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

August 23, 2001

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 ROUTINE INTEGRATED INSPECTION REPORT 50-361/01-10; 50-362/01-10

Dear Mr. Ray:

On August 4, 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 August 7, 2001, with Mr. R. Krieger and other members of your staff.

Circumstances affecting the financial viability of Southern California Edison Co. have continued to evolve during this inspection period. The state of California and Southern California Edison Co. continue to work to address the impacts of these financial challenges. In this regard, 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, the Region continues the 6-week periodicity of its integrated inspection reports and describes the scope of the individual inspection activities in greater detail. This is being done to keep the public more 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 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,

***Ken E. Brockman for***

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
50-361/01-10; 50-362/01-10

cc w/enclosure:
Chairman, Board of Supervisors
County of San Diego
1600 Pacific Highway, Room 335
San Diego, California 92101

Alan R. Watts, Esq.
Woodruff, Spradlin & Smart
701 S. Parker St. Suite 7000
Orange, California 92868-4720

Sherwin Harris, Resource Project Manager
Public Utilities Department
City of Riverside
3900 Main Street
Riverside, California 92522

R. W. Krieger, Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, California 92674-0128

David Spath, Chief
Division of Drinking Water and
Environmental Management
P.O. Box 942732
Sacramento, California 94234-7320

Michael R. Olson
Sr. Energy Administrator
San Diego Gas & Electric Company
P.O. Box 1831
San Diego, California 92112-4150

Ed Bailey, Radiation Program Director
Radiologic Health Branch
State Department of Health Services
P.O. Box 942732 (MS 178)
Sacramento, California 94327-7320

Steve Hsu
Radiologic Health Branch
State Department of Health Services
P.O. Box 942732
Sacramento, California 94327-7320

Mayor
City of San Clemente
100 Avenida Presidio
San Clemente, California 92672

Truman Burns/Robert Kinosian
California Public Utilities Commission
505 Van Ness, Rm. 4102
San Francisco, California 94102

Robert A. Laurie, Commissioner
California Energy Commission
1516 Ninth Street (MS 31)
Sacramento, California 95814

Douglas K. Porter
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

Dwight E. Nunn, Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, California 92674-0128

Electronic distribution from ADAMS by RIV:
Regional Administrator **(EWM)**
DRP Director **(KEB)**
DRS Director **(ATH)**
Senior Resident Inspector **(CCO1)**
Branch Chief, DRP/C **(DPL)**
Senior Project Engineer, DRP/C **(WCS)**
Staff Chief, DRP/TSS **(PHH)**
RITS Coordinator **(NBH)**
Scott Morris **(SAM1)**
NRR Event Tracking System **(IPAS)**
SONGS Site Secretary **(SFN1)**
Dale Thatcher **(DFT)**

| RIV:RI:DRP/C | SRI:DRP/C | C:DRP/C | C:DRS/PSB | C:DRP/C |
|---|---|---|---|---|
| JGKramer | CCOsterholtz | DPLoveless | GMGood | DPLoveless |
| ***E - WCSifre*** | ***E - WCSifre*** | ***WCSifre for*** | ***/RA/*** | ***KEBrockman for*** |
| 8/8/01 | 8/8/01 | review 8/21/01 | 8/21/01 | signature 8/23/01 |

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

| | |
|---|---|
| Dockets: | 50-361 |
| | 50-362 |
| Licenses: | NPF-10 |
| | NPF-15 |
| Report: | 50-361/01-10 |
| | 50-362/01-10 |
| 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: | June 24 through August 4, 2001 |
| Inspectors: | C. C. Osterholtz, Senior Resident Inspector |
| | J. G. Kramer, Resident Inspector |
| | J. H. Moorman, Senior Resident Inspector<br>Palo Verde Nuclear Generating Station |
| | P. Elkmann, Emergency Preparedness Inspector |
| Approved By: | D. 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 Integrated Inspection Report 50-361; 362/01-10

IR05000361-01-10, IR05000362-01-10: 06/24-08/04/2001; Southern California Edison; San Onofre Nuclear Generating Station, Units 2 & 3; Resident Report.

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

## Report Details

Summary of Plant Status:

Both units operated at approximately 100 percent power at the beginning of this inspection period. On July 19, 2001, the core operating limit supervisory systems on both units were calibrated to approximately 98.5 percent as part of the NRC approved power uprate of 1.4 percent. Both units remained at approximately 98.5 percent 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

On July 2, 2001, the inspectors performed a partial walkdown of the Unit 2 Train B high pressure safety injection, low pressure safety injection, and containment spray systems to confirm their operability during an outage of high pressure safety injection Pumps 2MP017 and 2MP018. The inspectors used control board and local position indications to verify that portions of the Train B systems were consistent with system piping and instrumentation drawings.

On August 1, 2001, the inspectors performed a partial walkdown of the Train A emergency chilled water system to confirm operability during an outage of the Train B emergency chilled water system. The inspectors verified that major valves in the system flowpath were aligned in accordance with Procedure SO23-1-3.1, “Emergency Chilled Water System Operation,” Revision 13, Attachment 1. The inspectors also used Procedure SO23-1-3.1, Section 6.1, “Emergency Chiller Pre-Start Checks,” to verify that the Train A emergency chiller was ready for an automatic start.

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:

- Train A emergency chilled water Chiller ME336 room (Units 2 and 3)
- Train B emergency chilled water Chiller ME335 room (Units 2 and 3)
- Train A Class 1E Switchgear 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. The inspectors compared in-plant observations with the commitments in the related portions of the Updated Fire Hazards Analysis Report.

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) for reactor coolant system integrity. This review focused on recent industry experience with a potential susceptibility to control element drive mechanism (CEDM) axial cracking. The inspection included review of industry data, CEDM design specifications and fabrication materials, published literature on the CEDM cracking issue, Updated Final Safety Analysis Report updates, and interviews with station technical engineers. The inspectors also reviewed the licensee's progress in developing initiatives to reduce the likelihood of temperature-induced cracking.

The inspectors also reviewed the implementation of the requirements of the Maintenance Rule 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:

- Emergency chilled water Train B (Units 2 and 3)
- Emergency lighting (Units 2 and 3)
- Control room lighting (Units 2 and 3)
- Control room emergency air cleanup system Train B (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 risk management for the following activities:

- Emergent work, associated with the Unit 2 spent fuel handling machine hoist mechanical load brake locking up such that it would not allow lowering of the hoist

with a fuel assembly suspended from the machine, on June 14, 2001.

The inspectors reviewed Action Request (AR) 010600746, Maintenance Orders 01060893000 and 01060928000, and Procedure SO23-I-3.19, "Spent Fuel Handling Machine Operation," Revision 5. The inspectors attended the prejob briefing for the maintenance activity and discussed the activity with a refueling supervisor.

- Train B component cooling water Heat Exchanger 2ME002, swing Charging Pump 2MP191, and refueling water storage tank outlet to charging pump Suction Valve 2LV0227C outage on June 27, 2001 (Unit 2).

- Auxiliary Feedwater Pump 2P140 and the turbine steam supply throttle Valve 2HV4716 outage on July 17, 2001 (Unit 2).

The inspectors reviewed Procedure SO23-XX-10, "Maintenance Rule Risk Management Program Implementation," Revision 1.

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 the performance of Unit 3 Operations personnel following a failure of the Phase A bus potential transformer in the southeast section of the 230 kV switchyard. The nonsafety-related failure caused a small perturbation on generator output and required operators to reset a containment chiller and an isophase primary cooling fan.

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:

- The level position of the nozzle ring in pressure relief valves (AR 010600764).

  In addition to the operability assessment documented in the AR, the inspectors reviewed Procedures SO123-V-5.22.3, "Pressure Relief Valve (PSV) Program," Revision 1, and SO123-I-6.23.3, "Crosby Style JO-WR Safety Relief Valve Overhaul," Revision 3-1, and discussed the operability of the valves with the pressure relief valve component engineer (Units 2 and 3).

- Excore nuclear instrumentation and core protection calculator set to calorimetric power of 99.5 percent instead of 98.5 percent.

  The inspectors reviewed AR 010700852; Technical Specification Surveillance Requirement 3.3.1.4; Procedure SO23-3-3.2, "Excore Nuclear Instrument Calibration," Revision 10; and Procedure SO23-3-3.25, "Once a Shift Surveillance (Modes 1-4)," Revision 21. In addition, the inspectors discussed the issue with the control room supervisor (Unit 2).

Additionally, the inspectors reviewed the licensee's operability determination after identifying an 85 percent electrical ground on CEDM Fan 2ME404. The inspection included review of AR 010700904 and the licensee's contingency actions in the event of the failure of the redundant train (CEDM Fan 2ME403).

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:

- Check of the pilot lift on Auxiliary Feedwater Pump 2P140 turbine steam supply Throttle Valve 2HV4716 (Maintenance Order 01050080000) (Unit 2). In addition, the inspectors reviewed portions of Procedures SO123-I-9.5, "Electrical Inspection of Limitorque Actuators," Revision 5, and "Motor Operated Valve Analysis and Test System," Revision 3.

- Repair to main steam Drain Valve 2MU687 (Maintenance Orders 01070886000 and 01070886001) (Unit 2). In addition, the inspectors reviewed AR 010700687.

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

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed and/or reviewed 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:

- High pressure safety injection Pump 2MP017 inservice testing (Unit 2).

  The inspectors observed the operator briefing conducted prior to the testing and the operator performance of this test. The inspectors discussed the performance of the test with the Operations test group. The inspectors reviewed Procedure SO23-3-3.60.1, "High Pressure Safety Injection Pump and Valve Testing," Revision 3, Attachment 2, "High Pressure Safety Injection Pump 2(3)MP-017 and Valve Testing," and reviewed the completed surveillance package, including the inservice test record, 2P017-07-01.

- High pressure safety injection Pump 2MP017 and 2MP018 subgroup relay testing (Unit 2).

  The inspectors observed the operator briefing conducted prior to the testing and the operator performance of this test. The inspectors discussed the performance of the test with the Operations test group. The inspectors reviewed Procedure SO23-3-3.43.9, "ESF Subgroup Relay K-110A Semiannual Test," Revision 5, and the completed surveillance package.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed Temporary Facility Modification 2-00-BBA-001 associated with a bypassed input from Reactor Coolant Pump 2P003 to the reactor coolant pump intergasket leakage annunciator for Unit 2. The inspectors reviewed AR 001101113 and its associated 10 CFR 50.59 safety evaluation.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed Revision 10-1 to the San Onofre Emergency Plan, submitted June 5, 2001, and Revision 14 to Procedure SO123-VIII-1, "Recognition and Classification of Emergencies," submitted March 26, 2001, against the requirements of 10 CFR 50.54(q) to determine if the revision decreased the effectiveness of the plan.

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 Safety System Functional Failures (MS5) performance indicators to ensure that the performance indicator color was correct (Units 2 and 3).

The inspectors reviewed performance indicator data for the last three quarters of 2000 and the first quarter of 2001. The inspectors reviewed all of the licensee event reports during that period for potential safety system functional failures. In addition, the inspectors reviewed NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," Revision 2, and NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0.

The inspectors reviewed performance indicator data Reactor Coolant System leakage (BI2) for the last three quarters of 2000 and the first two quarters of 2001 (Units 2 and 3). The inspectors reviewed leak rate calculation data, Procedure SO23-3-3.37, "Reactor Coolant System Water Inventory Balance," Revision 18, and ARs 010700872 and 010800056. In addition, the inspectors discussed the methodology used to calculate the reactor coolant system leakage with an operations technical specialist.

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 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

In addition, the inspectors performed a detailed review of the instrumentation and control corrective maintenance backlog. 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

Exit Meeting Summary

The inspectors presented the resident inspection results to Mr. R. Krieger and other members of licensee management at an exit meeting on August 7, 2001. The licensee acknowledged the findings presented.

The inspectors presented the Emergency Preparedness inspection results to Mr. G. Cook, Supervisor, Nuclear Oversight and Regulatory Affairs, and other members of licensee management in a telephone conversation on July 3, 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.

## ATTACHMENT

## SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Krieger, Vice President, Nuclear Generation
R. Allen, Supervisor, Reliability Engineering
C. Anderson, Manager, Site Emergency Preparedness
D. Brieg, Manager, Station Technical
G. Cook, Supervisor, Nuclear Oversight and Regulatory Affairs
J. Fee, Manager, Maintenance
M. Goettel, Manager, Business Planning and Financial Services
J. Hirsch, Manager, Chemistry
M. Hug, Supervisor, Emergency Planning
J. Madigan, Manager, Health Physics
D. Nunn, Vice President, Engineering and Technical Services
R. Richter, Supervisor, Fire Protection Engineering
A. Scherer, Manager, Nuclear Oversight and Regulatory Affairs
J. Scott, Emergency Planning Coordinator
M. Short, Manager, Site Technical Support
T. Vogt, Plant Superintendent, Units 2 and 3 Operations
R. Waldo, Manager, Operations

NRC

O. Tabatabai, Project Manager, NRR

ITEMS OPENED, CLOSED, AND DISCUSSED

None

LIST OF ACRONYMS USED

| | |
|---|---|
| AR | action request |
| CEDM | control element design mechanism |
| CFR | Code of Federal Regulations |
| NRC | Nuclear Regulatory Commission |