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

January 23, 2003

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

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3 - NRC INSPECTION REPORT 50-361/02-11; 50-362/02-11

Dear Mr. Ray:

On December 12, 2002, 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 on December 12, 2002, with Mr. D. E. Nunn and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems, and compliance with the Commission's rules and regulations and the conditions of your operating license. Within these areas, the inspection involved selected examination of procedures and representative records, observations of activities, and interviews with personnel.

On the basis of the sample selected for review, there were no findings of significance identified during this inspection. The team concluded that problems were properly identified, evaluated, and resolved within the problem identification and resolution program.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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).

Sincerely,

/RA/

Anthony Gody, Chief
Operations Branch
Division of Reactor Safety

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

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

Gary L. Nolff
Power Projects/Contracts Manager
Riverside Public Utilities
2911 Adams Street
Riverside, California 92504

Eileen M. Teichert, Esq.
Supervising Deputy City Attorney
City of Riverside
3900 Main Street
Riverside, California 92522

Joseph J. Wambold, 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
California Department of Health Services
P.O. Box 942732
Sacramento, California 94234-7320

Michael R. Olson
San Onofre Liaison
San Diego Gas & Electric Company
P.O. Box 1831
San Diego, California 92112-4150

Ed Bailey, Radiation Control Program Director
Radiologic Health Branch
California Department of Health Services
P.O. Box 942732 (MS 178)
Sacramento, California 94234-7320

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

James D. Boyd, Commissioner
California Energy Commission
1516 Ninth Street (MS 34)
Sacramento, California 95814

Douglas K. Porter, Esq.
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

Dr. Raymond Waldo
Southern California Edison Company
San Onofre Nuclear Generating Station
P. O. Box 128
San Clemente, California 92674-0128

A. Edward Scherer
Southern California Edison
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, California 92674-0128

Electronic distribution by RIV:
Regional Administrator **(EWM)**
DRP Director **(ATH)**
DRS Director **(DDC)**
Senior Resident Inspector **(CCO1)**
Branch Chief, DRP/C **(CEJ1)**
Senior Project Engineer, DRP/C **(WCW)**
Staff Chief, DRP/TSS **(PHH)**
RITS Coordinator **(NBH)**
Scott Morris **(SAM1)**
SONGS Site Secretary **(SFN1)**

R:_SO23\2002\so211rp-pcg.wpd

SOE:OB	SOE:OB	SOE:OB	RI:PBC	C:OB	C:PBC	C:OB
PCGage/lmb	GWJohnston	GEWerner	MASitek	ATGody	CEJohnson	ATGody
/RA/	**/RA/**	**/RA/**	**/RA/**	**/RA/**	**/RA/**	**/RA/**
01/08/03	01/08/03	01/08/03	01/08/03	01/22/03	01/22/03	01/22/03

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 No.:	50-361/02-11; 50-362/02-11
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:	December 2-12, 2002
Inspectors:	P. C. Gage, Senior Operations Engineer, Operations Branch G. W. Johnston, Senior Operations Engineer, Operations Branch G. E. Werner, Senior Operations Engineer, Operations Branch M. A. Sitek, Resident Inspector, Reactor Project Branch C
Approved By:	Anthony T. Gody, Chief Operations Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000361/02-11; 05000362/02-11 San Onofre Nuclear Generating Station, Units 2 and 3; annual baseline inspection of the identification and resolution of problems.

The inspection was conducted by three senior operations engineers and one resident inspector. No findings of significance was identified.

A. NRC-Identified Finding

Identification and Resolution of Problems

The licensee was effective at identifying problems and placing them into the corrective action program. The licensee's effectiveness at problem identification was evidenced by the relatively few deficiencies identified by external organizations (including the NRC) that had not been previously identified by the licensee, during the review period. The licensee effectively used risk in prioritizing the extent to which individual problems would be evaluated and in establishing schedules for implementing corrective actions. However, one of the apparent cause evaluations reviewed was found to be deficient, in that, it lacked sufficient depth to determine the extent of condition of the finding. Corrective actions, when specified, were generally implemented in a timely manner. Licensee audits and assessments were found to be effective and highlighted a similar concern in the root cause area. On the basis of interviews conducted during this inspection, workers at the site felt free to input safety findings into the problem identification and resolution program.

B. Licensee-Identified Finding

A violation of very low safety significance, identified by the licensee, had been reviewed by the team. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and the corrective action tracking number is listed in Section 4OA7 of this report.

Report Details

4OA2 Identification and Resolution of Problems

a. Effectiveness of Problem Identification

(1) Inspection Scope

The team reviewed items selected across the seven cornerstones of safety to determine if problems were being properly identified, characterized, and entered into the corrective action program for evaluation and resolution. Specifically, the team's review included a selection of 75 action requests that had been opened or closed or that related to issues of regulatory noncompliance since July 1, 2001. The team also reviewed a total of 6 licensee audit, assessment, and surveillance reports related to the problem identification and resolution program. The effectiveness of the audits and assessments was evaluated by comparing the audit and assessment results against self-revealing and NRC-identified findings.

The team evaluated the action requests to determine the licensee's threshold for identifying problems and entering them into the corrective action program. Also, the team evaluated the licensee's efforts in establishing the scope of problems by reviewing pertinent work orders, engineering modification packages, self-assessment results, and action plans. The action requests and other documents listed in Attachment 1 were used to facilitate the review.

The team also conducted plant walkdowns and interviewed plant personnel to identify other processes by which problems and issues could be identified.

(2) Issues

The team determined that the licensee was effective at identifying problems and entering them into the corrective action program. This was evidenced by the relatively few deficiencies identified by external organizations (including the NRC) that had not been previously identified by the licensee during the review period. Licensee audits and self assessments were of sufficient breadth and depth and identified issues similar to those that were self-revealing or raised during NRC inspections. The team identified no instances where conditions adverse to quality were being handled outside the corrective action program.

The quarterly self assessment for six different divisions of the site organization were reviewed by the team to determine the extent of the licensee's internal self-assessment program. These self assessments were reviewed with regard to depth of programmatic assessment, thoroughness of measurement of corrective action implementation, and generation of corrective actions. In general the self assessments met expectations of facility management and exhibited an improvement over the previous inspection period.

The team identified no significant findings related to effectiveness of problem identification.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The team reviewed 75 action requests and supporting documentation, including analyses of the problem causes, to ascertain whether the licensee's evaluation of the problems identified considered the full extent of conditions, generic implications, common causes, and previous occurrences. In addition, the team reviewed the licensee's evaluation of selected industry experience information, including operating event reports and NRC and vendor generic notices, to assess if issues applicable to the San Onofre Nuclear Generating Station were appropriately addressed. In addition, the team also reviewed selected action requests to ascertain satisfaction of the provisions of 10 CFR Part 50, Appendix B, regarding timeliness of corrective action for those action requests applying to degraded or nonconforming structures, systems, and components. The team also interviewed engineering and technical personnel concerning the actions taken on action requests. Specific items reviewed are listed in the attachment to this report.

(2) Issues

The inspectors reviewed the licensee's root cause evaluations related to Level 1 action requests, and several others of lower significance, to determine that the analyses were conducted with regard to accepted industry practices and in accordance with facility procedures. The inspectors noted that the root cause evaluations were thorough in exploring the root causes of identified significant conditions adverse to quality. In general, the corresponding corrective actions were appropriate to address the identified root cause.

The inspectors noted in several instances where a concerted effort by the licensee was utilized in the determination of root causes for conditions adverse to quality. This root cause effort involved an extensive review of related industry experience to capture all pertinent issues with the associated facility identified conditions. These reviews included several types of root cause analysis methods and were not subjective.

The team found that the licensee effectively prioritized and evaluated issues with some exceptions. The team noted that the licensee typically investigated issues with sufficient depth and breadth to determine both the scope and extent of condition and in accordance with the issues' safety significance.

The licensee had procedures in place to prioritize issues, but on numerous occasions, the inspectors identified that licensee personnel routinely changed due dates (over 20 action requests had due dates changed) with little or no documented justification. Procedure SO123-XV-50, "Corrective Action Process," Revision 4, allows the problem owners to change due dates, even for the most significant action requests that involve root cause evaluations. No examples of improperly delayed corrective actions for safety related equipment were identified.

As part of their own self-analysis, the licensee recently identified that apparent cause evaluation quality lacked consistency. These concerns were identified in Action Requests 020100546, 020201269, 020301266, and 020301188. Starting November 2002, the licensee formed an Executive Corrective Action Review Board (Action Request 020201269, Assignment 8), which consisted of senior management, to review all apparent and root cause evaluations. This board was formed in an attempt to improve ownership and accountability of apparent cause evaluation quality. The team noted that the quality of the apparent cause evaluations were considerably more variable and less consistent than the root cause evaluations, even though similar methodology was provided in a common procedure to perform either evaluation type. The major differences included that the apparent cause evaluations were typically performed by an individual, instead of a group, and that the assigned individual's training or experience would therefore vary accordingly.

The team identified one example were the licensee failed to effectively evaluate the extent of an identified condition adverse to quality. In January 2000, Diesel Generator 2G003 failed to synchronize to the bus on three different attempts. The licensee identified that a blown fuse in the non-safety-related synchronization matcher isolation circuitry caused these failures (Action Request 000100755). During troubleshooting attempts, the licensee identified that the installed fuse was different than specified in the Nuclear Consolidated Data Base; therefore, the licensee conducted failure analysis on this fuse. The failure was caused by internal corrosion, which corroded the fuse filament in two.

Based on the corrosion and recommendations of the apparent cause evaluation, the licensee decided to remove the six remaining fuses (Action Request 000100755-05, Assignment 7) from the other three diesel generators and perform failure analysis on those fuses. This analysis was assigned the lowest priority and was due for completion by December 11, 2001. However, the fuses were not given to the failure analysis group until March 21, 2002 and at the start of this inspection, the analysis was not documented in the action request. The analysis was completed on August 7, 2002, but was not documented until December 6, 2002, after discussions with the NRC inspectors. The six fuses were tested and destructively examined and only light surface corrosion, characterized as normal, was identified on the fuse filaments.

As part of the review of the apparent cause evaluation, the team reviewed the generic issue evaluation. The team determined that the generic review failed to determine where else the fuses were used in plant equipment, especially in safety-related circuits. When asked by the team where else this fuse type was installed at the facility, the licensee identified that this type of fuse could be used in approximately 200 safety-related applications. Since the licensee had not performed such a determination prior to the team's inquiry, the extent of the safety-related applications had not been documented within the effected action request. The team determined that the failure to do an adequate generic review caused the low priority to be assigned in Assignment 7 of the action request. The team considered this issue as an example of inadequate documentation of a condition adverse to quality, and demonstrated untimely evaluation and resolution of issues. Since the fuse failure did not affect a safety-related application and since it was not a significant condition adverse to quality, and to date no additional

or repetitive failures had resulted, no violation of regulatory requirements occurred. The team noted that if affected components fail, consideration of the missed opportunity to capture problem could lead to potential regulatory issues for corrective actions.

Based on a review of the licensee's records, the team concluded that overall the licensee effectively prioritized and evaluated issues with some exceptions noted. For the more risk significant action requests, the team determined that the evaluations were of sufficient depth, the root cause determinations were accurate, and risk aspects of the conditions had been appropriately considered. For the minor risk significant action requests, the licensee's implementation of a senior management review board is expected to improve apparent cause evaluation quality.

No findings of significance were identified.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The team reviewed the action requests, audits, assessments, and trending reports described in Section 4OA2.a.(1) above to verify that corrective actions, related to the issues, were identified and implemented in a timely manner commensurate with safety, including corrective actions to address common cause or generic concerns. The team also conducted plant walkdowns and interviewed plant personnel to independently verify and assess the effectiveness of corrective actions implemented by the licensee. A listing of specific documents reviewed during the inspection is included in the attachment to this report.

(2) Issues

Based on a review of the licensee's documents and interviews with licensee personnel, the team concluded that the licensee effectively implemented corrective actions commensurate with safety.

No findings of significance were identified.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope

The team interviewed several members of the licensee's staff, which represented a cross-section of functional organizations and supervisory and non-supervisory personnel, regarding their willingness to identify safety issues. These interviews assessed whether conditions existed that would challenge the establishment of a safety-conscious work environment.

(2) Issues

The team concluded, based on information collected from these interviews, that employees were willing to identify issues and accepted the responsibility to pro-actively identify and enter safety issues into the corrective action program. This employee willingness to identify issues was reflected by the fact that over 20,000 action requests had been generated in the 15-month period covered by the inspection.

No findings of significance were identified.

4OA6 Exit Meeting

The team discussed these findings with Mr. D.E. Nunn, Vice President of Engineering and Technical Services, and other members of the licensee's staff on December 12, 2002. Licensee management provided no further comment on the findings.

Licensee management did not identify any materials examined during the inspection as proprietary.

4OA7 Licensee Identified Violation

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

The regulations in 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," require, in part, that licensees establish measures to ensure that conditions adverse to quality, such as, failures, malfunctions, and deficiencies are promptly identified and corrected. On January 15, 2002, the licensee identified a deficient quarterly surveillance test method used on check valves in the service water system. The service water system provides seal water to the Unit 2 and 3 saltwater cooling pumps. This deficiency was entered in the licensee's corrective action program as Action Request 020100712. However, the licensee failed to verify the adequacy of the surveillance test method and did not take effective corrective actions to prevent reuse of the inadequate surveillance test until October 3, 2002. The failure to promptly correct the deficiency is considered of very low significance, and is being treated as a noncited violation because the deficient surveillance did not affect saltwater cooling pump operability. The licensee was performing a root cause evaluation for the corrective action deficiency, which was tracked in Assignment 13 of Action Request 020100712.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

D. Axline, Licensing Engineer
C. Anderson, Manager, Emergency Preparedness
D. Brieg, Manager, Maintenance Engineering
G. Broussard, Supervisor, Security
M. Carr, Manager, Probability Risk Assessment
G. Cook, Supervisor, Compliance
M. Cooper, Manager, Plant Operations
W. Frick, Manager, Nuclear Safety Concerns
M. Lewis, Technical Specialist, Health Physics
C. McAndrews, Manager, Nuclear Oversight
A. Newcomber, Quality Assurance Auditor, Nuclear Oversight and Assessment
D. Nunn, Vice President, Engineering and Technical Services
J. Osborne, Engineer
R. Richter, Fire Protection Supervisor, Maintenance Engineering
A. Scherer, Manager, Nuclear Oversight and Regulatory Affairs
P. Shaffer, Supervisor, Plant Maintenance
J. Thomas, Engineer, Nuclear Oversight and Assessment
M. Tolson, Fire Protection Engineer, Maintenance Engineering
C. Williams, Supervisor, Nuclear Regulatory Affairs

NRC

A. Gody, Chief, Operations Branch
C. Osterholtz, Senior Resident Inspector

DOCUMENTS REVIEWED

The following documents were selected and reviewed by the team to accomplish the objectives and scope of the inspection and to support any findings:

Procedures:

SO123-CA-1, “Corrective Action Program,” Revision 3
SO123-I-1.3, “Work Activity Guidelines,” Revision 10
SO123-VII-8.16.3, “Radiological Control of Radioactive Tooling and Equipment,” Revision 3
SO123-VII-20.9.2, “Material Release Surveys,” Revision 4
SO23-XV-34, “ASME Section XI Repair and Replacement Program,” Revision 6
SO123-XV-50, “Corrective Action Process,” Revision 4
SO123-XV-50.39, “Cause Evaluations Standards, Methods, and Instructions,” Revision 3
SO123-XV-52, “Operability Assessments and Reportability Evaluations,” Revision 3
SO123-XX-1, “Action Request/Maintenance Order Initiation and Processing,” Revision 14
SO123-XXIV-37.30.41, “Specifications/Mini-Specifications,” Revision 2
SO23-3-3.60.4, “Saltwater Cooling Pump and Valve Testing,” Revision 4

Action Requests:

990601321	010300419	010801558	020100546	020601156
000100755	010300938	010900154	020100712	020601312
000300456	010400541	010900606	020100757	020602197
000401086	010500112	010901163	020101560	020701529
000401144	010501240	011000571	020200469	020701633
000401454	010501285	011001062	020201269	020800629
000800974	010700225	011001703	020201440	020801647
001001889	010700685	011200247	020300034	020900889
001001889	010700755	011200956	020300169	020901304
001101632	010800044	011200965	020301188	021000346
001200130	010800405	018010525	020301266	021000723
001200130	010800910	020100138	020301315	021000730
010100770	010801261	020100140	020500176	021100079
010101660	010801261	020100514	020500880	021100192
010101660	010801436	020100534	020501002	021100605

Maintenance Orders:

01050191000	02020333000	02110203000
01100460000	02050119001	02110205000
01102593000	02110202000	

Self Assessments:

Plant Status Control Directed Assessment January 2001, and 4th Quarter 2001
Health Physics Division Self Assessment Report 3rd Quarter 2002
Site Emergency Preparedness Division Report fourth Quarter 2001
Security Division Self Assessment Report 2nd Quarter 2002
Nuclear Training Division Self Assessment Report 3rd Quarter 2002
Engineering Division Self Assessment Report 2nd Quarter 2002

Licensee Event Reports

050-362/2001-002-00
050-361, 362/2001-003-00
050-361, 362/2002-001-00
050-362/2002-001-00

Miscellaneous:

NORAD Guidelines Corrective Action Followup (CAF), Revision 6
Design Basis Documentation, DBD-S023-410, Figure D-1, “Saltwater Cooling System Unit 2"
Design Basis Documentation, DBD-S023-410, Figure D-2, “Saltwater Cooling System Unit 3"