



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

January 23, 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 50-361/01-13; 50-362/01-13

Dear Mr. Ray:

On December 29, 2001, 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 December 21, 2001, with Mr. R. Krieger and other members of your staff.

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.

Circumstances affecting the financial viability of Southern California Edison Co. have continued to evolve during this inspection period. Actions have been initiated by the State of California and Southern California Edison Co. to address the impacts of these financial challenges. The NRC has exercised communications channels to better understand your planned and implemented actions, especially as they relate to your responsibility to safely operate the San Onofre reactors. NRC inspections, to date, have confirmed that you continue to operate these reactors safely and assure the health and safety of the public.

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/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/

Kriss M. Kennedy, Chief
Project Branch C
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Dockets: 50-361
50-362
Licenses: NPF-10
NPF-15

Enclosure:
NRC Inspection Report
50-361/01-13; 50-362/01-13

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R:_SO23\2001\SO2001-13RP-CCO.wpd

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets: 50-361
50-362

Licenses: NPF-10
NPF-15

Report: 50-361/01-13
50-362/01-13

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: November 4 through December 29, 2001

Inspectors: C. C. Osterholtz, Senior Resident Inspector
J. G. Kramer, Resident Inspector
T. O. McKernon, Senior Operations Engineer, Operations Branch
G. E. Werner, Operations Engineer, Operations Branch

Approved By: K. M. Kennedy, Chief, Project Branch C

SUMMARY OF FINDINGS

San Onofre Nuclear Generating Station, Units 2 and 3
NRC Inspection Report 50-361/01-13; 50-362/01-13

IR05000361-01-13, IR05000362-01-13: 11/04-12/29/2001; Southern California Edison;
San Onofre Nuclear Generating Station, Units 2 & 3; Integrated Resident and Regional Report.

The inspection was conducted by resident and regional inspectors. Based on the results of the inspection, no findings of significance were identified.

Report Details

Summary of Plant Status:

Unit 2 began this inspection period at approximately 98.5 percent power. On December 12, 2001, licensed operators increased power to approximately 100 percent as part of the NRC-approved power uprate and remained at approximately 100 percent power throughout the rest of this inspection period. Unit 3 began this inspection period at approximately 100 percent power. On December 17, 2001, licensed operators reduced power to approximately 95 percent following a trip of heater drain Pump 3P059 after a failure of heater drain tank normal level control Valve 3LV3146. Maintenance technicians repaired Valve 3LV3146, and operators returned the unit to approximately 100 percent power on December 19, 2001. Unit 3 operated at approximately 100 percent power throughout the rest of this inspection period.

1. **REACTOR SAFETY**

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

1R01 Adverse Weather (71111.01)

a. Inspection Scope

The inspectors performed a review of the adverse and cold weather protection features at the site. The inspectors reviewed Procedure SO23-13-8, "Severe Weather," Revision 2, and the cold weather operation portions of Procedure SO23-1-3.1, "Emergency Chilled Water System Operation," Revision 14. In addition, the inspectors discussed cold and adverse weather protection with a shift technical advisor.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete equipment walkdown of the saltwater cooling system to identify any discrepancies between existing plant conditions and the proper alignment as determined by system piping and instrumentation drawings and plant procedures. The inspectors reviewed System Description SD-SO23-410, "Saltwater Cooling System," Revision 4; Operating Instruction SO23-0-17, "Locking of Important to Safety Critical Valves and Breakers," Revision 14; and Updated Final Safety Analysis Report Chapter 9.2, "Water Systems," Revision 13.

b. Findings

No findings of significance were identified.

.2 Partial System Walkdown

a. Inspection Scope

The inspectors performed a partial system walkdown of the Unit 2 Train A emergency core cooling system to confirm its operability during an outage of Train B containment spray Pump 2P013 on December 12, 2001. The inspectors verified that a portion of the valves listed in Procedure SO23-0-17, "Locking of Important to Safety Critical Valves and Breakers," Revision 14, Attachment 1, were in the correct position. In addition, the inspectors verified that the valve positions in the control room and breaker positions locally at the 4kV bus were consistent with system drawings.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

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

- Saltwater cooling pump room (Unit 2)
- Saltwater cooling pump room (Unit 3)
- Technical Support Center

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

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed a periodic visual inspection of the plant intake structure (Units 2 and 3) to determine the operational status of seals, barriers, sumps, drains, and alarms to identify the existence of any unanalyzed flooding hazards. The inspectors reviewed Updated Final Safety Analysis Report Chapter 3.4, "Water Level (Flood) Design," Revision 13.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed performance test data for Train A Emergency Chiller ME336 and discussed the results with the maintenance engineer. In addition, the inspectors reviewed portions of Procedure SO23-1-3.1, "Emergency Chilled Water System Operation," Revision 14, and the operating data recorded in Attachment 22 of the procedure.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

.1 Quarterly Requalification Observation

a. Inspection Scope

The inspectors reviewed licensed operator requalification testing activities and observed licensed operators' performance and evaluators' critique on the simulator on November 29, 2001. The inspectors placed an emphasis on high-risk licensed operator actions, operator activities associated with the emergency plan, and previous lessons learned items. The inspectors evaluated these items to ensure that operator performance was consistent with protection of the reactor core during postulated accidents.

b. Findings

No findings of significance were identified.

.2 Licensed Operator Requalification Program Biennial Review

a. Inspection Scope

The inspectors: (1) interviewed key plant personnel regarding the policies and practices for administering examinations, initiating and incorporating feedback from in house and industry events and developing and administering remedial training and retake examinations; and (2) observed the administration of two dynamic simulator scenarios to two requalification crews by facility evaluators. The inspectors also reviewed the remediation process for the last training cycle.

In addition, the inspectors: (1) evaluated examination security measures and procedures for compliance with 10 CFR 55.49; (2) evaluated the licensee's sample plan for the written examinations for compliance with 10 CFR 55.59 and NUREG-1021, as referenced in the facility requalification program procedures; and (3) evaluated maintenance of license conditions for compliance with 10 CFR 55.53 by review of facility records, procedures, and tracking systems for licensed operator training, qualification, and watchstanding. The inspectors also reviewed remedial training and measures taken as a result of examination failures for compliance with facility procedures and responsiveness to address areas failed.

The inspectors reviewed the results of the annual and biennial requalification examinations to determine if the results reflected any findings.

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, 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. In addition, the inspectors reviewed Action Requests (ARs) 990101262, 990101425, 000400690, 010200212, 010301123, 010500617, and 010500789 and Procedure SO123-XXIV-20.2, "Maintenance Rule for Structures," Revision 2. The following systems were reviewed:

- Non-1E 4kV (Unit 3)
- Main turbine (Unit 3)
- Containment structures (Units 2 and 3)
- Intake structures (Units 2 and 3)

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the effectiveness of risk assessment and emergent work associated with an underground fire main break that occurred outside the Unit 3 turbine

building on November 20, 2001. The inspectors discussed the failure and corrective actions with engineering personnel. The inspectors also reviewed AR 011100928, fire suppression system prints, operator logs, Technical Specifications, and fire protection information System Impairment Form 01110040-1 as part of the inspection.

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.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

a. Inspection Scope

The inspectors reviewed personnel performance during the Unit 3 fire main break. The inspectors focused on operator response timeliness and the correct implementation of plant procedures and interpretation of Technical Specifications.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

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

- AR 011100491: Unit 2 Emergency Diesel Generator 2G003 with one Kiene valve (opened during cylinder diagnostic testing and during hand barring of the engine) found in the open position

The inspectors reviewed Procedure SO23-2-13, "Diesel Generator Operation," Revision 20, Attachment 13, "Handbarring Diesel Generator G003." In addition, the inspectors reviewed AR 990901214, Assignments 6 and 9, and AR 011200009, and discussed the issue with the system engineer.

- AR 011101018: Unit 2 Emergency Diesel Generator 2G002 turbo oil header pressure check valve fails during semiannual surveillance

The inspectors reviewed Procedure SO23-3-3.23, "Diesel Generator Monthly and Semi-annual Testing," Revision 20, and AR 990900066. The inspectors also discussed the issue with the system engineer.

- AR 010501833: Failure of Kevlar lifting slings

The inspectors reviewed Procedure SO123-I-7.24, "Rigging Standards, Guidelines, and Prior-to-use Inspections," Revision 6, and Procedure SO123-I-7.24, "Rigging Standards, Guidelines, and Prior-to-use Inspections," Temporary Change Notice 6-4. In addition, the inspectors reviewed the licensee's root cause evaluation. The inspectors discussed the issue with the Nuclear Systems Engineering manager.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

Upon the completion of maintenance activities associated with Auxiliary Feedwater Pump 3P140 discharge to Steam Generator E088 Discharge Valve 3HV4705 on November 9, 2001, the inspectors reviewed the postmaintenance testing to verify that the test procedures and activities adequately demonstrated operability. The inspectors reviewed Maintenance Order 01102316000, AR 010900085, and portions of Procedures SO123-I-9.30, "Motor Operated Valve Analysis and Test System," Revision 3, and SO123-I-9.5, "Electrical Inspection of Limitorque Actuators," Revision 5. In addition, the inspectors discussed the motor-operated valve test results with the motor-operated valve maintenance engineer.

Upon completion of the maintenance activities associated with the Unit 3 fire main repair on November 30, 2001, the inspectors reviewed the postmaintenance testing to verify that the test procedures and activities adequately demonstrated operability. In addition, the inspectors reviewed Maintenance Order 01111266000 and AR 011100928.

Upon the completion of maintenance activities associated with Train A Emergency Chiller ME336 during the week of December 2, 2001, the inspectors reviewed the postmaintenance testing to verify the test procedures and activities adequately demonstrated operability. The inspectors attended the retest review committee operability test meeting. The inspectors reviewed Procedures SO23-1-3.1, "Emergency Chilled Water System Operation," Revision 14; SO23-2-17, "Component Cooling Water System Operation," Revision 16; SO23-3-3.30.10, "Miscellaneous Systems Online Valve Test," Revision 7; and Work Authorization Record 2-0101950.

Upon the completion of maintenance activities associated with Unit 2 Pressurizer Heater Bank 2E129 on December 12, 2001, the inspectors reviewed the postmaintenance testing to verify the test procedures and activities adequately demonstrated operability. In addition, the inspectors reviewed Work Authorization Record 2-0102035, Maintenance Order 01091474000, and Technical Specification 3.4.9.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed documentation for the surveillance test used to verify that the control element assemblies were properly positioned on November 19, 2001 (Unit 2). The inspectors reviewed Technical Specification Surveillance Requirements 3.1.5.1 and 3.1.5.2; AR 011100828; Procedure SO23-3-3.25, "Once a Shift Surveillance (Modes 1 - 4)," Revision 21, Attachment 6, "CEA Position Verification"; and the control room operating logs.

The inspectors reviewed the surveillance test program for emergency diesel generators to ensure adequate safeguards were in place to prevent mechanical preconditioning of a diesel prior to the performance of a monthly surveillance test. The inspectors reviewed Procedure SO23-3-3.23, "Diesel Generator Monthly and Semiannual Testing," Revision 20, and operating logs. The inspectors also discussed mechanical preconditioning prevention with licensee engineering personnel.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed Temporary Facility Modification 2-01-CEA-001 associated with the installation of a gagging device and blind flange on Unit 2 main generator casing Relief Valve PSV2569. In addition, the inspectors reviewed the 10 CFR 50.59 screening documented in AR 001101770.

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151)

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:

- BI01 Reactor Coolant System Activity
- MS2 High Pressure Injection System Unavailability
- MS4 Residual Heat Removal System Unavailability

The inspectors reviewed the performance indicator data for the last quarter of 2000 and the first three 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 indicator and compilation of data with engineering personnel. The inspectors reviewed AR 011100922 associated with the MS2 and MS4 performance indicators.

b. Findings

No findings of significance were identified.

4OA5 Other

Financial Status

The NRC has exercised communications channels to better understand the licensee's planned and implemented actions, especially as they relate to safely operating the reactors. The inspectors specifically reviewed the following on a weekly basis:

- Staffing of onshift operating personnel
- Corrective maintenance backlog
- Corrective action Level 1 backlog
- Reduction in safety or risk important outage activities
- Reduction in planned risk important modifications or enhancements
- Emergency Response Facility and siren availability
- Generator voltage loading
- Impact of rolling blackouts on the grid and offsite power availability
- Employee morale

NRC inspections and inspector observations, to date, have confirmed that the licensee operated the units safely and that public health and safety was assured.

4OA6 Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. R. Krieger and other members of licensee management at exit meetings on December 6 and December 21, 2001. Licensee management 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

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C. Anderson, Manager, Site Emergency Preparedness
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M. Short, Manager, Systems Engineering
T. Vogt, Plant Superintendent, Units 2 and 3 Operations
R. Waldo, Manager, Operations

LIST OF ACRONYMS USED

AR	action request
CFR	Code of Federal Regulations
NRC	Nuclear Regulatory Commission

PARTIAL LIST OF DOCUMENTS REVIEWED

Operations Self-Assessment Report, 1st Quarter, 2001
Operations Self-Assessment Report, 2nd Quarter, 2001
Operations Self-Assessment Report, 3rd Quarter, 2001
Nuclear Training Division Quarterly Program Status Report 2001, Apr-June 30
Nuclear Training Division Quarterly Program Status Report 2001, July-Sept 30
SO123-XXI-8.4, "Licensed Operator Requalification Examinations," Revision 9
SO123-XXI-1.11.7, "Licensed Operator Requalification Training Program Description," Revision 9
Numerous Remediation Forms
Operator's Licenses, SO23-XV-70, Rev 1
Operations Curriculum Review Committee Meeting Minutes, 1st Qtr Meeting, March 20, 2001
Operations Curriculum Review Committee Meeting Minutes, 2nd Qtr Meeting, May 23, 2001
Operations Curriculum Review Committee Meeting Minutes, 3rd Qtr Meeting, October 12, 2001

Biennial Reactor Operator & Senior Reactor Operator Exam Roster Reports on all test categories

Lesson Plan 2EO704, "Steam Generator Tube Rupture," Revision 3
Lesson Plan 2EO714, "Steam Generator Tube Rupture (SGTR)," Revision 6
Lesson Plan 2RP415, "Industry Events," Revision 0
Lesson Plan 2RP420, "Technical Specifications," Revision 0
Lesson Plan 2RP424, "Industry Events (Week 4)," Revision 0
Annual Requalification Dynamic Simulator Scenario 53, 12/02/01
Annual Requalification Dynamic Simulator Scenario 55, 12/02/01
Procedure EGG-001, "Licensed Operator Examination Security Process," Revision 5
Procedure EGG-009, "Dynamic Examination Process," Revision 6
Procedure EGG-012, "Revising/Modifying Dynamic Scenarios," Revision 1
Procedure EGG-013, "Periodic Examination Process," Revision 8
Procedure ODM-46, "Supervisory Skills and Expectations," Revision 1
Procedure ODM-44, "Professional Operator Development and Evaluation Program," Revision 1
Action Request 000601485, "Excess Boric Acid Added"
Action Request 001000469, "RCS Cooldown Limits May Have Been Exceeded"
Action Request 001201394, "Loss of Chiller"
Action Request 010201358, "EDG ARV Surveillances"