13-8, "Severe Weather," Revision 2. The inspectors also interviewed licensee personnel and directly observed systems and plant conditions.

The inspectors reviewed the actions the licensee has taken to minimize the occurrence and impact of brush fires that are likely to occur during high temperatures and/or high winds. Several aspects which the inspectors examined included: (1) brush growth and clearance, (2) fire department equipment and training, (3) fire department coordination with offsite firefighting organizations, and (4) past history of brush fire impact on the facility. The inspectors also reviewed Procedure S0123-XIII-4.10.7, "Fire Department Offsite Response Procedure," Revision 2. In addition, the inspectors walked down areas around Units 2 and 3 to determine the potential hazard associated with wind-generated missiles.

The inspectors also reviewed the following cooling systems to ensure that their safety functions were adequately protected against high temperatures:

- Core protection calculator cooling
- Engineered safety features switchgear room cooling
- Emergency diesel generator (EDG) cooling

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

a. Inspection Scope

The inspectors performed complete walkdowns of the following trains of equipment during outages, operation, or testing of their redundant trains and or unit counterparts. 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:

- EDG trains (Unit 2)
- Shutdown cooling system trains (Unit 3)

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 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 plant areas important to reactor safety:

- Unit 2 secondary switchgear room
- Unit 3 secondary switchgear room
- Unit 3 3G002 EDG room
- Unit 3 3G003 EDG room
- Unit 3 Train B class 1E switchgear room
- Unit 2 containment

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 portions of the Updated Fire Hazards Analysis Report.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Observation

a. Inspection Scope

On May 13, 2002, the inspectors observed an annual fire drill conducted by the licensee in the radiologically controlled area. The inspectors reviewed Procedure SO123-XIII-21,

“Fire Department Drills,” Revision 7, and discussed the details of the drill with Fire Protection personnel. The inspectors also attended the postdrill critique.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors observed performance of a boroscope inspection and the ultrasound testing of the Unit 2 Train B shutdown cooling Heat Exchanger S21206ME003, conducted under Action Request (AR) 0103000419. Preliminary inspection results were reviewed. In addition, a review of all safety-related heat exchanger ARs generated between June 1, 2001, and June 1, 2002, was conducted.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

This inspection included the 10-year inspection of the Unit 2 steam generator vessel welds. This activity was performed using magnetic particle and ultrasonic examinations. The station inservice inspection program was committed to the 1989 edition of the ASME Code, Section XI, with no addenda. However, the licensee had committed to the 1995 ASME Code, 1996 addenda, for the performance demonstration initiative required by 10 CFR 50.55a. The licensee also had committed to Revision 5 of the Electric Power Research Institute Guidelines, for the examinations conducted under their steam generator management program.

.1 Performance of Nondestructive Examination Activities

a. Inspection Scope

The inspectors observed the licensee’s nondestructive examination qualified personnel during the performance of examinations for the current outage. The following nondestructive examinations were observed:

System	Component/Weld Identification	Examination Method
Steam Nozzle to Steam Generator 2 Head Weld	02-043-007-W	Ultrasonic
Steam Nozzle Inner Radius	02-043-007-R	Ultrasonic

Steam Generator 2 Top of Head to Upper Shell Weld	02-043-005	Ultrasonic
Pressurizer Nozzle to Elbow	02-025-018	Magnetic Particle, Ultrasonic
Reactor Coolant Hot Loop	02-016-005	Magnetic Particle, Ultrasonic
Reactor Coolant Hot Loop	02-016-006	Magnetic Particle, Ultrasonic
Reactor Coolant Hot Loop	02-016-007	Magnetic Particle, Ultrasonic
Pipe to Elbow on Reactor Coolant Cold Loop 1A	02-023-110	Magnetic Particle, Ultrasonic
Elbow to Pipe on Reactor Coolant Cold Loop 1A	02-023-120	Magnetic Particle, Ultrasonic
Pipe to Elbow on Reactor Coolant Cold Loop 1A	02-023-130	Magnetic Particle, Ultrasonic
Elbow to Pipe on Reactor Coolant Cold Loop 1A	02-023-140	Magnetic Particle, Ultrasonic
Pipe to Elbow on Reactor Coolant Cold Loop 1A	02-023-170	Magnetic Particle, Ultrasonic
Elbow to Pipe on Reactor Coolant Cold Loop 1A	02-023-180	Magnetic Particle, Ultrasonic
Elbow to Pipe on Spray Loop 1A	02-023-340	Magnetic Particle, Ultrasonic
Tee to Pipe on Spray Loop 1A	02-023-360	Magnetic Particle, Ultrasonic
Pipe to Elbow on Steam Generator 1 Blowdown	02-048-041	Magnetic Particle, Ultrasonic
Elbow to Elbow on Steam Generator 1 Blowdown	02-048-042	Magnetic Particle, Ultrasonic
Elbow to Pipe on Steam Generator 1 Blowdown	02-048-043	Magnetic Particle, Ultrasonic
Pipe to Elbow on Steam Generator 1 Blowdown	02-048-044	Magnetic Particle, Ultrasonic

During observation of the examinations, the inspectors determined that the examinations were conducted in accordance with approved procedures, properly calibrated equipment was used, expended consumables met shelf-life requirements, and the results were correctly documented in the draft examination report. Following the examinations, the inspectors reviewed a sample of "Certificates of Qualification" to verify that the examiners conducting the examinations were certified in the appropriate technique to the appropriate level. Finally, the inspectors reviewed the final (record) examination reports to determine if indications were dispositioned in accordance with ASME code requirements and properly documented. The licensee did not have any repairable indications.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

The inspectors reviewed licensed operator requalification training activities, including the licensed operators' performance and the evaluators' critique. The inspectors compared performance in the simulator on May 16, 2002, with performance observed in the control room during this inspection period.

The inspectors placed an inspection 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 Rule Implementation (71111.12)

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, the 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 systems were reviewed:

- Saltwater cooling (Unit 2)
- Saltwater cooling (Unit 3)

- Radiation monitoring (Unit 3)
- Emergency lighting (Units 2 and 3)
- Control room lighting (Units 2 and 3)

b. Findings

No findings of significance were identified.

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

.1 Quarterly Review

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 activity:

- emergent work associated with excessive packing leakage of approximately 1 gpm on Unit 3 Charging Pump 3P191 on May 14, 2002 (AR 020500779)

b. Findings

No findings of significance were identified.

.2 Reactor Refueling Cavity Leakage to Steam Generator 2E088

a. Inspection Scope

The inspectors reviewed emergent work associated with a mispositioned valve that resulted in an inadvertent leak path for water from the reactor refueling cavity to Steam Generator 2E088.

b. Findings

On June 16, 2002, a radiation protection technician working in Unit 2 containment noticed water dripping from the manway for Steam Generator 2E088. At the time, the reactor cavity was flooded with steam generator nozzle dams installed, and core reload was in progress. The technician reported the leak to the control room. Control room

operators appropriately entered Abnormal Operating Instruction SO23-13-20, "Fuel Handling Accidents/Loss of Cavity or SFP Level Control," and suspended core alterations.

A sample of the leak was obtained and analyzed and was determined to be reactor refueling cavity water. Operations personnel determined that a possible leak path existed if a steam generator differential pressure detector bypass valve was open. The steam generator differential pressure detectors were originally installed to provide a reactor coolant system flow signal to the reactor protection system during power operations. During refueling operations, however, it could provide a flow path around a steam generator's nozzle dam. Control room operators also noticed that the indication for Differential Pressure Detector 2PDT 0979-2, Steam Generator 2E088 differential pressure channel 2, was reading differently than the other three channels.

A refueling senior reactor operator (SRO) was dispatched to the Unit 2 containment to investigate the status of the equalizing valve for 2PDT 0979-2. The SRO discovered that the bypass valve was partially open. The SRO fully shut the bypass valve by turning it approximately 4.5 turns and the leakage stopped. All other steam generator differential pressure detectors were checked and no discrepancies were noted. The licensee determined that the bypass valve being partially open caused a leak rate of approximately 0.3 gallons per minute. The licensee further determined that approximately 1500 gallons of reactor refueling cavity water was inadvertently transferred before the cold leg bowl of Steam Generator 2E088 was filled and began leaking out of the steam generator manway.

Differential Pressure Detector 2PDT 0979-2 had been replaced during the refueling outage as part of routine preventive maintenance. On June 17, 2002, the inspectors reviewed Maintenance Order 01050511001 associated with the replacement and discovered that the bypass valve for 2PDT 0979-2 was signed off as shut on June 13, 2002. The maintenance order was still open, and the second verification for the bypass valve had yet to be performed.

The inspectors reviewed Procedure SO23-II-1, "Filling and Venting Transmitters and Sensing Lines and Verification of Sensing Line Valve Position," Revision 9. Section 6.0, "Instructions," step 6.2.3.2 states:

For Differential-Pressure Transmitters: Ensure the bypass valve is closed.

Additionally, Section 6.2.5 states:

After verification of the required As-Left conditions, including vents closed, caps installed tight, valves in correct position, sign the applicable space in the Attachment 4, 5, or 6.

The inspectors noted that Attachment 4 to Procedure SO23-II-1, "Commencement of RCS Fill and Vent Verification Data Record," only had the "performed by" space signed off for the bypass valve being shut, with no second verification performed.

The inspectors determined that the replacement of Differential Pressure Detector 2PDT 0979-2 was not performed in accordance with the procedural requirements of Procedure SO23-II-1 in that the bypass valve was not ensured closed per step 6.2.3.2, and Attachment 4 was inappropriately only partially filled out prior to verification of as-left conditions as required by step 6.2.5.

The inspectors evaluated the significance of the issue using the Significance Determination Process. The inspectors determined that the issue had a credible impact on safety because the leak path resulted in the loss of approximately 1500 gallons of water from the reactor coolant system across a steam generator nozzle dam over a 3-day period (Group 1 question answered yes). This also directly contributed to the likelihood of a loss of coolant initiating event (Group 2 question answered yes). However, the finding was considered to have very low safety significance because the leak rate was very small, and the leak was quickly isolated once it was identified.

10 CFR Part 50, Appendix B, Criterion V, requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, the licensee did not perform maintenance on steam generator Differential Pressure Detector 2PDT 0979-2 in accordance with procedural requirements. This violation of 10 CFR Part 50 is being treated as a noncited violation (NCV 361; 362/2002002-01) consistent with Section VI.A of the Enforcement Policy. This violation is in the licensee's corrective action program as AR 020601156.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed selected operability evaluations to evaluate technical adequacy and to verify that operability was justified. The inspectors considered the impact on compensatory measures for the condition being evaluated and referenced the Updated Final Safety Analysis Report and Technical Specifications. The inspectors also discussed the evaluations with cognizant licensee personnel.

The inspectors reviewed the operability evaluations and cause assessments documented in the following ARs to ensure the operability was properly justified:

- AR 011101169: pressurizer indicator failed to 1900 psia with actual pressure at 2250 psia (Unit 2)
- AR 020400776: EDG 2G002 average exhaust temperature low (Unit 2)
- AR 020401733: emergency chilled water Train A discharge line leak (Units 2 and 3)
- AR 020500800: reactor trip breaker operating springs configured in the wrong direction in relation to spring coiling (Units 2 and 3)

- AR 020400146: log power level hi bypass permissive annunciator did not clear following surveillance (Unit 2)
- AR 020400444: flow through Pump 2P025 Room 007 emergency air conditioning unit is less than calculated minimum design flow (Unit 2)
- AR 020400461: flow through Pump 3P026 Room 006 emergency air conditioning unit is less than calculated minimum design flow (Unit 3)
- AR 020600923: manual correction factors for Advanced Measurement Analysis Group (Unit 3)

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- Train B control room emergency chiller as-found and as-left data after system flow balancing per Procedure SO23-SPE-62, "Emergency Chilled Water System Train B Flow Verification," Revision 0, performed on April 9, 2002
- Train A control room emergency chiller as-found and as-left data after system flow balancing per Procedure SO23-SPE-63, "Emergency Chilled Water System Train A Flow Verification," Revision 0, performed on April 28, 2002
- Unit 2 EDG 2G003 postmaintenance test per Procedure SO23-3-3.23.1, "Diesel Generator Refueling Interval Tests," Revision 18, performed on April 30, 2002, following scheduled maintenance activities

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.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors periodically observed and reviewed shutdown activities during the scheduled Unit 2 refueling outage. The observations and reviews included the Unit 2 shutdown, drain to midloop, refueling operations, and shutdown maintenance. The inspectors verified that the activities were performed in accordance with approved procedures and Technical Specification requirements.

The inspectors periodically evaluated plant conditions to verify that safety systems were properly aligned and that maintenance activities were controlled in accordance with the outage risk control plan. The inspectors also verified that reactor coolant system inventory was properly controlled and that containment closure requirements were met. The inspectors also performed an independent inspection of containment prior to entry into Mode 4.

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 surveillance tests to verify that the structures, systems, and components were capable of performing their intended safety functions and to assess their operational readiness:

- Emergency feedwater actuation system testing per Procedure SO23-II-1.1.5, "Plant Protection System Logic Matrix Functional Test," Revision 5, performed on April 1, 2002
- Component cooling water Train A surge tank level indication 2-year calibration per Procedure SO123-II-9.21, "Barton Differential Pressure Indication Calibration Procedure," Revision 1, performed on May 14, 2002
- Postaccident monitoring instrumentation monthly channel checks per Procedure SO23-3-3.35, "PAMI/Safe Shutdown Monthly Checks," Revision 16, performed on June 17, 2002

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the following temporary plant modifications to verify that the safety functions of safety systems were not affected:

- Temporary Facility Modification 2-01-CEA-001, "Install Gagging Device and Blind Flange 2PSV2569 to Stop Hydrogen Leak," Revision 0
- Temporary Facility Modification 2-02-MBA-001, "Provide Temporary Cooling to Channel A Main Generator Exciter Thyristor Stack," Revision 0

b. Findings

No findings of significance were identified.

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

The inspector interviewed two licensee emergency preparedness staff members and reviewed the following licensee documents to determine the adequacy of testing methods for the alert and notification system in accordance with 10 CFR Part 50, Appendix E. The licensee's siren testing program was compared with guidance in NUREG-0654 and Federal Emergency Management Agency REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants." The inspector also observed postmaintenance testing on one siren.

- SO123-XVIII-10, "Siren-Community Alert Siren System - System Description and Operational Guide," Revision 3
- SO123-XVIII-10.1, "Siren-Community Alert Siren System - Biweekly Silent Test," Revision 4
- SO123-XVIII-10.3, "Siren-Community Alert Siren System - Quarterly Growl Test," Revision 4
- SO123-XVIII-10.5, "Siren-Community Alert Siren System - Annual Activation Test Procedure," Revision 3

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspector interviewed two licensee emergency preparedness staff members and reviewed the following documents related to the emergency response organization augmentation system to determine the licensee's ability to staff emergency response facilities in accordance with the licensee emergency plan and the requirements of 10 CFR Part 50, Appendix E:

- SO123-VIII-0.200, "Emergency Plan Drills and Exercises," Revision 6
- SO123-VIII-0.201, "Emergency Plan Equipment Surveillance Program," Revision 11
- SO123-VIII-0.202, "Assignment of Emergency Response Personnel," Revision 7
- SO123-VIII-0.301, "Emergency Telecommunication Testing," Revision 10
- SO123-XXI-1.11.3, "Emergency Plan Training Program Description," Revision 12
- Quarterly ERO Pager Test Reports: March, June, September, and December 2001 and January, March, and April 2002

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspector reviewed Revision 11 to the San Onofre Emergency Plan, submitted February 21, 2002, and Revision 16 to Procedure SO123-VIII-1, "Recognition and Classification of Emergencies," submitted November 9, 2001, against 10 CFR 50.54(q) to determine if the revision decreased the effectiveness of the plan.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspector reviewed the following documents related to the licensee's corrective action program to determine the licensee's ability to identify and correct problems in accordance with the requirements of 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E.

- SO123-CA-1, "Corrective Action Program," Revision 3
- SO123-XV-50, "Corrective Action Process," Revision 3
- SO123-SA-1, "Self-Assessment Program," Revision 1
- SO123-XII-18.1, "Scheduling of Audits," Revision 6
- SO123-XII-18.4, "Audit Planning and Performance and Documentation," Revision 6
- Details of 17 selected Action Requests
- Emergency Planning Directed Assessments, Year 2000 and 2002 (draft)
- Site Emergency Planning Division Self Assessment, 4th Quarter 2001
- 2001 Offsite Community Alert Siren System Directed Assessment
- NORAD Station Performance Reports; 1st, 2nd, and 4th Quarters 2001
- NORAD Surveillance Report SOS-044-01, "Emergency Preparedness Community Alert Notification System and Off-site Agency Interface," September 10, 2001 (period July 24, 2001 - August 24, 2002)
- NORAD Emergency Preparedness Program Audit Report SCES-016-01, December 19, 2001 (period November 30, 1999 - November 20, 2001)
- Apparent Cause Evaluation 011200172-01, "SONGS Emergency Recall System Unmet Expectations"
- Summaries of corrective actions assigned to the emergency preparedness department between April 2001 and April 2002

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151)

.1 Initiating Events, Mitigating System, and Barriers

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:

- IE1 Unplanned Scrams
- IE3 Unplanned Power Changes per 7000 Critical Hours
- BI2 RCS Leakage Performance Data
- MS5 Safety System Functional Failures

The inspectors reviewed the performance indicator data for all four quarters of 2001. The inspectors reviewed NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee 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 inspector reviewed the following documents related to the drill and exercise performance indicator in order to verify that the licensee's data was reported in accordance with the requirements of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 1 and 2.

- Drill schedules for calendar years 2001 and 2002
- Drill evaluation records and worksheets
- Performance indicator summary sheets
- Performance indicator reports
- Drill records for 100 percent of the drills and exercises counted in drill and exercise performance statistics for the third and fourth quarters of calendar year 2001 and the first quarter of calendar year 2002

b. Findings

No findings of significance were identified.

.3 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspector reviewed the following records related to emergency response organization participation in order to verify the licensee's data was reported in accordance with the requirements of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 1 and 2.

- List of key emergency response organization positions
- Performance indicator summary sheets
- Performance indicator reports
- Emergency response organization rosters for the third and fourth quarters of calendar year 2001 and the first quarter of calendar year 2002
- Drill participation records for a sample of eight emergency response organization members

b. Findings

No findings of significance were identified.

.4 Alert and Notification System

a. Inspection Scope

The inspector reviewed siren testing records for the third and fourth quarters of calendar year 2001 and the first quarter of calendar year 2002 to verify the licensee's data was reported in accordance with the requirements of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 1 and 2.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

a. Inspection Scope

The inspectors evaluated the use of the corrective action system regarding followup of Part 21 notifications. The following Part 21 notifications and their associated corrective action documents were reviewed:

- “Solid State Controls Report, Potential Problem with Fan Assembly,” dated May 21, 2002, evaluated under AR 020501164
- “K-Line Mechanism Failures to Charge and Close,” dated May 6, 2002, evaluated under AR 020500942

The inspectors verified that the Part 21 evaluation and implementation of corrective actions were acceptable.

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

- .1 (Closed) Licensee Event Report (LER) 362/2001-002-00: movement of irradiated fuel with one train of postaccident clean up inoperable

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.

- .2 (Closed) LER 361; 362/2002-002-00: component cooling water backup nitrogen valves not included in surveillances

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.

4OA5 Other

- .1 Temporary Instruction 2515/145: Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles

a. Inspection Scope

The inspectors observed and reviewed licensee activities in response to NRC Bulletin 2001-01, “Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles,” issued on August 3, 2001, in response to identified circumferential cracking in control element drive mechanism nozzles at other facilities.

The licensee performed a 100 percent visual inspection of the Unit 2 reactor vessel head. Additionally, ultrasonic and nondestructive eddy current testing was performed on all 91 control element drive mechanism penetrations, all 10 in-core instrumentation penetrations, and the head vent penetration. Also, 46 selected penetrations received additional nondestructive eddy current testing. Eight penetrations were selected where the results of the initial ultrasonic and eddy current tests were not totally conclusive, and an additional 38 penetrations were selected for informational purposes.

The inspectors reviewed the testing methodology and reviewed the overall results with licensee and contract personnel, which indicated no detectable defects on any of the Unit 2 reactor vessel head penetrations. The inspectors independently reviewed samples of the initial ultrasonic and eddy current test results and also independently reviewed the additional eddy current tests performed on the eight penetrations where the initial results were not totally conclusive. Additionally, the inspectors performed an independent visual inspection of the reactor vessel head.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. J. Wambold, Mr. D. Nunn, Mr. R. Waldo, and other members of licensee management at exit meetings on April 12, June 5, and June 21, 2002. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

C. Anderson, Manager, Site Emergency Preparedness
D. Brieg, Manager, Maintenance Engineering
R. Clark, Manager, Quality Engineering, Nuclear Oversight and Regulatory Affairs
G. Cook, Supervisor, Nuclear Oversight and Regulatory Affairs
T. Cooper, Supervisor, Health Physics
J. Fee, Manager, Maintenance
P. Handley, Supervisor, Offsite Emergency Planning
J. Hirsch, Manager, Chemistry
M. Hug, Supervisor, Site Emergency Planning
M. McBrearty, Engineer, Nuclear Oversight and Regulatory Affairs
J. Madigan, Manager, Health Physics
D. Nunn, Vice President, Engineering and Technical Services
J. Rainsberry, Manager, Nuclear Oversight and Regulatory Affairs
A. Scherer, Manager, Nuclear Oversight and Regulatory Affairs
M. Short, Manager, Systems Engineering
S. Stinson, Manager, Nuclear Training Dept/ Emergency Preparedness
T. Vogt, Manager, Operations
R. Waldo, Plant Manager, Nuclear Generation
J. Wallace, Manager, Security
J. Wambold, Vice President, Nuclear Generation

ITEMS OPENED, CLOSED

Opened and Closed During this Inspection

361; 362/2002-002-01	NCV	Inadvertent reactor cavity leakage to Steam Generator 2E088 (Section 1R13.2)
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Closed

362/2001-002-00	LER	Movement of irradiated fuel with one train of postaccident cleanup inoperable (Section 4OA3.1)
361; 362/2002-002-00	LER	Component cooling water backup nitrogen valves not included in surveillances (Section 4OA3.2)

LIST OF ACRONYMS USED

AR	action request
CFR	Code of Federal Regulations
EDG	emergency diesel generator
LER	licensee event report
NCV	noncited violation
NRC	Nuclear Regulatory Commission
SRO	senior reactor operator

PARTIAL LIST OF DOCUMENTS REVIEWED

- Procedure S023-V-12.2.2, "Core Protection Calculator (CPC) Channel Calibration and Functional Test (24 Month Frequency)," Revision 14
- Procedure S023-V-12.2.1, "Surveillance Requirement - Core Protection Calculators (CPCs) Functional Test (30 Day Staggered)," Revision 28
- Repetitive Maintenance Order 10438022000
- Repetitive Maintenance Order 10368101000
- Procedure S023-15-60.A1, "Train A SWGR Room or D1/D3 INV/Batt Room Temp HI/LO," Revision 5
- ARs 020301374, 020300828, 001200208, 010401106, 011201821, and 020301466
- P&ID 40111A, "Reactor Coolant System - System No. 1201," Revision 38
- P&ID 40112D, "Safety Injection System - System No. 1204," Revision 20
- P&ID 40112B, "Safety Injection System - System No. 1204," Revision 30
- P&ID 40114B, "Containment Spray System - System No. 1206," Revision 17
- P&ID 40113B, "Safety Injection System - System No. 1204," Revision 14
- Operating Instruction SO23-3-2.6, "Shutdown Cooling System Operation," Revision 18
- Integrated Operating Instruction SO23-5-1.8.1, "Shutdown Nuclear Safety," Revision 10

- Operating Instruction SO23-3-1.8, "Draining the Reactor Coolant System," Revision 1
- Maintenance Policy Guide MPG-SO23-WC-4.2, "Typical Higher Risk Evolution Package for Drain to Reduced Inventory Condition," Revision 0
- "Data Analysis Reference Manual, Volume I, San Onofre Nuclear Generating Station (SONGS) Units 2 & 3," Revision 12
- "Data Analysis Reference Manual, Volume II (Sleeving), San Onofre Nuclear Generating Station (SONGS) Units 2 & 3," Revision 12
- Licensee June 27, 1995, and November 29, 1995, response letters to Generic Letter 95-03, "Circumferential Cracking of Steam Generator Tubes"
- Licensee March 6, 1998, response letter to Generic Letter 97-05, "Steam Generator Tube Inspection Techniques"
- Licensee March 30, 1998, response letter to Generic Letter 97-06, "Degradation of Steam Generator Internals"
- ABB Combustion Engineering Report CEN-630-P, Revision 02, "Repair of 3/4 inch O.D. Steam Generator Tubes Using Leak Tight Sleeves"
- Westinghouse Field Service Traveler No. SONGS-SLV-001, Revision 02, "Installation of I-690 TIG Welded Transition Zone Sleeves In the Steam Generator Tube Sheet Region"
- Licensee letter to the NRC dated July 22, 1999, "Special Report: Steam Generator Secondary Side Inspection, San Onofre Nuclear Generating Station, Units 2 and 3"
- Document "Steam Generator Tube Integrity Operational Assessment, San Onofre Nuclear Generating station, Unit 2 Cycle 11," approved January 31, 2002
- Westinghouse Quality Release GSB-SO02-1, Revision 0, "17 1/2" I-690 Transition Zone Welded Steam Generator Sleeves"
- ABB Guideline SONGS-400-010, Revision 01, "Steam Generator Sleeve Eddy Current Analysis Guideline for Southern California Edison Company San Onofre Nuclear Generating Station"
- "Examination Technique Specification Sheet (ETSS) Sleeve Dual Plus Point," Acquisition 11, Revision 2
- "Examination Technique Specification Sheet (ETSS) Dual Coil Plus Point For Sleeve Exams," Analysis 11, Revision 1

- “Examination Technique Specification Sheet (ETSS) High-Freq & Mid-Range Plus-Point U-bend,” Acquisition 15, Revision 2
- “Examination Technique Specification Sheet (ETSS) High-Freq & Mid-Range Plus-Point U-bend,” Analysis 15, Revision 1
- Framatome Task Deployment Letter, Revision 2
- ABB Combustion Engineering Report 99-TR-FSW-001, Revision 01, “Sleeve Data Comparison to Qualify the Use of 5' Probe Extension Shaft, Slip-Ring and 83' RPC Motor Unit As Acceptable Appendix H Acquisition Parameters”
- Framatome Document 51-5017861-00, “Eddy Current Probe Extension Equivalency”
- Westinghouse Unit 2 Steam Generator Secondary Side Services Reports dated February 5, 1999, and November 3, 2000
- ABB Combustion Engineering Report 96-OSW-003-P, Revision 00, “EPRI Steam Generator Examination Guidelines Appendix H Qualification For Eddy Current Plus-Point Examination of ABB CE Welded Sleeves”
- Procedure SO123-IN-1, “Inservice Inspection Program,” dated February 19, 2002
- Procedure SO123-XVII-1, “Inservice Inspection Program Implementation,” dated March 28, 2002
- Procedure SO123-XVII-1.1, “Inservice Inspection Program Maintenance,” dated April 2, 2002
- Procedure SO23-XVII-3.1, “Inservice Inspection of Class 1 Components and Their Supports,” dated October 10, 2001
- Procedure SO23-XVII-3.1.1, “Refueling Outage Interval Examination of the Reactor Coolant Pressure Boundary to Detect Leakage,” dated November 13, 2001
- Procedure SO23-XVII-3.2, “Inservice Inspection of Class 2 Components and Their Supports,” dated October 1, 2001
- Procedure SO23-XVII-3.3, “Inservice Inspection of Class 3 Components and Their Supports,” dated October 1, 2001
- Procedure SO123-XVII-3.4, “Location Reference Markers,” October 1, 2001
- Procedure SO23-XVII-3.4, “Inservice Inspection of Class MC Components and The Metallic Liners of Class CC Components,” dated October 1, 2001

- Procedure SO2XVII-2, "Inservice Inspection of Reactor Coolant Pump Flywheels," dated October 1, 2001
- Procedure SO23-XXVII-20.47, "Magnetic Particle Examination," dated March 19, 1997
- Procedure SO23-XXVII-20.48, "Liquid Penetrant Examination," dated January 27, 1996
- Procedure SO23-XXVII-20.49, "Visual Examination Procedure to Determine the Condition of Nuclear Parts, Components, or Surfaces (VT-1), dated July 7, 2001
- Procedure SO23-XXVII-20.51, "Visual Examination Procedures for Operability of Nuclear Components and Supports and Conditions Relating to Their Functional Adequacy," dated July 7, 2001
- Procedure SO23-XXVII-20.52, "Ultrasonic Examination of Nozzle Inner Radius Areas," dated March 21, 1997
- Procedure SO23-XXVII-20.55, "Ultrasonic Examination of Nuclear Coolant System Austenitic Piping," dated March 21, 1997
- Procedure SO23-XXVII-20.56, "Ultrasonic Flaw Sizing," dated January 5, 1995
- Procedure SO23-XXVII-20.59, "Planar Size Characterization to ASME Section XI Code Requirements," dated January 5, 1995
- Procedure SO23-XXVII-20.63, "Ultrasonic Examination of Vessel Coolant Pump Flywheels," dated March 25, 1997
- Procedure SO23-XXVII-20.66, "Ultrasonic Examination of Vessel Welds and Adjacent Base Metal," August 28, 1996
- Procedure SO23-XXVII-20.67, "Ultrasonic Examination of Reactor Coolant Pump Flywheels Without Inner Bore Keyways," dated March 25, 1997
- Procedure SO23-XXVII-30.5, "Ultrasonic Examination of Ferritic Piping Welds," dated April 24, 2000
- Procedure SO23-XXVII-30.6, "Ultrasonic Examination of Austenitic Piping Welds," dated November 4, 2001
- Procedure SO23-XXVII-30.7, "Ultrasonic Examination of Bolts and Studs," dated August 4, 2000
- Procedure SO23-XXVII-30.8, "Ultrasonic Through Wall Sizing In Piping Welds," dated April 24, 2000

- Procedure SO23-XXVII-30.10, "Ultrasonic Examination of Reactor Pressure Vessel Closure Head Welds and Adjacent Base Metal," dated April 25, 2002
- Procedure SO23-XXVII-30.11, "Manual Through Wall and Length Sizing of Ultrasonic Indications In Reactor Pressure Vessel Welds," dated November 4, 2001
- Procedure SO23-SG-1, "Steam Generator Program," Revision 2
- Procedure SO23-13-14, "Reactor Coolant Leak," Revision 6
- Procedure SO123-III-2.22.23, "Units 2/3 Steam Generator Tube Leakage Monitoring Program," Revision 15
- Procedure SO23-XXXIII-4.2, "Steam Generator Tube Inspection and Corrective Action," Revision 0,
- Procedure SO23-XXXIII-6, "Evaluation and Reporting of Foreign Object(s) Found In Steam Generators, Secondary Side," through Temporary Change Notice No. 0-1, Revision 0
- Procedure SO23-XXVI-14.18, "FME Control For Steam Generator Secondary Side Work Activities," Revision 0
- Procedure SO23-XXVII-29.85, "Field Procedure For In-Situ Tube Pressure Test Using the Triplex Pump," Revision 2
- Letter of October 17, 2000 to R.J. McWey, "SONGS Emergency Preparedness Audit Frequency Assessment"
- PAG-50123-G-1, "Directed Assessment Guidelines," Revision 3
- SO123-XV-51, "Identifying and Assessing Impact to Site Programs and Procedures," Revision 1
- FEMA July 21, 2001, memorandum to Tom Ridgeway, "Decision on Request for SONGS Offsite Community Alert Siren System Revisions"
- Apparent Cause Evaluation 010200212-30,31 for February 3, 2001 Notice of Unusual Event Emergency Declaration, and related notification forms and checklists