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

July 18, 2001

EA-01-106

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: SAN ONOFRE NUCLEAR GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 50-361/01-09; 50-362/01-09

Dear Mr. Ray:

On June 23, 2001, the NRC completed an inspection at your San Onofre Nuclear Generating Station, Units 2 and 3. The enclosed report documents the inspection findings which were discussed with Mr. D. Nunn and other members of licensee management on June 8, 2001, and with Mr. R. Krieger and other members of licensee management on May 9 and June 22, 2001.

Based on the results of this inspection, the NRC has identified two findings that were evaluated under the Significance Determination Process as having very low safety significance (Green). Additionally, 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 response to these conditions of economic stress, there are two differences in how NRC Region IV communicates its inspection findings. First, we will continue the 6-week periodicity of our integrated inspection reports (the other reactors in Region IV transitioned to a quarterly report frequency, with the exception of Diablo Canyon). Second, the description of the scope of the individual inspection activities will be significantly more detailed. This is being done to keep the public fully informed of the breadth and depth of the NRC's inspection and oversight activities.

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/NRC/ADAMS/index.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/

David P. Loveless, Chief
Project Branch C
Division of Reactor Projects

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

Enclosure:
NRC Inspection Report
50-361/01-09; 50-362/01-09

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets:	50-361
	50-362
Licenses:	NPF-10
	NPF-15
Report No.:	50-361/01-09
	50-362/01-09
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:	May 13 through June 23, 2001
Inspectors:	C. C. Osterholtz, Senior Resident Inspector
	J. G. Kramer, Resident Inspector
	A. B. Earnest, Senior Physical Security Inspector
	J. S. Dodson, Health Physicist
	G. G. Warnick, Resident Inspector, Palo Verde Nuclear Generating Station
Approved By:	David P. Loveless, Chief, Branch C
	Division of Reactor Projects

ATTACHMENT: Supplemental Information

SUMMARY OF FINDINGS

San Onofre Nuclear Generating Station, Units 2 and 3
NRC Inspection Report 50-361/01-09; 50-362/01-09

IR05000361-01-09, IR05000362-01-09: 05/13-06/23/2001; Southern California Edison; San Onofre Nuclear Generating Station, Units 2 & 3; Integrated Resident and Regional Report; Other.

The inspection was conducted by resident and region-based inspectors. This inspection identified two Green findings. The significance of all issues is indicated by their color (Green White, Yellow, Red) using IMC 0609, "Significance Determination Process."

Cornerstone: Physical Protection

- Green. During an Operational Safeguards Response Evaluation conducted on November 28-29, 2000, a vulnerability in the licensee's protective strategy was identified that could have resulted in the simulated loss of a target set (EA-01-106). Further details (safeguards information) are available in NRC Inspection Report 50-361; 362/00-17. The issue was entered into the licensee's corrective action program as Action Request 001200130.

  The safety significance of this issue was determined to be very low by the Physical Protection Significance Determination Process because it was not repeatable nor predictable. The issue was more than minor because the potential loss of a target set represents a credible impact on safety and impacts a key performance attribute of the Physical Protection Cornerstone (Section 4AO5.1).

- Green. During an Operational Safeguards Response Evaluation conducted on November 28-29, 2000, the inspectors determined that the licensee had not developed response force timelines that could have affected the licensee's and the NRC inspection team's ability to evaluate the licensee's protective strategy (EA-01-106). Further details (safeguards information) are available in NRC Inspection Report 50-361; 362/00-17. The issue was entered into the licensee's corrective action program as Action Request 001200130.

  The safety significance of this issue was determined to be very low by the Physical Protection Significance Determination Process because there had not been more than two similar findings in the past year. The issue was more than minor because the lack of response force timelines is a vulnerability in safeguards plans that represents a credible impact on safety and impacts a key performance attribute of the Physical Protection Cornerstone (Section 4AO5.2).

Report Details

Summary of Plant Status:

Unit 2 was operating at approximately 100 percent power at the beginning of this inspection period. Power was reduced to approximately 84 percent on June 15, 2001, in response to a failure of the motor for circulating water Pump 2P117. The motor was replaced and Unit 2 returned to full power on June 17, 2001. Unit 2 remained at full power throughout the rest of this inspection period.

Unit 3 was in Mode 5 at the beginning of this inspection period, completing repairs to nonsafety-related turbine systems damaged during a February 3, 2001, event (NRC Inspection Report 50-362/01-05). Repairs were completed and a reactor startup was commenced on May 30, 2001. Unit 3 entered Mode 1 operations on May 31, 2001, and achieved 100 percent power on June 3, 2001, following a chemistry power hold at 60 percent and an 80 percent power hold for intake heat treating. Unit 3 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 a partial walkdown of the Unit 3 Train A high pressure safety injection system to confirm its operability during an outage of safety injection Pump 3P017. The inspectors verified critical portions of this train while it was aligned with safety injection Pump 3P018 to identify any discrepancies between the existing valve and electrical system alignments and to verify the proper alignment as determined by system piping and instrumentation drawings and plant procedures.

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:

- Train A control room emergency air clean up system room
- Train B control room emergency air clean up system room
- Train A fuel handling building ventilation room (Unit 3)

- Train B fuel handling building ventilation room (Unit 3)

The inspectors observed the material condition of plant fire protection equipment, the control of transient combustibles, and the operational status of barriers.

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 functional failures and maintenance preventable functional failures of equipment important to safety. In addition, the inspectors reviewed root causes and corrective action determinations for equipment failures and reviewed performance goals for ensuring corrective action effectiveness. The following systems or components were reviewed:

- Unit 3 radiation monitoring system

- Component cooling water Pump 2MP026. The inspectors reviewed Action Requests (ARs) 010300455 and 010400541, Procedure SO123-XV-5.3, "Maintenance Rule Program," Revision 2, and the control room operator logs. The inspectors discussed the Maintenance Rule implications with the cognizant site technical services supervisor and the pump performance history with a station technical supervisor.

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 risk management for the following activities:

- Requirements for performing maintenance activities during periods of limited electrical grid margins. The inspectors examined Procedure SO123-XX-5, "Work Process Procedure," Revision 8, as part of the review.

- Hot leg shutdown cooling Valve 3HV9378 maintenance in response to increased leak rate (Unit 3)

- Train A loss of voltage signal testing and inoperability of the Train A loads on the 4.16 kV vital bus. In addition, the inspectors discussed the risk assessment with the Probabilistic Risk Assessment Manager (Unit 2).

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.

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:

- Diesel-driven fire pump exceeded 200°F during surveillance upon cooling system failure (AR 010500843) (Units 2 and 3)

- Turbine-driven auxiliary feedwater pump lubricating oil analysis indicates high particulate level (AR 010501077) (Unit 3)

- Emergency Diesel Engine 2G003 lubricating oil circulating pump has louder sound emanating from it than usual (AR 010501320) (Unit 3)

- Vent to containment from reactor head/pressurizer vent isolation Valve 2HV0298 replaced without a retest (AR 010600175) (Unit 2)

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:

- Installation of new solid state trip device at pressurizer heater Breaker 3E129 (Maintenance Order (MO) 00120285000)(Unit 3). The inspectors reviewed Procedure SO23-I-2.58, "480V ABB Air Circuit Breaker Inspection and Testing," Revision 8.

- Train A component cooling water Pump 2MP024 scheduled bearing and breaker maintenance (MOs 99101108001, 00110858001, 01012025000, and 01030188000) (Unit 2). In addition, the inspectors reviewed Procedure SO123-I-9.8, "ITE 4.16KV Circuit Breaker Inspection and Repair," Revision 4.

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 was 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

During the Unit 3 forced outage, the inspectors periodically monitored operational status of the shutdown cooling system and the vital and nonvital electrical power distribution systems and verified that the systems were aligned in accordance with plant operating procedures. The inspectors confirmed that the licensee's monitoring for the potential buildup of noncondensable gases in the reactor vessel head was adequate. The inspectors toured containment to verify appropriate levels of cleanliness prior to the final containment closure.

On May 30, 2001, the inspectors observed the Unit 3 Reactor startup. The inspectors reviewed Procedure SO23-3-1.1, "Reactor Startup," Revision 22. The inspectors reviewed the estimated critical position for accuracy and monitored reactor engineering performance of the inverse count rate ratio (1/M) plot. The inspectors also reviewed precautions taken to monitor turbine vibrations during power ascension. The inspectors discussed the performance of the startup with operations supervision and reviewed ARs 010501736 and 010600842.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed and/or reviewed 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:

- Auxiliary Feedwater Pump 2MP140 inservice test (Unit 2). The inspectors observed the operator briefing, prior to the inservice test, and operator performance of the test. The inspectors also reviewed Procedure SO23-3-3.60.6, "Auxiliary Feedwater Pump and Valve Testing," Revision 7, and the inservice pump test record upon completion of the test.

- Auxiliary Feedwater Pump 2MP141 inservice test (Unit 2). The inspectors observed the operator briefing, prior to the inservice test, and operator performance of the test. The inspectors reviewed Procedure SO23-3-3.60.6, "Auxiliary Feedwater Pump and Valve Testing," Revision 7, and the inservice pump test record upon completion of the test.

- Emergency Diesel Generator 2G002 6-month surveillance (Unit 2). The inspectors observed the operator briefing, prior to the surveillance, and operator performance of the test. The inspectors reviewed Procedure SO23-3-3.23, Attachment 1, "Diesel Generator Operation," Revision 19, and the surveillance test record upon completion of the test.

- Surveillance Procedure SO23-3-3.8, "Safety Injection Monthly Tests," Revision 14. The inspectors verified that the procedure adequately provided for proper venting of air and noncondensable gases from the safety injection system prior to changing modes from shutdown conditions.

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-SBB-2 associated with the Control Element Assembly 40 sensor failure alarms, Equipment Deficiency Mode Restraint E2-00-1450, MO 01022109000, and AR 010100069 and its associated 10 CFR 50.59 evaluation. The inspectors reviewed the following sample of the plant procedures that were affected by the temporary facility modification: SO23-3-2.12, "Reactor Protective System Operation," Revision 8, Temporary Change Notice 8-2; SO23-3-2.13, "Core Protection/Control Element Assembly Calculator Operation," Revision 12; and SO23-13-13, "Misaligned or Immovable Control Element Assembly," Revision 7.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

a. Inspection Scope

The inspectors interviewed cognizant personnel and walked down the major components of the gaseous and liquid release systems to observe ongoing activities, equipment material condition, and system configuration, as compared to the description in the Updated Final Safety Analysis Report. The following items were reviewed and compared with regulatory requirements:

- 1998, 1999, and 2000 Radiological Effluent Release Reports
- Changes to the Offsite Dose Calculation Manual and the radioactive waste system design and operation
- Anomalous results, if any, reported in the Radiological Effluent Release Reports
- Effluent radiological occurrence performance indicator incidents
- Sample collection and analysis of the Unit 3 containment atmosphere for release
- Selected radioactive effluent release permits and associated projected doses to members of the public (liquid-C-98-0019, -0036, -0193, -0221, and -0276; 9L-143, -147, -239, -241, -242, and -307; 0L-114, -167, -229, -245, -446, -464, and -465; 1L-018, -033, -078, and -085) (gaseous-98-50, -51, -63, and -67; 9G-050, -069, -089, -117, and -144; 0G-009, -057, -066, -103, -110, and -119; 1G-012, -020, -026, -047, and -052)
- Compensatory sampling and radiological analyses conducted when effluent monitors were declared out-of-service
- Monthly, quarterly, and annual dose calculations
- Engineered safety feature air cleaning system surveillance test results
- Records of instrument calibrations performed since the last inspection for each point of discharge effluent radiation monitor and flow measurement device
- Effluent radiation monitor alarm setpoint values
- Calibration and quality control records of counting room instrumentation associated with effluent monitoring and release activities

- Audits (SCES-809-98 and SCES-007-00), surveillances (SOS-014-99, 015-99, 017-99, 027-99, 028-99, 029-99, 030-99, 061-99, 007-00, and 066-00) and a self-assessment dated September 3, 1998, related to the radioactive effluent treatment and monitoring program.

- Selected ARs related to the radioactive effluent treatment and monitoring program (980701530, 980701531, 980800747, 980800750, 980901251, 981000410, 981001573, 990201136, 990301928, 990500454, 990900593, 000100517, 000400846, 000601731, 000900255, 001000377, 001002318, 001101142, 001101734, and 010500268).

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA5 Other

.1 (Closed) Unresolved Item 361; 362/2000017-01: vulnerability in protective strategy

During an Operational Safeguards Response Evaluation conducted on November 28-29, 2000, a vulnerability in the licensee's protective strategy was identified that could have resulted in the simulated loss of a target set. Exercise artificialities and controller confusion prevented a definitive conclusion. Further details (safeguards information) are available in NRC Inspection Report 50-361; 362/2000-17. The issue was entered into the licensee's corrective action program as AR 001200130. The safety significance of this issue was determined to be very low by the Physical Protection Significance Determination Process because it was not repeatable or predictable. The issue was more than minor because the potential loss of a target set represents a credible impact on safety and impacts a key performance attribute of the Physical Protection Cornerstone.

.2 (Closed) Unresolved Item 361;362/2000017-02: lack of response force timelines

During an Operational Safeguards Response Evaluation conducted on November 28-29, 2000, the inspectors determined that the licensee had not developed response force timelines which could have affected the licensee's and the NRC inspection team's ability to evaluate the licensee's protective strategy. Further details (safeguards information) are available in NRC Inspection Report 50-361; 362/2000-17. The issue was entered into the licensee's corrective action program as AR 001200130. The safety significance of this finding was determined to be very low by the Physical Protection Significance Determination Process because there had not been more than two similar findings in the past year. The issue was more than minor because the lack of response force timelines is a vulnerability in safeguards plans that represents a credible impact on safety and impacts a key performance attribute of the Physical Protection Cornerstone.

.3 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 have specifically reviewed the following on a weekly basis:

- Staffing of on-shift 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. Dwight Nunn, Vice President, Engineering and Technical Services, and other members of licensee management at an exit meeting on June 8, 2001, and to Mr. R. Krieger and other members of licensee management at exit meetings on May 9 and June 22, 2001. 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.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

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B. Bostian, Supervisor, Station Engineering
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M. Short, Manager, Site Technical Support
T. Vogt, Plant Superintendent, Units 2 and 3 Operations
R. Waldo, Manager, Operations
J. Wallace, Manager, Security Division

ITEMS CLOSED

Previous Items Closed

361; 362/2000017-01	URI	vulnerability in protective strategy (Section 4OA5.1)
361; 362/2000017-02	URI	lack of response force timelines (Section 4OA5.2)

LIST OF ACRONYMS USED

AR	action request
CFR	Code of Federal Regulations
MO	maintenance order
NRC	Nuclear Regulatory Commission
URI	unresolved item