



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

May 6, 2008

Richard M. Rosenblum,
Senior Vice President and
Chief Nuclear Officer
Southern California Edison Company
San Onofre Nuclear Generating Stations
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION – NRC INTEGRATED
INSPECTION REPORT 05000361/2008002 AND 05000362/2008002

Dear Mr. Rosenblum:

On March 24, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your San Onofre Nuclear Generating Station, Units 2, and 3 facility. The enclosed integrated report documents the inspection findings, which were discussed on March 25, 2008, with you and other members of your staff.

The 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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, one self revealing finding of very low safety significance was identified. Also, one licensee-identified violation, which was determined to be of very low safety significance, is listed in Section 4OA7 of this report. If you contest the finding or the violation, 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, 612 East Lamar Blvd., Suite 400, Arlington, Texas 76011-4125; 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.

In accordance with 10 CFR 2.390 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), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael C. Hay, Chief
Project Branch D
Division of Reactor Projects

Docket Nos. 50-361
50-362

License Nos. NPF-10
NPF-15

Enclosure:

NRC Inspection Report 05000361/2008002 and 05000362/2008002
w/Attachment: Supplemental Information

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SUNSI Review Completed: MCH ADAMS: Yes No Initials: MCH
 Publicly Available Non-Publicly Available Sensitive Non-Sensitive

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ADAMS ML081270753

RIV:RI:DRP/D	SRI:DRP/D	SPE:DRP/D	C:DRS/EB2	C:DRS/PSB
STMakor	CCOsterholtz	GBMiller	LJSmith	MPShannon
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05/02/08	05/02/08	05/02/08	05/02/08	05/02/08
C:DRS/OB	C:DRS/EB1	C:DRP/D		
RELantz	RLBywater	MCHay		
/RA LRicketson for/	/RA/	/RA/		
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**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Dockets: 50-361, 50-362

Licenses: NPF-10, NPF-15

Report: 05000361/2008002 and 05000362/2008002

Licensee: Southern California Edison Co. (SCE)

Facility: San Onofre Nuclear Generating Station, Units 2, and 3

Location: 5000 S. Pacific Coast Hwy.
San Clemente, California

Dates: January 1 through March 24, 2008

Inspectors: C.C. Osterholtz, Senior Resident Inspector, Project Branch E, DRP
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Approved By: Michael C. Hay, Chief
Project Branch D
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000361/2008002, 05000362/2008002 ; 01/01/08 - 03/24/08; San Onofre Nuclear Generating Station, Units 2, and 3; Integrated Resident and Regional Report; Surveillance Testing.

This report covered a 3-month period of inspection by resident inspectors and regional inspectors. The inspection identified one finding. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management's review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a Green self-revealing finding for the failure of maintenance personnel to adequately adjust bearing oil pressure to a Unit 2 main feedwater pump. This caused the main feedwater pump to trip, which subsequently caused an unplanned power reduction. The overhaul procedure used by the machinists, SO23-I-8.165, "Feed Pump Drive Turbine Internal, Bearing, and Valve Inspection," Revision 11, only stated to "adjust pressures as required." This finding was entered into the licensee's corrective action program as AR 080101431.

The finding was more than minor because it affects the Initiating Events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using Manual Chapter 609, Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance (Green) because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The finding had a crosscutting aspect in the area of human performance associated with the work practices (H.4(a)) in that human error prevention techniques, such as proper documentation, were not implemented, and that maintenance personnel proceeded with the work activity when faced with uncertainty.

B. Licensee-Identified Violations

A violation of very low safety significance which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and its corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period in day 35 of the refueling outage. On January 18, 2008, a reactor startup was performed. On January 22, 2008, power was 95 percent and ascending, but was reduced to 65 percent on January 23, 2008. The reduction in power was necessary due to emergent maintenance activities on main feedwater Pump 2P063. On January 25, 2008, power returned to 96 percent and continued to increase. Unit 2 reached 98 percent before power was decreased to 90 percent on February 12, 2008, for emergent work on the second point feedwater heater due to a failure of the normal level control valve. After corrective maintenance, Unit 2 was returned to full power on February 13, 2008. Full power was maintained the remainder of the inspection period.

Unit 3 began the inspection period at 99 percent power. On February 04, 2008, following the failure of feed pump turbine K006 speed control, Unit 3 power was reduced to 65 percent. The licensee determined that the speed setting piston was sticking due to mechanical binding and would need to be disassembled and repaired. After successful reassembly, Unit 3 returned to full power operation on February 8, 2008. Full power was maintained the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial Walkdown

The inspectors: (1) walked down portions of the four below listed risk important systems and reviewed plant procedures and documents to verify that critical portions of the selected systems were correctly aligned; and (2) compared deficiencies identified during the walk down to the licensee's UFSAR and CAP to ensure problems were being identified and corrected.

- January 18, 2008, Unit 2, Auxiliary Feedwater Train A
- February 01, 2008, Unit 3, Emergency Diesel Generator Train A while testing was performed on Train B
- February 05, 2008, Unit 3, Salt Water Cooling Train A
- February 21, 2008, Unit 2, Component Cooling Water Train B while Train A inservice

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

Quarterly Inspection

The inspectors walked down the six below listed plant areas to assess the material condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional and that access to manual actuators was unobstructed; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers, steel fire proofing, penetration seals, and oil collection systems) were in a satisfactory material condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features and that the compensatory measures were commensurate with the significance of the deficiency; and (7) reviewed the UFSAR to determine if the licensee identified and corrected fire protection problems.

- January 16, 2008, Unit 2, containment
- January 18, 2008, Units 2 and 3, control room
- January 18, 2008, Units 2 and 3, technical support center
- January 31, 2008, Unit 3, emergency diesel Generator 3G002 room
- January 31, 2008, Unit 3, emergency diesel Generator 3G003 room
- January 31, 2008, Unit 2, auxiliary feedwater pump room

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the two below listed maintenance activities to: (1) verify the appropriate handling of structure, system, and component (SSC) performance or condition problems; (2) verify the appropriate handling of degraded SSC functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of SSC issues reviewed under the requirements of the Maintenance Rule, 10 CFR Part 50, Appendix B, and the Technical Specifications (TSs).

- October 8, 2007 through January 14, 2008, Unit 2 and 3, main steam isolation valve hydraulic solenoid replacements
- October 22, 2007 through January 25, 2008, Unit 2 and 3, reactor vessel head and pressurizer vent valves solenoid replacements

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

Emergent Work Control

The inspectors: (1) verified that the licensee performed actions to minimize the probability of initiating events and maintained the functional capability of mitigating systems and barrier integrity systems; (2) verified that emergent work-related activities such as troubleshooting, work planning/scheduling, establishing plant conditions, aligning equipment, tagging, temporary modifications, and equipment restoration did not place the plant in an unacceptable configuration; and (3) reviewed the UFSAR to determine if the licensee identified and corrected risk assessment and emergent work control problems.

- November 15 through December 07, 2008, Unit 2 and 3, 6.9KV connection bolt failure
- January 25, 2008, Unit 2, low pressure safety injection make-up control Valve MU075 replacement
- February 02, 2008, Unit 3, main feedwater Pump 3K006 repair
- February 19, 2008, Unit 2 and 3, Camp Pendleton siren failure
- January 5, 2008, Unit 2, Refueling machine failure

- February 27, 2008, Unit 3 spent fuel pool Pump 3P010 thermal overload failure

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors: (1) reviewed plant status documents such as operator shift logs, emergent work documentation, deferred modifications, and night orders to determine if an operability evaluation was warranted for degraded components; (2) referred to the UFSAR and design basis documents to review the technical adequacy of licensee operability evaluations; (3) evaluated compensatory measures associated with operability evaluations; (4) determined degraded component impact on any TSS; (5) used the Significance Determination Process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components.

- January 09, 2008, Unit 2 Emergency Diesel Generator 2G003 mechanical noise
- February 19, 2008, Unit 2 and 3, high pressure safety injection room cooler potential inadequate sizing concern
- February 20, 2008, Unit 2 and 3, spent fuel pool room cooling potential inadequate sizing concern
- February 29, 2008, Unit 2 and 3, emergency diesel generator operability with Kiene valve open

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed key affected parameters associated with energy needs, materials/replacement components, timing, heat removal, control signals, equipment protection from hazards, operations, flowpaths, pressure boundary, ventilation boundary,

structural, process medium properties, licensing basis, and failure modes for the modification listed below. The inspectors verified that: (1) evaluations were performed in accordance with 10 CFR 50.59; (2) the design bases, licensing bases, and performance capability of SSCs have not been degraded through modifications; (3) procedures and design and license basis documentation affected by changes have been adequately updated; and (4) that design and license basis documentation used to support changes, and that procedures and design and license basis documentation affected by changes, reflect the design and license basis of the facility after the change has been made.

- October 2007 through January 2008, Unit 2 and 3, component cooling water non-critical loop piping modification to support gas venting

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed 1 sample.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the six below listed postmaintenance test activities of risk significant systems or components. For each item, the inspectors: (1) reviewed the applicable licensing basis and/or design-basis documents to determine the safety functions; (2) evaluated the safety functions that may have been affected by the maintenance activity; and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test equipment was removed, the system was properly re-aligned, and deficiencies during testing were documented. The inspectors also verified the licensee identified and corrected problems related to post-maintenance testing.

- January 2, 2008, Unit 2 shutdown cooling heat exchanger discharge Valve 2HV6500 following corrective maintenance
- January 27, 2008, Unit 2 Emergency Diesel Generator 2G003 following scheduled maintenance
- January 05, 2008, Unit 2 turbine driven auxiliary feedwater Pump 2P140 following corrective maintenance
- January 23, 2008, Unit 2 turbine driven auxiliary feedwater Pump 2P140 overspeed trip test following corrective maintenance
- February 28, 2008, Unit 3, motor driven auxiliary feedwater Pump 3P141 following corrective maintenance

- February 29, 2008, Unit 3, turbine driven auxiliary feedwater Pump 3P140 following corrective maintenance

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and TS to ensure that the five below listed surveillance activities demonstrated that the SSCs tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test attributes were adequate: (1) preconditioning; (2) evaluation of testing impact on the plant; (3) acceptance criteria; (4) test equipment; (5) procedures; (6) jumper/lifted lead controls; (7) test data; (8) testing frequency and method to demonstrate TS operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of American Society of Mechanical Engineers Code requirements; (12) updating of performance indicator data; (13) engineering evaluations, root causes, and bases for returning tested SSCs not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms setpoints. The inspectors also verified that the licensee identified and implemented any needed corrective actions associated with the surveillance testing.

- November 27, 2007, Unit 2 pressurizer spray check Valve 2MU976 surveillance test
- January 19, 2008, Unit 3 Emergency Diesel Generator 3G002 monthly surveillance test
- January 11, 2008, Unit 2 Emergency Diesel Generator 2G003 monthly surveillance test
- January 23, 2008, Unit 2, main feedwater Pump 2P063 bearing oil pressure verification
- February 27, 2008, Unit 3, auxiliary feedwater Pump 3P141 surveillance test

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five samples.

b. Findings

Introduction. The inspectors identified a Green self-revealing finding for the failure of maintenance personnel to adequately adjust bearing oil pressure to a Unit 2 main feedwater pump. This caused the main feedwater pump to trip, which subsequently caused an unplanned power reduction.

Description. On January 23, 2008, Unit 2 main feedwater Pump 2P063 tripped on low bearing oil pressure while a machinist supervisor and machinist were adjusting a lube oil pressure regulator. The intent of the work was to increase oil pressure, but instead, the machinists inadvertently decreased the oil pressure when the adjusting screw was turned in the wrong direction. Operations personnel reduced plant power to 65 percent and prevented a reactor trip.

The main feedwater Pump 2P063 trip occurred do to a drop in main feedwater oil pressure to the low setpoint (4 psig) when the adjusting screw was turned in the wrong direction. At the supervisor's direction, the adjusting screw was turned clockwise, but should have been turned counter clockwise to increase the oil pressure.

The overhaul procedure used by the machinists, SO23-I-8.165, "Feed Pump Drive Turbine Internal, Bearing, and Valve Inspection," Revision 11, only stated to "adjust pressures as required." Maintenance management indicated that this procedure was intended for offline (outage) oil pressure adjustments and should not have been used to perform online adjustments of the oil pressure. The licensee indicated that a change to SO23-I-8.165 would be incorporated to add detailed instructions for oil pressure adjustments.

The inspectors noted that procedures that were normally used to adjust main feedwater pump oil pressure included an instrumentation and control work plan that had specific instructions to adjust the screw in the counter clockwise direction to increase pressure, and also included a caution that a small adjustment can cause a large change in pressure. The inspectors concluded that the maintenance personnel performing the bearing oil pressure adjustment should have stopped the work activity and questioned the adequacy of their procedural guidance when it was discovered that the procedure lacked sufficient detail to perform the activity successfully.

Analysis. The failure of maintenance personnel to use a proper procedure to adjust main feedwater bearing pressure was considered a performance deficiency. The finding was more than minor because it affects the Initiating Events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using Manual Chapter 609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance (Green) because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The finding had a crosscutting aspect in the area of human performance associated with the work practices (H.4(a)) in that human error prevention techniques, such as proper documentation, were not implemented, and that maintenance personnel proceeded with the work activity when faced with uncertainty.

Enforcement. Because this finding does not involve a violation of regulatory requirements and has very low safety significance, it is identified as FIN 05000361/2008002-1, "Unit 2 Main Feedwater Pump Trip Results in Inadvertent Power Reduction."

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the UFSAR, plant drawings, procedure requirements, and TSs to ensure that the below listed temporary modification was properly implemented. The inspectors: (1) verified that the modifications did not have an affect on system operability/availability; (2) verified that the installation was consistent with modification documents; (3) ensured that the post-installation test results were satisfactory and that the impact of the temporary modifications on permanently installed SSC's were supported by the test; (4) verified that appropriate safety evaluations were completed. The inspectors verified that licensee identified and implemented any needed corrective actions associated with temporary modifications.

- January 16, 2008, Unit 2, temporary scaffold constructed in containment in preparation for steam generator replacement

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

Cornerstone: Emergency Preparedness

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

The inspector discussed with licensee staff the status of offsite siren and tone alert radio systems to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50, Appendix E. The licensee's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, Federal Emergency Management Agency (FEMA) Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," and the licensee's current FEMA-approved alert and notification system design report, WR83-15, "System Design Report for Community Alert Siren System at San Onofre Nuclear Generating Station," April 1983. The inspector also reviewed the references as listed in the attachment to this report.

The inspector completed one sample during the inspection

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspector discussed with licensee staff the status of primary and backup systems for augmenting the on-shift emergency response staff to determine the adequacy of licensee methods for staffing emergency response facilities. The inspector reviewed licensee Procedures SO123-VIII-30.7, "Emergency Notifications," Revision 7, and SO 23-VIII-0.201, "Emergency Plan Equipment Surveillance Program," Revision 15, and the references listed in the Attachment to this report related to the emergency response organization augmentation system, to evaluate the licensee's ability to staff the emergency response facilities in accordance with the licensee emergency plan and the requirements of 10 CFR Part 50 Appendix E.

The inspector completed one sample during the inspection.

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 licensee's corrective action program requirements in Procedures SO123-XV-50, "Corrective Action Process," Revision 7, Change 2, and SO123-XV-50.39, "Cause Evaluation Standards, Methods, and Instructions," Revision 7, Change 1. The inspector reviewed summaries of 700 action requests assigned to the emergency preparedness department between February 2006 and February 2008, and selected seventeen for detailed review against the program requirements. The inspector evaluated the response to the corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with licensee program requirements, 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E. The inspector also reviewed other documents as listed in the attachment to this report.

The inspector completed one sample during the inspection.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS1 Access Control To Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspector used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspector interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspector performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation packages reported by the licensee in the Occupational Radiation Safety Cornerstone
- Controls (surveys, posting, and barricades) of two radiation, high radiation, or airborne radioactivity areas
- Radiation exposure permits, procedures, engineering controls, and air sampler locations
- Conformity of electronic personal dosimeter alarm set points with survey indications and plant policy; workers' knowledge of required actions when their electronic personnel dosimeter noticeably malfunctions or alarms
- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent
- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection
- Corrective action documents related to access controls
- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies
- Radiation exposure permit briefings and worker instructions
- Adequacy of radiological controls, such as required surveys, radiation protection job coverage, and contamination control during job performance
- Posting and locking of entrances to all accessible high dose rate - high radiation areas and very high radiation areas
- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

The inspector completed 16 of the required 21 samples.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspector assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspector used the requirements in 10 CFR Part 20 and the licensee's procedures required by technical specifications as criteria for determining compliance. The inspector interviewed licensee personnel and reviewed:

- Current 3-year rolling average collective exposure
- Ten work activities from previous work history data which resulted in the highest personnel collective exposures
- Site-specific trends in collective exposures, plant historical data, and source-term measurements
- Site-specific ALARA procedures
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Intended versus actual work activity doses and the reasons for any inconsistencies
- Interfaces between operations, radiation protection, maintenance, maintenance planning, scheduling and engineering groups
- Integration of ALARA requirements into work procedure and radiation work permit (or radiation exposure permit) documents
- Person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements
- Shielding requests and dose/benefit analyses
- Post-job (work activity) reviews
- Assumptions and basis for the current annual collective exposure estimate, the methodology for estimating work activity exposures, the intended dose outcome, and the accuracy of dose rate and man-hour estimates
- Method for adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered
- Exposure tracking system

- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- First-line job supervisors' contribution to ensuring work activities are conducted in a dose efficient manner
- Exposures of individuals from selected work groups
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Declared pregnant workers during the current assessment period, monitoring controls, and the exposure results
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Resolution through the corrective action process of problems identified through post-job reviews and post-outage ALARA report critiques
- Corrective action documents related to the ALARA program and follow-up activities, such as initial problem identification, characterization, and tracking
- Effectiveness of self-assessment activities with respect to identifying and addressing repetitive deficiencies or significant individual deficiencies

The inspector completed 14 of the required 15 samples and 10 of the optional samples.

b. Findings

No findings of significance were identified.

40A1 Performance Indicator Verification (71151)

.1 Emergency Preparedness

a. Inspection Scope

The inspector reviewed licensee evaluations for the three emergency preparedness cornerstone performance indicators of Drill and Exercise Performance, Emergency Response Organization Participation, and Alert and Notification System Reliability, for the period April through December, 2007. The definitions and guidance of Nuclear Energy Institute Report 99-02, "Regulatory Assessment Indicator Guidelines," Revisions 3 through 5, and licensee Performance Indicator Procedures SO123-VIII-0.401, "Emergency Preparedness Performance Indicators," Revision 1, and Site Support Services Guideline SO123-6-8, "Offsite Emergency Planning Alert and Notification System Performance Indicators," Revision 3, were used to verify the accuracy of the licensee's evaluations for each performance indicator reported during the assessment period.

The inspector reviewed a 100 percent sample of drill and exercise scenarios and licensed operator simulator training sessions, notification forms, and attendance and critique records associated with training sessions, drills, and exercises conducted during the verification period. The inspector reviewed 31 selected emergency responder qualification, training, and drill participation records. The inspector reviewed alert and notification system testing procedures, maintenance records, and a 100 percent sample of siren test records. The inspector also reviewed other documents as listed in the attachment to this report.

The inspector completed three samples during the inspection.

b. Findings

No findings of significance were identified.

.2 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspector reviewed licensee documents from October 1 through December 31, 2007. The review included corrective action documentation that identified occurrences in locked high radiation areas (as defined in the licensee's technical specifications), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 5). Additional records reviewed included ALARA records and whole body counts of selected individual exposures. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. Performance indicator definitions and guidance contained in NEI 99-02, Revision 5, were used to verify the basis in reporting for each data element.

The inspector completed the required sample (1) in this cornerstone.

Cornerstone: Public Radiation Safety

Radiological Effluent Technical Specification/Offsite Dose Calculation Manual
Radiological Effluent Occurrences

The inspector reviewed licensee documents from October 1 through December 31, 2007. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded performance indicator thresholds and those reported to the NRC. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. Performance indicator definitions and guidance contained in NEI 99-02, Revision 5, were used to verify the basis in reporting for each data element.

The inspector completed the required sample (1) in this cornerstone.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

The inspectors performed a daily screening of items entered into the licensee's corrective action program. This assessment was accomplished by reviewing daily summary reports for action requests, and work mechanisms, and attending corrective action review and work control meetings. The inspectors: (1) verified that equipment, human performance, and program issues were being identified by the licensee at an appropriate threshold and that the issues were entered into the corrective action program; (2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional follow-up through other baseline inspection procedures.

.2 Selected Issue Follow-up Inspection

a. Inspection Scope

In addition to the routine review, the inspectors selected the one below listed issue for a more in-depth review. The inspectors considered the following during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

- January 23, 2008, Unit 2, turbine driven auxiliary feedwater Pump 2P140 overspeed trip test failure

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified. However, the inspectors noted that the cause of the turbine driven auxiliary pump overspeed trip failure was not readily apparent, and that engineering personnel interviewed could not attribute the test failure to any maintenance activity that had been recently performed on Pump 2P140. Engineering personnel interviewed also indicated that the probable cause of the overspeed trip test failure was burring on the mechanical trip mechanism that had built up over the course of time, causing increased mechanical friction. The inspectors questioned the susceptibility of the Unit 3 turbine driven auxiliary feedwater pump, given that the same age related failure mechanism (increased mechanical friction caused by burring on the trip mechanism over time) could also exist there. Engineering personnel agreed that the failure mechanism could also exist on the Unit 3 turbine driven auxiliary feedwater pump.

Operations personnel ran the overspeed trip test on the Unit 3 turbine driven auxiliary feedwater pump to verify its operability. The Unit 3 turbine driven auxiliary feedwater pump passed the overspeed trip test without any noted deficiencies.

.3 Annual Sample Review

a. Inspection Scope

The inspector selected 17 action requests and one apparent cause analysis for detailed review. The reports were reviewed to ensure the full extent of issues was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspector evaluated the action requests and apparent cause analysis against the requirements of SO123-XV-50, "Corrective Action Process," Revision 7, Change 2, and SO123-XV-50.39, "Cause Evaluation Standards, Methods, and Instructions," Revision 7, Change 1.

b. Findings and Observations

No findings of significance were identified.

.4 Radiological Sample Review

a. Inspection Scope

The inspector evaluated the effectiveness of the licensee's problem identification and resolution process with respect to the following inspection areas:

- Access Control to Radiologically Significant Areas (Section 2OS1)
- ALARA Planning and Controls (Section 2OS2)

b. Findings and Observations

No findings of significance were identified.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

a. Inspection Scope

Event Report Reviews

The inspectors reviewed the five below listed Licensee Event Reports (LERs) and related documents to assess: (1) the accuracy of the LER; (2) the appropriateness of corrective actions; (3) violations of requirements; and (4) generic issues.

- .1 (Closed) LER 05000361/2006-001-00, "Both Trains of Shutdown Cooling Declared Inoperable Due to the Discovery of a Through Wall Pipe Crack in Common Header"

On January 11, 2006, with Unit 2 in Mode 5 and on shutdown cooling, the licensee discovered a through wall crack in the 8 inch low pressure safety injection system piping line that was common to both trains of shutdown cooling,

and unisolable. The licensee declared both trains of shutdown cooling inoperable, and performed a laboratory analysis which determined that the crack was caused by high cycle fatigue. The licensee performed an evaluation of the structural integrity of the affected pipe and concluded that pipe was operable for shutdown cooling functions, provided the system temperature was maintained below 200 degrees F and below 275 psig. The licensee performed upgrades to Unit 2 class 2 piping, and performed 86 inspections of other susceptible welds to determine if the extent of condition of the problem, using dye penetrant and ultrasonic testing. No other cracks were found. The licensee further performed similar inspections and piping upgrades to susceptible areas in Unit 3 during the Cycle 14 refueling outage, which ended on January 19, 2008. The licensee documented this issue in AR's 060100463 and 061100162. The inspectors reviewed the LER and concluded it captured the appropriate causes and corrective actions. This LER is closed.

- .2 (Closed) LER 05000361;362/2006-002, "Offsite Power Declared Inoperable following the trip of 500 KV Transmission Line in Southern California"

On February 3, 2006 at 4:46 p.m., with Unit 2 shutdown in a refueling outage and Unit 3 at 100% power, the Devers-Palo Verde 500 KV transmission line relayed. Using nomograms, the Southern California Grid Control Center determined that offsite power limits could not be guaranteed should Unit 3 trip offline. Operations personnel declared offsite power inoperable, and entered their abnormal procedure for a loss of offsite power. The California Independent system operator added generation to the grid to restore offsite power to within nomogram limits, and offsite power was declared operable at 6:43 p.m. The licensee documented this issue in AR 060200232. The inspectors concluded that operations personnel responded appropriately to the event, and that the LER captured the appropriate causes and corrective actions. This LER is closed.

- .3 (Closed) LER 05000362/2006-001-00, "Emergency Subgroup Relay Test Causes Inadvertent Fill of Steam Generator"

On February 15, 2006, Unit 3 operations personnel were performing subgroup relay testing on emergency feedwater actuation relays. During the testing, one of the relays (K402-B) failed, which resulted in an open auxiliary feedwater path to steam Generator 3E089. Operations personnel immediately secured from the testing, and recovered steam Generator E089 level. Steam Generator E089 level raised from approximately 67% at the beginning of the transient, to a maximum of 77% at the height of the transient. Operations personnel used the main feedwater system to restore steam Generator E089 level back to 67 percent. The transient lasted approximately two minutes. The licensee determined that a Cutler Hammer relay block had experienced an age related failure. The licensee completed replacement of all remaining susceptible Cutler Hammer relays. The licensee documented this issue in AR 060200863. The inspectors reviewed the LER and and concluded that it addressed the appropriate causes and corrective actions. This LER is closed.

- .4 (Closed) LER 05000361/2006-003-00, "Potential Emergency Diesel Generator Trip After a Seismic Event Due to an Electrical Ground Fault in a Non-Seismic Circuit"

This issue was determined to be an NCV and is documented in Section 1R21b.5 of inspection Report 05000361;362/2006009 as NCV 05000361;362/2006009-05, "Failure to Identify Diesel Generator Seismic Noncomformance." This LER is closed.

- .5 (Closed) LER 05000362/2006-004-00, "Inoperable breaker Causes Train A Charging Pump to be Inoperable for Longer than Allowed by Technical Specifications"

On September 27, 2006, charging Pump 3P190 failed to start from the control room. The licensee determined the cause of the failure to be a sticking shunt trip device in the charging pump breaker. The failed shunt trip device was sent to the manufacturer (ABB) for more detailed analysis. The analysis revealed that the part was incorrectly assembled. An inspection of parts bins did not identify any additional shunt trip devices that were incorrectly assembled. However, to avoid similar problems in the future, the licensee revised the 480 volt breaker preventive maintenance and overhaul procedures to specifically inspect for this condition. The licensee documented this issue in AR 060901232. The inspectors reviewed the LER and concluded that it addressed the appropriate causes and corrective actions. This LER is closed.

- .6 (Closed) Unresolved Item 05000362/2007008-01: "Review Adequacy of Manual Action Completion Times for Control Room Evacuation"

The inspector performed an in-office review of licensee documentation and discussed the concerns with fire protection engineers and licensing staff.

During a triennial fire protection inspection, the team questioned the timing of manual operator actions and the ability to meet the plant response requirements for a control room evacuation. The licensee established the manual actions to comply with 10 CFR Part 50, Appendix R, Section III.G.3, and the plant response requirements of Section III.L.

Following the inspection, the licensee evaluated certain plant responses to a fire in the control room. Calculation N-0220-038, "Plant Transient Response to Selected Appendix R Scenarios," Revision 0, identified three sets of operator actions that must be completed prior to the 30 minutes assumed in other design documents. Operators performed the actions in Procedure SO23-13-21, "Fire," Revision 7 and Procedure SO23-13-2, "Shutdown from Outside the Control Room," Revision 7. Calculation N-0220-038 determined that the three sets of actions must be completed as listed in the following table to meet the response required by Appendix R, Section III.L:

<u>Actions/Goals</u>	<u>Allowed Times To Implement Procedures</u>	<u>Times Requirements</u>	<u>NRC Timed Walkdown Completion Times</u>
Isolate S/G Blowdown and Restore AFW	30 minutes	25 minutes	≤5 minutes AFW in 25 minutes
Start EDG and Energize Associated Buses	30 minutes	25 minutes	21 minutes
Isolate RCS Letdown	30 minutes	26 minutes	7 minutes

The table lists the times measured during timed walkthrough of the operators during the triennial inspection in June 2007. Since operators had completed the actions within the times determined to be acceptable by Calculation N-0220-038, the inspectors determined that the failure to identify accurately the limiting times to complete required actions had minimal impact. From review of Manual Chapter 0612, Appendix E, the inspectors determined that this deficiency was similar to Example 3.k and concluded the failure to be of minor safety significance.

The inspectors verified that the licensee was implementing design modifications to eliminate the need to use manual actions prior to 30 minutes. The licensee documented these deficiencies in Action Requests 070500869 and 070600585.

40A6 Meetings, Including Exit

On March 7, 2008, the inspector presented the results of the onsite biennial emergency preparedness inspection to Mr. J. F. Fee, Manager, Emergency Preparedness, and other members of his staff, who acknowledged the findings. The inspector confirmed that proprietary, sensitive, or personal information examined during the inspection had been returned to the identified custodian(s).

On March 14, 2008, the inspector presented the ALARA occupational radiation safety inspection results to Mr. R. Corbett and other members of his staff who acknowledged the findings. The inspector confirmed that proprietary information was not provided or examined during the inspection.

On March 25, 2008, the inspectors presented the quarterly inspection results to Mr. R. Ridenoure and others who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

On March 31, 2008, the inspector discussed the results of an in-office review of the URI with Mr. D. Axline, Licensing Engineer, who acknowledged the findings. The inspectors returned all proprietary and confidential information provided during the inspection.

40A7 Licensee-Identified Violations

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

- Title 10 CFR 20.1902 states, in part, that the licensee shall post each high radiation area (defined as an area in excess of 100 millirem per hour at 30 centimeters) with a conspicuous sign or signs bearing the radiation symbol and the words "Caution High Radiation Area." Contrary to these regulations, on December 20, 2007, a radiation protection technician did not restore a high radiation area posting for an area of the Unit 2 steam generators with general area dose rates as high as 250 millirem per hour at 30 centimeters. On December 23, 2008, two radiation protection technicians performing surveys in the area identified the incorrect high radiation area posting and documented the issue in the licensee's corrective action program as Action Request 071201417. The finding was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

V. Arora, Engineer, Nuclear Oversight
B. Ashbrook, Manager, Emergency Preparedness
D. Axline, Technical Specialist, Nuclear Regulatory Affairs
D. Breig, Manager, Engineering Standards and Excellence
B. Corbett, Manager, Health Physics
B. Culverhouse, Manager, Site Support Services/Offsite of Emergency Preparedness
J. Dahl, Operations Manager
D. Deglopper, Technical Specialist, Health Physics Planning
D. Dick, Supervisor, Chemistry
G. Fausett, Supervisor, Shielding Program, Health Physics
J. F. Fee, Manager, Emergency Preparedness
K. Gallion, Supervisor, ALARA, Health Physics
S. Gardner, Engineer, Nuclear Regulatory Affairs
J. Hirsch, Manager, Maintenance
K. Johnson, Manager, Design Engineering
M. Johnson, Manager, Support Services
L. Kelly, Engineer, Nuclear Regulatory Affairs
M. Kelly, Engineer, Nuclear Regulatory Affairs
R. Nielsen, Supervisor, Nuclear Oversight
A. Martinez, Manager, Health Physics Operational Support
C. McAndrews, Manager, Nuclear Oversight and Assessment
L. Pepple, Technical Specialist, Health Physics Planning, Health Physics
N. Quigley, Manager, Mechanical/Nuclear Maintenance Engineering
J. Reilly, Vice-President, Engineering and Technical Services
R. Richter, Engineering Supervisor, Fire Protection
T. Remick, Fuels Engineer
R. Ridenoure, Vice President, Nuclear Generation
M. Russel, Technical Specialist, Regulatory Projects, Health Physics
A. Scherer, Manager, Nuclear Regulatory Affairs
S. Sewell, Technical Specialist, DWP Program, Health Physics
A. R. Shean, Manager, Nuclear Oversight
R. St. Onge, Manager, Maintenance and Systems Engineering
K. K. Strand, Manager, Site Emergency Preparedness
T. Vogt, Manager, Special Projects
D. Wilcockson, Manager, Plant Operations
C. Williams, Manager, Compliance
T. Yackle, Manager, Operations

Nuclear Regulatory Commission

D. Loveless, Senior Reactor Analyst

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000361/2008002-1	FIN	Unit 2 Main Feedwater Pump Trip Results in Inadvertent Power Reduction (Section 1R22)
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Closed

05000361/2006-001-00	LER	Both Trains of Shutdown Cooling Declared inoperable Due to the Discovery of a Through Wall Pipe Crack in Common Header (Section 4OA5)
05000361;362/2006-002	LER	Offsite Power Declared Inoperable following the trip of 500 KV Transmission Line in Southern California (Section 4OA5)
05000362/2006-001-00	LER	Emergency Subgroup Relay Test Causes Inadvertent Fill of Steam Generator (Section 4OA5)
05000361/2006-003-00	LER	Potential Emergency Diesel Generator Trip After a Seismic Event Due to an Electrical Ground Fault in a Non-Seismic Circuit (Section 4OA5)
05000362/2006-004-00	LER	Inoperable breaker Causes Train "A" Charging Pump to be Inoperable for Longer than Allowed by Technical Specifications (Section 4OA5)
05000361;362/2007008-01	URI	Review Adequacy of Manual Action Completion Times for Control Room Evacuation (Section 4OA5)

Discussed

None

LIST OF DOCUMENTS REVIEWED

In addition to the documents called out in the inspection report, the following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

Section 1R04: Equipment Alignment

Procedures

Number	Title	Revision
SO23-XIII-50	Fire Door Inspection	10

SD-SO23-410 Saltwater Cooling System 7

Drawings

Number	Title	Revision
40160B	P&I Diagram Auxiliary Feedwater Steam Supply System 1301	22
83134	Diesel Gen. Bldg. & Tank Bldg. Unit 3 EL. 30'-6" LCS Barriers	7
10253	Diesel Generator Bldg. Units 2 & 3 Finish & Door Schedules and Details	11

ARs

0802000067 0802000067

RMOs

07051718000

Section 1R05: Fire Protection

Procedures

Number	Title	Revision
3-0345	"Unit 3 Diesel Generator Pre-fire plans"	4
2/3-7.0-2SE	"Updated Fire Hazard Analysis"	May 2007

Section 1R12: Maintenance Effectiveness

Procedures

Number	Title	Revision
SO23-3-3.31		
SO23-I8.60		

ARs

071001517

Maintenance Orders

06070839 06070473

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

ARs

080101400 071201496 080201295 080200854 071101273 080400141
080100637 071101313 071200318

Section 1R15: Operability Evaluations

ARs

080100637 071101520 071200295 080200880

Section 1R17: Permanent Plant Modifications

ARs

060801030 061001379

Section 1R19: Postmaintenance Testing

Procedures

Number	Title	Revision
SO23-3-3.23	"Diesel Generator Monthly Surveillance"	30
SO23-2-13	"Diesel Generator Operation"	31

ARs

060900059 080100637 080100919 080101015 080101033 08020503

Section 1R22: Surveillance Testing

Procedures

Number	Title	Revision
SO23-3-3.31	"Pressurizer Spray Check Valves Surveillance"	11
SO23-3-3.23	"Diesel Generator Monthly Surveillance"	30

MO's

Number
05120731000

ARs

080101726 071101273 080100972 080101185 080101431

Section 1R23: Temporary Plant Modifications

Action Requests

080401220 Assignment 54

Section 1EP2

“San Onofre Nuclear Generating Station Site-Specific Offsite Radiological Emergency Preparedness Prompt Alert and Notification System Evaluation Report,” January 5, 1984

“San Onofre Nuclear Generating Station Site-Specific Radiological Emergency Preparedness Community Alert Siren System Quality Assurance Verification Report,” December 31, 1998

SO123-XVIII-10, “Offsite Community Alert Sire System – System Description and Operational Guide,” Revision 8

SO123-XVIII-10.1, “Offsite Community Alert Sire System – Biweekly Siren Test,” Revision 7

SO123-XVIII-10.3, “Offsite Community Alert Sire System – Quarterly Growl Test,” Revision 8

SO123-XVIII-10.4, “Offsite Community Alert Sire System – Response to a Report of an Inadvertent Siren Activation,” Revision 4

SO123-XVIII-10.5, “Offsite Community Alert Sire System – Annual Activation Test Procedures,” Revision 7

SO123-XVIII-10.6, “Offsite Community Alert Sire System – Inspection and Maintenance,” Revision 3

Offsite Community Alert Sire System – Activation Procedure for Orange County, August 2006
Offsite Community Alert Sire System – Activation Procedure for State Parks, San Clemente, San Juan Capistrano, Dana Point, Camp Pendleton, August 2006

Section 1EP3

Recall System Surveillances:

2006: March 6, April 18, May 11, June 2, July 27, August 15, September 13, October 5

2007: January 4, February 10, March 28, April 23, May 23, June 5, July 16, August 7, September 24, October 19, November 20, December 30

2008: January 18

Section 1EP5

SO123-0-A8, “Trip/Transient and Event Review,” Revision 4

SO123-XXI-1.11.3, "Emergency Plan Training Program Description," Revision 17

Site Support Services Guideline SO123-0-A7, "Notification and Reporting of Significant Events," Revision 5, Change 1

Site Support Services Guideline SO123-G-10, "Assessment of a Natural Disaster or Malevolent Act potentially affecting Offsite Emergency Response Capabilities," Revision 1

Surveillance Report SOS-024-07, "April 2007 Emergency Plan Exercise Observation," May 10, 2007

Audit SCES-010-06, "Emergency Preparedness," November 29, 2006

Audit SCES-013-07, "Emergency Preparedness," October 10, 2007

Surveillance Report SOS-011-06, "Emergency Preparedness – Public Information and Coordination with Offsite Agencies," July 6, 2006

Surveillance Report SOS-008-07, "Evaluate EP Drill 0701 Performance," April 24, 2007

Directed Assessment Report, "Emergency Preparedness Program Assessment Report," February 15, 2008

Drill Evaluation Reports:

Critique Report 0601, April 26, 2006

Critique Report 0602, July 12, 2006

Critique Report 0603, August 23, 2006

Critique Report 0612, September 28, 2006

Critique Report 0604, October 4, 2006

Critique Report 0605, October 11, 2006

Critique Report 0701, March 14, 2007

Critique Report 0702, April 18, 2007

Force-on-Force Critique Reports, June 2-3, 2006

Critique Report 0712, June 20, 2007

Critique Report 0703, July 18, 2007

Critique Report 0705, August 1, 2007

Critique Report 0706, August 29, 2007

Critique Report 0704, October 3, 2007

Action Requests:

050700052-13, 051100604-10, 060400620-04, 060700567-05, 060700567-58, 060801294-02, 060800144-02, 061000324-07, 061201410-01, 061200874-15, 070201084-14, 070400032-02, 071000173-02, 071001454-03, 070400150-01, 070700761-01 to -42, 070801566-01, 070801568-01, and 071200910-07

Emergency Preparedness Issue Roll-Up, 2006

Emergency Preparedness Issue Roll-Up, 2007

Memorandum, S. Erickson to B. Ashbrook, "March 2007 Pre-Exercise Week Observations and Recommendations," March 16, 2007

AR 071200910, Emergency Planning Directed Assessment, February 15, 2008

Lesson Plan EPTCDA, "Core Damage Assessment," Revision 0-0

Lesson Plan, "Overview for the San Onofre Nuclear Generating Station," January 17, 2007

Lesson Plan, "Radiation Monitoring Team Training for the San Onofre Nuclear Generating Station," March 1, 2007

Lesson Plan, "Emergency Worker Exposure Control," October 9, 2007

Section 20S1: Access Controls to Radiologically Significant Areas (71121.01)

Action Requests:

071001514, 071101247, 071200125, 071200317, 071200332, 071200473,
071200494, 071200912, 071201310, 071201417, 080100207, 080100343

Audits and Self-Assessments:

Audit SCES-006-07

Health Physics Division Self-Assessment: 2007 Fourth Quarter

Procedures:

SO123-VII-20.9.4	Survey and Release of Personnel, Revision 5
SO123-VII-20.9	Radiological Surveys, Revision 9
SO123-VII-20.10.2	Health Physics Pre-Job Briefings/Pre-Job Meetings, Revision 5
SO123-VII-20.10	Radiological Work Planning and Controls, Revision 11
SO123-VII-20.11.1	Radiological Posting, Revision 9
SO123-VII-20.11	Access Control Program, Revision 10
SO123-VII-20	Health Physics Program, Revision 12

Radiation Exposure Permits:

A109080001, A0727070047, 06101398000

Miscellaneous:

Health Physics Work Plan: 2008 Spent Resin Campaign

Individual worker whole body count and internal dose assessment

Personnel Contamination records

Radiological surveys: T059/T060 spent resin tanks, Unit 2 Fuel Handling Upender Pit,
Unit 2 Steam Generator, Unit 2 Reactor Annulus

Section 2OS2: ALARA Planning and Controls (71121.02)

Action Requests:

071201723, 080100640

ALARA Committee Meeting Minutes (associated ARs):

070600277, 070800568, 070800892, 071101117, 071101118, 071101120,
071101121, 071101122, 071200534, 071200535, 071200536, 071200543,
071200545, 071200547, 071200548, 071200549, 071200550, 071200552

ALARA Planning Packages (Pre-job, In Progress, and Post Job Reviews):

Midcycle Unit 3 Cycle 14A: Pressurizer Weld Overlay

Refueling Unit 2 Cycle 15: ISI Activities, Permanent Reactor Cavity Seal Ring, Pressurizer Weld Overlay, Reactor Coolant Pump 004 Gasket Replacement, Refueling Activities, Scaffolding, Steam Generator Primary Inspection

Audits and Self-Assessments:

Audit SCES-006-07

Health Physics Division Self-Assessment: 2007 First through Fourth Quarters

Procedures:

HPPG-SO123-G-1	SONGS ALARA Expectations, Revision 0
HPPG-SO123-G-2	SONGS ALARA Working Group and ALARA Committee Guidelines, Revision 0
HP-S-14	Hot Spot Program, Revision 9
SO123-VII-20.4.1	ALARA Design Change Reviews, Revision 4
SO123-VII-20.4.2	Temporary Shielding, Revision 9
SO123-VII-20.4.3	ALARA Job Reviews, Revision 4
SO123-VII-20.4	ALARA Program, Revision 4
SO123-VII-20.10.2	Health Physics Pre-Job Briefings/Pre-Job Meetings, Revision 5
SO123-VII-20.10	Radiological Work Planning and Controls, Revision 11
SO123-VII-20.15	Radiation Protection for Unborn Children, Revision 1
SO123-VII-20	Health Physics Program, Revision 12

Radiation Exposure Permits\Tasks:

A109080001

Shielding Requests:

Engineering Change Package Request: ECP 061101001-2
R2-02-07, R2-03-07, R2-06-07, R2-08-07, R2-17-07, R2-32-07, R2-39-07

Miscellaneous:

Health Physics Work Control Plan: RU2C15 Primary Side Steam Generator Work
Radiation Protection Refueling Outage Lessons learned U2C14 and U3C14 reports
Two Declared Pregnant Worker records and dose evaluations
Units 2/3 EPRI Trend point Survey Data from Cycles 10-14
Worker Radiological Controlled Area exposure/dose data

Section 40A1: Performance Indicator Verification (71151)

Action Requests:

071201311, 071201728, 08101536, 080300572

Procedures:

HP-I-4 Performance Indicator Reporting, Revision 2

Miscellaneous:

NRC PI Precursor Gap Analyses

Section 40A2: Identification and Resolution of Problems (71152)

ARs

080100919 080101015 080101033

Miscellaneous:

SO123-VIII-1, "Recognition and Classification of Emergencies," Revisions 24 to 26
SO123-VIII-30.7, "Emergency Notifications," Revisions 7 and 8
SO123-VIII-40.100, "Dose Assessment," Revision 13
San Onofre Nuclear Generating Station Emergency Plan, Revision 20

Section 40A3: Follow-up of Events and Notices of Enforcement Discretion (71153)

ARs

060200863 060901232

Section 4OA5: Other Activities

Action Requests:

070500869 070600585

Calculation:

N-0220-038 Plant Transient Response to Selected Appendix R Scenarios 0 AND 1

Procedures:

SO23-13-2 Shutdown room Outside the Control Room 10
SO23-13-21 Fire 11-13

Miscellaneous Documents:

Report SONGS 2 / 3 Appendix R Compliance Assessment 9
90035AO Manual Action Feasibility Appendix A

LIST OF ACRONYMS USED

ALARA As-Low-As-Is-Reasonably-Achievable
ASME American Society of Mechanical Engineers
AR Action Request
CAP Corrective Action Program
CFR *Code of Federal Regulations*
CRDR Condition Report Disposition Request
EDG Emergency Diesel Generator
EPRI Electric Power Research Institute
FEMA Federal Emergency Management Agency
LER Licensee Event Report
MSPI Mitigating Systems Performance Index
NCV Non-cited Violation
NEI Nuclear Energy Institute
NRC U.S. Nuclear Regulatory Commission
RCS Reactor Coolant System
SSC Systems, Structures, and Components
TS Technical Specification
UFHA Updated Final Hazards Analysis
UFSAR Updated Final Safety Analysis Report