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

February 10, 2011

Mr. Peter Dietrich
Senior Vice President and
Chief Nuclear Officer
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION – NRC INTEGRATED INSPECTION REPORT 05000361/2010005 and 05000362/2010005

Dear Mr. Dietrich:

On December 31, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your San Onofre Nuclear Generating Station, Units 2 and 3 facility. The enclosed integrated inspection report documents the inspection findings, which were discussed on December 22, 2010, with members of your staff.

The inspections 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, the NRC has identified four issues that were evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has determined that violations are associated with these issues. Additionally, three licensee-identified violations, which were determined to be of very low safety significance, are listed in this report. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as a noncited violations, consistent with Section 2.3.2 of the NRC Enforcement Policy.

The NRC also conducted two team inspections at your site as authorized by the NRC's Executive Director for Operations in a deviation memorandum [ML 1018805400] issued April 9, 2010. The first team inspection focused on procedure compliance as well as the adequacy of site procedures for operations and maintenance activities. This inspection also evaluated your actions to address NRC Confirmatory Order EA-07-232, which involved deliberate non-compliance of requirements at your station. The NRC determined your measures to address the confirmatory order were satisfactory. With respect to the maintenance and operations

observations, the team primarily reviewed in-process maintenance activities, observed operators in the control room for extended periods, and conducted staff interviews in the field. The NRC concluded that progress was evident with respect to the identification of adverse conditions, including deficient procedures, but further improvement was warranted concerning procedure compliance and work instruction adequacy. The second team inspection focused on the adequacy of your corrective actions to address the substantive cross cutting issue in problem identification and resolution. The NRC determined that your corrective actions in this area have been largely effective, and that improvement in your corrective action process should continue to result in further improvements.

If you contest the violations or the significance of the noncited violations, 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, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the facility. In addition, if you disagree with the crosscutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at the facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to provide one for cases where a response is not required, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

Sincerely,

/RA/

Ryan E. Lantz, Chief
Project Branch D
Division of Reactor Projects

Docket Nos. 50-361, 50-362

License Nos. NPF-10, NPF-15

Enclosure:
NRC Inspection Report 05000361/2010005 and 05000362/2010005
w/Attachment: Supplemental Information

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See next page

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ADAMS: ☐ No ☑ Yes	☑ SUNSI Review Complete ☑ Publicly Available ☐ Non-publicly Available	Reviewer Initials: GAG ☑ Non-Sensitive ☐ Sensitive

RIV:SRI:DRP	RI:DRP	RI:DRP	C:DRS/EB1	C:DRS/EB2
GWarnick	JReynoso	MYoung	TRFarnholtz	NFO'Keefe
/RA/	**/RA/**	***/T-RLantz for/***	**/RA/**	**/RA/**
2/2/11	2/2/11	2/8/11	2/2/11	2/7/11
C:DRS/OB	C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	C:DRP/D
MSHaire	MPShannon	GEWerner	MCHay	RLantz
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-361, 50-362
License:	NPF-10, NPF-15
Report:	05000361/2010005 and 05000362/2010005
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:	September 24, 2010 through December 31, 2010
Inspectors:	S. Achen, Reactor Inspector S. Alferink, Reactor Inspector C. Alldredge, Health Physicist D.Allen, Senior Project Engineer I. Anchondo, Reactor Inspector M. Bloodgood, Operations Engineer P. Capehart, Operations Examiner L. Carson II, Senior Health Physicist P. Elkmann, Senior Emergency Preparedness Inspector S. Garchow, Senior Operations Engineer G. Guerra, Emergency Preparedness Inspector N. Greene, Ph.D., Health Physicist, NRR T. Hedigan, Operations Engineer Z. Hollcraft, Project Engineer M. Jimenez, Health Physicist, NRR B. Larson, Senior Operations Engineer S. Makor, Reactor Inspector L. Micewski, Reactor Inspector C. Osterholtz, Senior Operations Engineer G. Replogle, Senior Reactor Analyst J. Reynoso, Resident Inspector L. Ricketson, Senior Health Physicist F. Sanchez, Senior Resident Inspector R. Telson, Operations Engineer G. Tutak, Resident Inspector G. Warnick, Senior Resident Inspector M. Williams, Reactor Inspector M. Young, Resident Inspector

Approved By: Ryan E. Lantz
Project Branch D
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000361/2010005, 05000362/2010005; 09/24/2010 – 12/31/2010; San Onofre Nuclear Generating Station, Units 2 and 3, Integrated Resident and Regional Report; Focused Baseline Inspection of Maint. & Ops., Id. & Res. of Prob, Event F/U.

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspections by region-based inspectors. Four Green noncited violations of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The crosscutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management 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 Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The team identified a Green noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of plant personnel to follow site procedures that controlled equipment storage in the radwaste building. Specifically, in October, 2010, plant personnel failed to follow Procedure SO23-XX-31, "Control of Work and Storage Areas within the Protected Area during Unit Outages at SONGS 2 and 3", Revision 0, by improperly storing portable electrical equipment panels outside an approved laydown area. The portable electrical equipment panels were tied-off near a hydrogen supply line which could have been damaged during a seismic event. Consequently, a hydrogen fire could have damaged trains A and B safety related equipment cables in the overhead, but sufficient train A cables were free of the area to permit a safe shutdown. A hydrogen fire was not analyzed in the San Onofre Units 2 and 3 "Fire Hazards Analysis Report," because the hydrogen line was designed to withstand a seismic event. The licensee captured this performance deficiency in their corrective action program as Nuclear Notifications NNs 201142972 and 201140052.

  This finding was more than minor because it could adversely affect the protection against fires attribute of the initiating events cornerstone objective. The Initiating Events Cornerstone objective is to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors performed the initial significance determination for the finding using the NRC Inspection Manual 0609, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors transitioned to NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." However, this guidance was not well suited for this finding. A Region IV senior reactor analyst completed a Phase 3 significance determination and found that the finding was of very low safety significance. The bounding change to core damage frequency was 4E-8/year.

The dominant core damage sequence included a loss of offsite power initiating event and failure of a safety relief valve to seat. The relatively low frequency of a seismic induced loss of offsite power event coupled with the remaining available equipment helped to limit the finding's significance. The finding had a crosscutting aspect in the area of human performance associated with the work practices component and the self-checking theme, because personnel failed to properly check the procedural requirements prior to staging C-panels near the hydrogen line [H.4(a)] (Section 4OA5).

Cornerstone: Mitigating Systems

- Green. Between September 23 and November 15, 2010, the inspectors identified two examples of a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of licensee personnel to follow the requirements of corrective action program procedures for nuclear notification significance screening. Specifically, licensee personnel failed to follow Procedure SO123-XV-50.CAP-2, "SONGS Nuclear Notification Screening," Revision 7, to properly screen for significance, conditions that result in non-routine reporting to the NRC and Critical A component failures. In response to the inspectors' question, the licensee initiated Nuclear Notifications NNs 201122165 and 201203374 to perform appropriate evaluations of the corrective action programmatic issues.

  The performance deficiency is more than minor, and therefore a finding, because, if left uncorrected, it would have the potential to lead to a more significant safety concern by not evaluating problems commensurate with their safety significance, such that the resolutions address the causes and extent of conditions. The finding is associated with the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding was determined to have a crosscutting aspect in the area of problem identification and resolution, associated with the corrective action program, in that the licensee failed to thoroughly evaluate problems such that the resolutions address causes and extent of conditions, and failed to properly classify, prioritize, and evaluate for operability and reportability conditions adverse to quality [P.1(c)] (Section 4OA2).

Cornerstone: Barrier Integrity

- Green. A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was identified for the failure of licensee personnel to follow procedures associated with foreign material exclusion controls, which resulted in a failure to positively control a load beam over the spent fuel pool. Specifically, on November 24, 2010, the licensee failed to implement appropriate foreign material exclusion controls for maintaining positive control on a load beam over the spent fuel pool which dropped and caused damage to the fuel assembly storage rack.

  This performance deficiency was determined to be more than minor, and therefore a finding, because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the load beam could have fallen and damaged fuel assemblies stored in the spent fuel pool. The finding is associated with the Barrier Integrity Cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) does not result in loss of cooling to the spent fuel pool, whereby operator or equipment failures could preclude restoration of cooling prior to pool boiling; (2) does not result from fuel handling errors that caused damage to fuel clad integrity or a dropped assembly; and (3) do not result in a loss of spent fuel pool inventory greater than ten percent of spent fuel pool volume. The finding has a crosscutting aspect in the area of human performance, associated with the decision-making component, because the licensee failed use conservative assumptions in decision making when performing the spent fuel pool refueling machine surveillance test over the spent fuel pool [H.1(b)] (Section 4OA3).

Cornerstone: Occupational Radiation Safety

- Green. A self-revealing noncited violation of Technical Specification 5.5.1.1 was identified for the failure of operations personnel to follow Procedure SO123-XX-5.1, “Work Clearance Management Issue, Release, and Tagging Modification,” Revision 22, to prepare and verify an adequate tagging boundary. Specifically, operations personnel implemented a change to the work clearance that subjected workers to hazards from contaminated water stored in the refueling water storage tank, without validating assumptions and drawings to determine the correct tank level was adequate as a tagging boundary. Consequently, on November 17, 2010, during implementation of Work Clearance Document WCD 30016930, an estimated 14,200 gallons of contaminated water drained into an area where people were working and resulted in a personnel contamination event.

  The performance deficiency was determined to be more than minor, and therefore a finding, because it is associated with the plant facilities/equipment attribute of the Occupational Radiation Safety Cornerstone and affects the associated cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine nuclear reactor operation. Using Manual Chapter 0609, “Significance

Determination Process," Appendix C, the finding is determined to have very low safety significance because the finding: (1) is not related to ALARA; (2) does not involve an overexposure; (3) did not constitute a substantial potential for overexposure; and (4) did not involve a situation where the licensee's ability to assess dose was compromised. The finding was determined to have a crosscutting aspect in the area of human performance, associated with the decision making component, because operations personnel failed to use conservative assumptions and formally validate and verify plant conditions and associated tagging boundaries [H.1(b)] (Section 4OA3).

B. Licensee-Identified Violations

Violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7.

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period at essentially full power. On September 27, 2010, train A heater drain pump (MP059) tripped resulting in a power reduction to 94 percent. After repairs, the unit returned to full power on October 15, 2010. On December 2, 2010, a tube leak in the fourth point low pressure heater resulted in a power reduction to 98 percent. After repairs, the unit returned to full power on December 10, 2010, and remained there for the duration of the inspection period.

Unit 3 began the inspection period at 94 percent due to a planned power coast down of one percent per day due to fuel depletion. On October 10, 2010, the unit was shut down for a scheduled refueling outage (U3C16) and steam generator replacement.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of the adverse weather procedures for seasonal extremes (e.g., extreme high temperatures, extreme low temperatures, or hurricane season preparations). The inspectors verified that weather-related equipment deficiencies identified during the previous year were corrected prior to the onset of seasonal extremes, and evaluated the implementation of the adverse weather preparation procedures and compensatory measures for the affected conditions before the onset of, and during, the adverse weather conditions.

During the inspection, the inspectors focused on plant-specific design features and the procedures used by plant personnel to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that plant personnel were identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- December 16-20, 2010, the inspectors completed a review of the licensee's readiness of the Unit 2, emergency diesel generators, and the Unit 2 and Unit 3, intake structure including the saltwater cooling system for water intrusion due to heavy rain and high winds

These activities constitute completion of one readiness for seasonal adverse weather sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

.2 Readiness to Cope with External Flooding

a. Inspection Scope

Since heavy rain and thunderstorms were forecast in the vicinity of the facility for October 18-20, 2010, the inspectors reviewed overall preparations/protection for the expected weather conditions. On October 20, 2010, the inspectors inspected Units 2 and 3, trains A and B, 1E and non-1E switchgear rooms because the functions of the systems located in those rooms could be affected by external flooding. The inspectors observed insulation, heat trace circuits, space heater operation, and weatherized enclosures to ensure operability of affected systems. The inspectors reviewed licensee procedures and discussed potential compensatory measures with control room personnel. The inspectors focused on plant management's actions for implementing the station's procedures for ensuring adequate personnel for safe plant operation and emergency response would be available. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one readiness for impending adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- November 15, 2010, Unit 3, spent fuel cooling system alignment
- December 09, 2010, Unit 3, emergency diesel generator train A start air system
- December 15, 2010, Unit 2, train A 4160V essential switchgear 2A04

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

Between December 16 and 20, 2010, the inspectors performed a complete system alignment inspection of the Unit 2 saltwater cooling system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one complete system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- October 5, 2010, Unit 2, safety equipment building rooms 6 through 14 and 16 through 26
- October 20, 2010, Unit 3, containment building
- November 17-18, 2010, Unit 3, safety equipment cable and auxiliary feedwater pipe tunnels
- November 30, 2010 and December 9, 2010, Unit 3, safety equipment building (-)15'-6" to 8'-0" (Rooms 7-14 and 16-18 and 21-26)
- December 9-10, 2010, Units 2 and 3, auxiliary building (-)9, 30 and 50 foot elevations

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On December 23, 2010, the inspectors observed a fire brigade activation in which the licensee simulated a fire in the Restricted Holding Area of the South Yard Facility. The observation evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of preplanned strategies; (9) adherence to the preplanned drill scenario; and (10) drill objectives.

These activities constitute completion of one annual fire-protection inspection sample as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the UFSAR, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment

- November 17, 2010, Unit 3, cable tunnel

These activities constitute completion of one flood protection measures inspection sample as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

.1 Inspection Activities Other Than Steam Generator Tube Inspection, Pressurized Water Reactor Vessel Upper Head Penetration Inspections, and Boric Acid Corrosion Control (71111.08-02.01)

a. Inspection Scope

The inspectors observed 4 nondestructive examination activities and reviewed 14 nondestructive examination activities that included 3 types of examinations. The licensee did not identify any relevant indications accepted for continued service during the nondestructive examinations.

The inspectors directly observed the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Emergency Core Cooling System	24” Schedule 40S Elbow to Pipe (03-065-310)	Ultrasonic Testing/ Penetrant Testing
Auxiliary Feedwater System 1305	18” Buttweld “NA” DM Weld @ Reactor Steam Generator Nozzle (03-044-010)	Ultrasonic Testing/ Penetrant Testing

The inspectors reviewed records for the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Reactor Coolant System	Safe End to Elbow Weld (03-008-002)	Ultrasonic Testing/ Penetrant Testing
Safety Injection	Safety Injection Nozzle to Safe End (03-009-012)	Ultrasonic Testing/ Penetrant Testing
Low Pressure Safety Injection (1204)	3” Schedule 160 Pipe to Valve (03-069-2910)	Ultrasonic Testing/ Penetrant Testing
Low Pressure Safety Injection (1204)	3” Schedule 160 Pipe to Valve (03-069-1010)	Ultrasonic Testing/ Penetrant Testing
Low Pressure Safety Injection (1204)	8” Schedule 140 Valve to Pipe (03-018-430)	Ultrasonic Testing
Low Pressure Safety Injection (1301)	6” Schedule 80 Penetration to Pipe (03-048-330)	Ultrasonic Testing/ Magnetic Particle

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Low Pressure Safety Injection (1301)	6” Schedule 80 Pipe to Elbow (03-048-340)	Ultrasonic Testing/ Magnetic Particle
Low Pressure Safety Injection (1301)	6” Schedule 80 Elbow to Elbow (03-048-350)	Ultrasonic Testing/ Magnetic Particle

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with the ASME Code requirements and applicable procedures. The inspectors also verified the qualifications of all nondestructive examination technicians performing the inspections were current.

The inspectors observed two welds and reviewed one weld on the reactor coolant system pressure boundary.

The inspectors directly observed a portion of the following welding activities:

SYSTEM	WELD IDENTIFICATION	WELD TYPE
Reactor Coolant System	P003-E, 30” Inner Diameter Coldleg (03-010-017)	Auto Gas Tungsten Arc Welding
Reactor Coolant System	BQ, 18” Steam Generator E088 Main Feedwater	Machine Gas Tungsten Arc Welding

The inspectors verified, by review, that the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code, Section IX, requirements. The inspectors also verified, through observation and record review, that essential variables for the welding process were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.01.

b. Findings

No findings were identified.

.2 Vessel Upper Head Penetration Inspection Activities (71111.08-02.02)

a. Inspection Scope

The inspectors reviewed the results of licensee personnel's visual inspection of pressure-retaining components above the reactor pressure vessel head to verify that there was no evidence of leaks or boron deposits on the surface of the reactor pressure vessel head or related insulation. The inspectors verified that the personnel performing the visual inspection were certified as Level II or Level III VT-2 examiners. Specific documents reviewed during this inspection are listed in the attachment.

SYSTEM	COMPONENT / WELD IDENTIFICATION	EXAMINATION TYPE
Reactor Coolant System	Penetrations 92 through 101	Eddy Current/Ultrasonic Testing
Reactor Coolant System	CEDM 57, 32, and 64	Penetrant Testing

These actions constitute completion of the requirements for Section 02.02.

b. Findings

No findings were identified.

.3 Boric Acid Corrosion Control Inspection Activities (71111.08-02.03)

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's boric acid corrosion control program for monitoring degradation of those systems that could be adversely affected by boric acid corrosion. The inspectors reviewed the documentation associated with the licensee's boric acid corrosion control walkdown as specified in Procedure SO23-V-8.15, "Containment Boric Acid Leak Inspection," Revision 2, and SO23-XV-85, "Boric Acid Corrosion Control Program (BACCP)," Revision 6. The inspectors also reviewed the visual records of the components and equipment. The inspectors verified that the visual inspections emphasized locations where boric acid leaks could cause degradation of safety-significant components. The inspectors reviewed six engineering evaluations for those components where boric acid was identified to assure that the ASME Code wall thickness limits were properly maintained. The evaluations were reviewed for the causes and corrective actions. The inspectors confirmed that the corrective actions performed for evidence of boric acid leaks were consistent with requirements of the ASME Code. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.03.

b. Findings

No findings were identified.

.4 Steam Generator Tube Inspection Activities (71111.08-02.04)

a. Inspection Scope

The licensee replaced the steam generators during Refueling Outage U3R16.

These actions constitute completion of the requirements of Section 02.04.

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems (71111.08-02.05)

a. Inspection Scope

The inspectors reviewed five condition reports which dealt with inservice inspection activities and found the corrective actions were appropriate. The specific condition reports reviewed are listed in the documents reviewed section. From this review the inspectors concluded that the licensee has an appropriate threshold for entering inservice inspection issues into the corrective action program and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying industry operating experience. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements of Section 02.05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Quarterly Review

a. Inspection Scope

On October 7, 2010, the inspectors observed a crew of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction

- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to preestablished operator action expectations and successful critical task completion requirements. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one quarterly licensed-operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Biennial Inspection

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination.

a. Inspection Scope

To assess the performance effectiveness of the licensed operator requalification program, between August 2 and 6, 2010, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors interviewed eight licensee personnel, consisting of four operators and four instructors, to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written exams and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included two job performance measures and three scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of eleven licensed operators for conformance to license conditions and the licensee's system for tracking qualifications and records of license reactivation for three operators.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors", Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator fidelity and existing logs of simulator deficiencies.

The inspectors completed one inspection sample of the biennial licensed operator requalification program.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- October 6, 2010, Unit 2, saltwater cooling pump high delta pressure
- November 22-23, 2010, Units 2 and 3, overall assessment of the licensee's response to degraded performance issues involving safety significant systems
- December 6-7, 2010, Unit 2, containment isolation system performance criteria exceeded due to gross leakage in mini purge exhaust isolation
- December 15, 2010, Unit 3, boric acid impact to auxiliary feedwater tunnel due to unplanned draining of refueling storage tank

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)

- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. The assessment included interviewing twelve personnel, focusing on the effectiveness of their training and qualification plans, as well as the effectiveness of the corrective action program to address and improve deficiencies in the performance of maintenance on safety-related equipment. The assessment also included evaluating the improvement of maintenance training facilities for maintenance departments taking place at the facility's MESA training complex. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- October 8-9, 2010, Unit 3, reserve auxiliary transformer 3XR3 jackbus disconnect 3D004 operation
- November 5-12, 2010, Unit 3, offsite power cross-tied to Unit 2 emergency diesel generator

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- October 4, 2010, Unit 3, train A emergency diesel generator, excessive leakage from generator bearings
- October 7, 2010, Unit 3, oil leak on emergency diesel generator 3G002
- October 26, 2010, Unit 3, refueling machine encoder failures during core offload
- November 15, 2010, Unit 3, operability of inverter 3Y004 with degraded undervoltage trip lever as documented in Nuclear Notification NN 201168011

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to the licensee personnel's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the

licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four operability evaluations inspection samples as defined in Inspection Procedure 71111.15-04

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Modifications

a. Inspection Scope

To verify that the safety functions of important safety systems were not degraded, The inspectors reviewed the following temporary modifications:

- November 15, 2010, Unit 3, temporary containment opening
- November 30, 2010, Unit 3, outside and inside lift system, foundations, runway and work platforms

The inspectors reviewed the temporary modifications and the associated safety-evaluation screening against the system design bases documentation, including the UFSAR and the technical specifications, and verified that the modification did not adversely affect the system operability/availability. The inspectors also verified that the installation and restoration were consistent with the modification documents and that configuration control was adequate. Additionally, the inspectors verified that the temporary modification was identified on control room drawings, appropriate tags were placed on the affected equipment, and licensee personnel evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

These activities constitute completion of two samples for temporary plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings were identified.

.2 Permanent Modifications

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, flow paths, pressure boundary, ventilation

boundary, structural, process medium properties, licensing basis, and failure modes for the permanent modifications listed below.

- December 1, 2010, Units 2 and 3, installation of pulsation dampeners on instrument tubing

The inspectors reviewed key parameters associated with energy needs, materials, replacement components, timing, heat removal, control signals, equipment protection from hazards, operations, flow paths, pressure boundary, ventilation boundary, structural, process medium properties, licensing basis, and failure modes for the permanent modification identified as pulsation dampeners on safety injection instrument tubing.

The inspectors verified that modification preparation, staging, and implementation did not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; postmodification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur; systems, structures and components' performance characteristics still meet the design basis; the modification design assumptions were appropriate; the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample for permanent plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following postmaintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- October 5-12, 2010, Unit 2, train A emergency diesel generator post maintenance testing for the data acquisition system

- October 6, Unit 2, emergency diesel generator 2MG003 surveillance testing following the removal of test equipment

- October 6, Unit 3, fuel handling building air cleanup system test following heater repair

- October 28, 2010, Unit 2, local leak rate test on containment purge exhaust A060 isolation valve 2HV9951 after t-ring maintenance

- November 2, 2010, Units 2 and 3, protected area hand geometry units

- November 19, 2010, Unit 3, outside lift system lifting jack functional testing

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed

- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the Unit 3 refueling outage (U3R16) and steam generator replacement that commenced on October 10, 2010, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. NRC Inspection Report 05000362/2010009 will document inspections and findings associated with steam generator replacement. During the refueling outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense in depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service

- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing

- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error

- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met, and controls over switchyard activities, including use and removal of temporary services related to steam generator replacement activities

- Monitoring of decay heat removal processes, systems, and components

- Verification that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system

- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss

- Controls over activities that could affect reactivity

- Controls of tendon installation and preloads including pre-stress sequencing and grease filling

- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage

- Licensee identification and resolution of problems related to refueling outage activities

- Equipment Hatch Removal and Restoration, including activities associated with containment access

Specific documents reviewed during this inspection are listed in the attachment.

Refueling outage U3R16 was still in progress at the end of this inspection period. Consequently, these activities constitute only partial completion of one refueling outage and other outage inspection samples as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- August 30, 2010, Unit 3, Procedure SO23-3-3.23.1, "Diesel Generator Refueling Interval Test," Revision 37
- September 29, 2010, Unit 3, reactor coolant system sample and analysis

- October 6, 2010, Unit 3, fuel pool gate seal test
- October 6, 2010, Unit 2, inservice testing of emergency diesel generator fuel oil transfer pumps P094 and P095
- October 7, 2010, Unit 3, inservice testing of the high pressure safety injection pump P017
- October 7, 2010, Unit 3, train B main steam safety valve testing
- October 8, 2010, Unit 3, inservice test of turbine driven auxiliary feedwater pump P-140
- December 1, 2010, Unit 2, normal containment sump level increase monitoring

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of eight surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

1. The inspector performed in-office and on-site reviews of the San Onofre Nuclear Generating Station Emergency Plan, Revision 29, and Emergency Plan Implementing Procedure EPIP SO123-VIII-1, "Recognition and Classification of Emergencies," Revision 31, both submitted August 25, 2010. These revisions,

   - Changed the name of the "Emergency News Center" emergency response facility to the "Joint Information Center"
   - Added emergency action level initiating condition F4-1(b), "An adversary force has caused failure of Spent Fuel Cooling Systems and imminent fuel damage is likely for a freshly off-loaded reactor core in poll." The NRC had previously communicated the technical basis for this initiating condition in Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events, dated July 18, 2005
   - Update letters of agreement with offsite organizations

   These revisions were compared to their previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1,

and to the standards in 10 CFR 50.47(b) to determine if the revisions adequately implemented the requirements of 10 CFR 50.54(q). These reviews were not documented in safety evaluation reports and did not constitute approvals of licensee-generated changes; therefore, these revisions are subject to future inspection. The specific documents reviewed during this inspection are listed in the attachment.

2. The inspector performed an in-office review of the San Onofre Nuclear Generating Station Emergency Plan, Revision 30. This revision:

   - Revised references to the licensee's emergency action level scheme from NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, to Nuclear Energy Institute Report 99-01, "Methodology for Development of Emergency Action Levels," Revision 5. The NRC approved the licensee's implementation of an NEI 99-01 Revision 5 emergency action level scheme in a Safety Evaluation Report dated March 22, 2010

   - Added California State Parks as a participating offsite agency

   - Reassigned the following responsibilities from the Manager, Site Support Services, to the Manager, Site Emergency Preparedness, or the Manager, Offsite Emergency Planning:

     - Coordination with the Manager, Nuclear Training Division to ensure all personnel receive appropriate Emergency Plan training

     - Coordination of drill schedules with offsite emergency response organizations

     - Annual certification of letters of agreement with local jurisdictions

     - Coordination of comments from drills held offsite

     - Conduct of the annual contaminated injured person drill and the offsite Field Team Communications drill

     - Coordination of biennial emergency exercise activities

   - Replaced the South Coast Medical Center with Mission Hospital of Laguna Beach

   - Replaced Mercy Air Services with Air Methods

   - Added the following definitions to the emergency plan: actuate, affecting safe shutdown, available, can/cannot be determined, can/cannot be maintained above/below, can/cannot be restored above/below, civil disturbance, close, confinement boundary, confirm, containment closure, contiguous, control, enter, EPA PAG(s), establish, evacuate, exceeds, exclusion area boundary, exist explosion, extinguished, extortion, faulted, failure, fire, fission product barrier(s), hostile force, if, immediately dangerous to life and health, imminent, independent spent fuel storage installation, indicate, initiate, initiating condition, injection,

inoperable, intruder, lower, lower flammability limit, maintain, monitor, normal plant operations, notify, open, operable, perform, primary system, projectile, reduced inventory condition, remove, report, require, restore, rise, ruptured, sabotage, safe plant shutdown, safe shutdown system, sample, security condition, shutdown safety functions, shutdown, significant transient, site boundary, strike action, sustained, trip, unavailable, uncontrolled, unisolable, unplanned, until, valid, vent, verify, visible damage, and vital area

- Revised the definitions of Alert, Emergency Action Level, General Emergency, Hostile Action, Notification of Unusual Event, Owner Controlled Area, Protected Area, and Site Area Emergency

- Removed references to the decommissioned Unit 1

- Made other minor editorial corrections and title changes

This revision was compared to its previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q). This review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection.

These activities constitute completion of three samples as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on September 22, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator and technical support center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2RS01 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

This area was inspected to: (1) review and assess licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities and the implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures, (2) verify the licensee is properly identifying and reporting Occupational Radiation Safety Cornerstone performance indicators, and (3) identify those performance deficiencies that were reportable as a performance indicator and which may have represented a substantial potential for overexposure of the worker.

The inspectors 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 inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed walkdowns of various portions of the plant, performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation reported by the licensee in the Occupational Radiation Safety Cornerstone
- The hazard assessment program, including a review of the license's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels
- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions
- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability
- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage, and contamination controls; the use of electronic dosimeters in high noise areas; dosimetry placement; airborne

radioactivity monitoring; controls for highly activated or contaminated materials (nonfuel) stored within spent fuel and other storage pools; and posting and physical controls for high radiation areas and very high radiation areas

- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure controls since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.01-05.

b. Findings

No findings were identified.

2RS02 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

This area was inspected to assess performance with respect to maintaining occupational individual and collective radiation exposures ALARA. The inspectors 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 inspectors interviewed licensee personnel and reviewed the following items:

- Site-specific ALARA procedures and collective exposure history, including the current 3-year rolling average, site-specific trends in collective exposures, and source-term measurements

- ALARA work activity evaluations/postjob reviews, exposure estimates, and exposure mitigation requirements

- The methodology for estimating work activity exposures, the intended dose outcome, the accuracy of dose rate and man-hour estimates, and intended versus actual work activity doses and the reasons for any inconsistencies

- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry

- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas

- Audits, self-assessments, and corrective action documents related to ALARA planning and controls since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.02-05.

b. Findings

No findings were identified.

2RS06 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

a. Inspection Scope

This area was inspected to: (1) ensure the gaseous and liquid effluent processing systems are maintained so radiological discharges are properly mitigated, monitored, and evaluated with respect to public exposure; (2) ensure abnormal radioactive gaseous or liquid discharges and conditions, when effluent radiation monitors are out-of-service, are controlled in accordance with the applicable regulatory requirements and licensee procedures; (3) verify the licensee's quality control program ensures the radioactive effluent sampling and analysis requirements are satisfied so discharges of radioactive materials are adequately quantified and evaluated; and (4) verify the adequacy of public dose projections resulting from radioactive effluent discharges. The inspectors used the requirements in 10 CFR Part 20; 10 CFR Part 50, Appendices A and I; 40 CFR Part 190; the Offsite Dose Calculation Manual, and licensee procedures required by the Technical Specifications as criteria for determining compliance. The inspectors interviewed licensee personnel and reviewed and/or observed the following items:

- Radiological effluent release reports since the previous inspection and reports related to the effluent program issued since the previous inspection, if any
- Effluent program implementing procedures, including sampling, monitor setpoint determinations and dose calculations
- Equipment configuration and flow paths of selected gaseous and liquid discharge system components, filtered ventilation system material condition, and significant changes to their effluent release points, if any, and associated 10 CFR 50.59 reviews
- Selected portions of the routine processing and discharge of radioactive gaseous and liquid effluents (including sample collection and analysis)
- Controls used to ensure representative sampling and appropriate compensatory sampling
- Results of the interlaboratory comparison program
- Effluent stack flow rates
- Surveillance test results of technical specification-required ventilation effluent discharge systems since the previous inspection

- Significant changes in reported dose values, if any
- A selection of radioactive liquid and gaseous waste discharge permits
- Part 61 analyses and methods used to determine which isotopes are included in the source term
- Offsite dose calculation manual changes, if any
- Meteorological dispersion and deposition factors
- Latest land use census
- Records of abnormal gaseous or liquid tank discharges, if any
- Groundwater monitoring results
- Changes to the licensee's written program for identifying and controlling contaminated spills/leaks to groundwater, if any
- Identified leakage or spill events and entries made into 10 CFR 50.75 (g) records, if any, and associated evaluations of the extent of the contamination and the radiological source term
- Offsite notifications~~,~~ and reports of events associated with spills, leaks, or groundwater monitoring results, if any
- Audits, self-assessments, reports, and corrective action documents related to radioactive gaseous and liquid effluent treatment since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample, as defined in Inspection Procedure 71124.06-05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the third quarter 2010 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Safety System Functional Failures (MS05)

a. Inspection Scope

The inspectors sampled licensee submittals for the safety system functional failures performance indicator for Units 2 and 3 for the period from the fourth quarter 2009 through the third quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73." The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports, and NRC integrated inspection reports for the period of October 2009 through September 2010 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two safety system functional failures samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for Units 2 and 3, for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee operator logs, reactor coolant system leakage tracking data, issue reports, event reports and NRC integrated inspection reports for the period of July 2009 through June 2010, to validate the accuracy of the submittals. The inspectors also reviewed the licensee issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator

and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two reactor coolant system specific activity samples as defined by IP 71151-05.

b. Findings

No findings were identified.

.4 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

Cornerstone: Occupational Radiation Safety

The inspectors reviewed performance indicator data for the third quarter 2009 through the second quarter 2010. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed corrective action program records associated with high radiation area (greater than 1 rem/hr) and very high radiation area nonconformances. The inspectors reviewed radiological controlled area exit transactions greater than 100 mrem. The inspectors also conducted walkdowns of high radiation areas (greater than 1 rem/hr) and very high radiation area entrances to determine the adequacy of the controls of these areas.

These activities constitute completion of the occupational exposure control effectiveness sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (PR01)

a. Inspection Scope

Cornerstone: Public Radiation Safety

The inspectors reviewed performance indicator data for the third quarter 2009 through the second quarter 2010. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed the licensee's corrective action program records and selected individual annual or special reports to identify potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose.

These activities constitute completion of the radiological effluent technical specifications/offsite dose calculation manual radiological effluent occurrences sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

.3 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting the issues listed below. 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.

- September through November 2010, Units 2 and 3, adequacy of significance level screening for conditions that result in non-routine reporting as documented in Nuclear Notification NN 201122165

- November 15, 2010, Unit 3, Class 1E inverter 3Y004 supply breaker failure as documented in Nuclear Notification NN 201168011

These activities constitute completion of two in-depth problem identification and resolution samples as defined in Inspection Procedure 71152-05.

b. Findings

Introduction. The inspectors identified two examples of a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of licensee personnel to follow the requirements of corrective action program procedures for nuclear notification significance screening.

Description. Nuclear Notification NN 201168011 described the failure of Unit 3 Class 1E inverter 3Y004 supply breaker that was identified on October 23, 2010. The nuclear notification concluded that the inverter was inoperable in the immediate operability

determination and recommended that an extent of condition be performed to ensure that other operable redundant equipment was not subject to the same failure mechanism. The inspectors reviewed Nuclear Notification NN 201168011 on November 15, 2010, and noted that the nuclear notification was screened as Significance Level 4 and no extent of condition had been performed. Procedure SO123-XV-50.CAP-2, "SONGS Nuclear Notification Screening," Revision 7, defined Significance Level 4 issues as low level problems that are typically closed to immediate actions taken or other follow up actions and no cause evaluation is generally pursued. Additionally, Procedure SO123-XV-50.CAP-2 lists Critical 'A' component failures as an example of Significance Level 2 problems, requiring consideration of a cause evaluation and timely extent of condition review. The inspectors determined that the Class 1E inverter 3Y004 supply breaker failure constituted a Critical 'A' component failure and met the criteria for Level 2 significance. However, because Nuclear Notification NN 201168011 was screened as Significance Level 4, actions commensurate with the safety significance of the problem were not taken. Licensee personnel initiated Nuclear Notification NN 201203374 to document the inspectors' concerns and reevaluate the actions taken for the supply breaker failure.

Procedure SO123-XV-50.CAP-2, "SONGS Nuclear Notification Screening," Revision 7, required, in part, that "Conditions resulting in non-routine reporting to the NRC, except for invalid actuations reported via the Emergency Notification System, per 10 CFR 50.73 (a)(1)," be classified as a Significance Level 1 problem. The inspectors observed that 7 of the last 10 conditions that resulted in licensee event reports, submitted per 10 CFR 50.73 (a)(1), were classified at a significance level lower than Significance Level 1. The inspectors concluded that the failure to properly classify significant conditions adverse to quality may impact the evaluation adequacy to ensure that resolutions address the causes and extent of conditions. Further, the improper classification could also lead to the failure to meet the reporting requirements of 10 CFR 50.73. Licensing personnel initiated Nuclear Notification NN 201122165 and performed an apparent cause evaluation to correct the programmatic deficiency.

Analysis. The failure of the licensee to follow corrective action program procedures to appropriately screen nuclear notifications to the appropriate significance level classification was a performance deficiency. The performance deficiency is more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern by not evaluating problems commensurate with their safety significance, such that the resolutions address the causes and extent of conditions, and is therefore a finding. The finding is associated with the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding was determined to have a crosscutting aspect in the area of problem identification and resolution, associated with the corrective action program, in that the licensee failed to thoroughly evaluate problems

such that the resolutions address causes and extent of conditions, and failed to properly classify, prioritize, and evaluate for operability and reportability conditions adverse to quality [P.1(c)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and be accomplished in accordance with these instructions, procedures, or drawings. Procedure SO123-XV-50.CAP-2, "SONGS Nuclear Notification Screening," Revision 7, provided the corrective action program requirements to classify conditions adverse to quality for significance. Contrary to the above, between May 2009 and December 2010, licensee personnel failed to accomplish an activity affecting quality in accordance with prescribed instructions, procedures, or drawings. Specifically, licensee personnel failed to follow Procedure SO123-XV-50.CAP-2 to properly screen for significance conditions that result in non-routine reporting to the NRC and Critical A component failures. In response to the inspectors' question, the licensee initiated Nuclear Notifications NNs 201203374 and 201122165 to perform appropriate evaluations of the corrective action programmatic issues. Because this violation is of very low safety significance and has been entered into the licensee's corrective action program this violation is being treated as a noncited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000361; 05000362/2010005-01, "Failure to Appropriately Classify Conditions Adverse to Quality for Significance."

.4 Licensee's Actions to Resolve Cross-Cutting Themes

a. Inspection Scope

This team inspection was conducted as authorized by the NRC's Executive Director for Operations in a deviation to the reactor oversight program for San Onofre Nuclear Generating Station (ML 1018805400)

The inspectors evaluated the effectiveness of the licensee's corrective actions addressing the problem identification and resolution cross-cutting themes identified by the NRC in the Midcycle Performance Review and Inspection Plan, dated September 1, 2010. Specifically, the inspectors evaluated the licensee's corrective actions to ensure the licensee implements a corrective action program with a low threshold for identifying issues [P.1(a)], thoroughly evaluates problems such that the resolutions address causes and extent of conditions, as necessary [P.1(c)], and takes appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity [P.1(d)].

The inspectors reviewed the licensee's corrective actions specified in the licensee's letter to the NRC dated October 12, 2010, Closure Review Board documentation, and metrics associated with corrective actions and evaluations. The inspectors independently reviewed the revised programs and procedures and verified the corrective actions were maintained and appropriately anchored for long-term sustainability. The inspectors observed a Closure Review Board meeting where the licensee discussed the documentation, objective evidence, and sustainability of the corrective actions.

b. Observations and Findings

No findings were identified.

To address the cross-cutting theme of P.1(a), the licensee, in part, made changes to the corrective action program to make it more accessible to the workers and easier to use, established a long-term communication strategy to inform the workers of the need to promptly identify and report problems, and enhanced training in the use of the corrective action program. To address the cross-cutting theme of P.1(c), the licensee, in part, made changes to its procedure for functional assessments and operability determinations to incorporate improvements identified through industry benchmarking, developed and maintained operability determination experts through specialized training, established and maintained at least 12 root cause evaluation qualified team leaders distributed across various organizational disciplines, and established corrective action review board training for members. To address the cross-cutting theme of P.1(d), the licensee, in part, revised the corrective action program implementing procedure to redefine causal analysis timeliness, required the Corrective Action Review Board to review weekly the list of open causal analyses, and made the corrective action program manager responsible for ensuring adverse trends are appropriately identified and lessons-learned provided.

The team verified the corrective actions were completed, the changes were maintained, and the changes were appropriately anchored for sustainability. The inspectors independently verified the effectiveness of a sample of the licensee's corrective actions. For example, the inspectors attended action review committee and management review committee meetings to ensure proper screening and prioritization of conditions adverse to quality were conducted. Also, the inspectors interviewed a sample of workers and verified the workers knew how to access the necessary forms to identify problems, including the location of hard copy forms, and that the workers were willing to identify problems.

The inspectors reviewed the licensee's metrics associated with timely corrective actions and evaluations. In the majority of cases, the inspectors concluded the metrics indicated that the station made sustained and measurable improvement. In other cases, the inspectors could not make any conclusions since the corrective actions were recently implemented and it was too early to tell if these corrective actions would lead to measurable improvement. The inspectors evaluated the effect of the licensee's corrective actions by reviewing the number of findings per twelve month assessment period. As of the 2010 midcycle review (for the period of July 1, 2009, through June 30, 2010), the NRC had identified seven findings associated with P.1(a), six findings associated with P.1.(c), and three findings associated with P.1.(d). As of the 2010 end of cycle review, (for the period of January 1, 2010, through December 31, 2010) the NRC had identified four findings associated with P.1(a), four findings associated with P.1(c), and no findings associated with P.1(d). After considering the decline in the number of findings, along with the information gathered during the review of the corrective actions, the inspectors concluded the licensee had demonstrated sustained and measurable improvement in these areas, and the improvement was a result of the corrective actions taken by the licensee.

4OA3 Event Follow-up (71153)

.1 Event Follow Up

a. Inspection Scope

The inspectors reviewed the below listed events for plant status and mitigating actions to: (1) provide input in determining the appropriate agency response in accordance with Management Directive 8.3, "NRC Incident Investigation Program"; (2) evaluate performance of mitigating systems and licensee actions; and (3) confirm that the licensee properly classified the event in accordance with emergency action level procedures and made timely notifications to NRC and state/governments, as required.

- November 1, 2010, Unit 3, unexpected loss of non-1E uninterruptible power supply system due to failure of inverter 3Y012
- November 17, 2010, Unit 3, refueling water storage tank drain event due to equipment tagging error
- November 24, 2010, Unit 3, dropped load beam in the spent fuel pool

Documents reviewed by the inspectors are listed in the attachment.

These activities constitute completion of three inspection samples as defined in Inspection Procedure 71153-05.

b. Findings

1. Refueling Water Storage Tank Drain

Introduction. A Green self-revealing noncited violation of Technical Specification 5.5.1.1 was identified for the failure of operations personnel to follow Procedure SO123-XX-5.1, "Work Clearance Management Issue, Release, and Tagging Modification," Revision 22, to prepare and verify an adequate tagging boundary.

Description. On November 17, 2010, during implementation of unplanned modification Work Control Document WCD 30016930 for Work Clearance Application WCA 70004298, an estimated 14,200 gallons of contaminated water drained from the Unit 3 refueling water storage tank after opening refueling water storage tank gravity feed to charging Valve S1219MU067. The refueling water storage tank water drained into an area where personnel were working and resulted in a personnel contamination event. The contaminated water was contained within the auxiliary feedwater tunnel with no release to the environment.

Earlier in refueling outage U3R16, Valve S1219MU067 was tagged closed by Work Control Document WCD 30005658 to establish the boundary to replace piping downstream of the refueling water storage tank. The original intent of the work clearance document was to: (1) drain the refueling water storage tank to a level below the elevation at which the pipe associated with Valve S1219MU067 penetrated the tank; and (2) tag Valve S1219MU067 closed to establish the boundary for work. Instead, due

to a change in the work plan, the refueling water storage tank was only partially drained and Valve S1219MU067 was tagged closed prior to reaching the intended level. This change from the original intentions of Work Control Document WCD 30005658 was not adequately communicated, resulting in the incorrect assumption that refueling water storage tank level was below the elevation where the pipe penetrated the tank.

On November 15, an unplanned tagging modification was initiated to perform additional work on Valve S1219MU067 that was not addressed in the original work clearance application. The tagging modification was prepared and verified to remove the tag from Valve S1219MU067 and open the valve to perform corrective maintenance. Due to the inadequate communications following changes to the original work plan, operations personnel believed that the tank had been drained per the original intent of Work Control Document WCD 30005658 and that draining using that method resulted in a 7 percent indicated level.

On November 17, operations personnel verified that tank level was at 7 percent since they believed this level was below the elevation where the pipe penetrated the tank. While opening Valve S1219MU067, refueling water storage tank water drained through an opening in the downstream piping into the auxiliary feedwater tunnel and revealed that the assumptions associated with the tank level were incorrect. Operations personnel closed Valve S1219MU067 once they became aware of the unexpected leakage.

The inspectors reviewed Procedure SO123-XX-5.1, which contained the requirements for performing tagging modifications including the preparation and verification of tagging boundaries. The inspectors observed that Step 6.5.1, stated in part that, “A tagging modification **MAY** be implemented if the change does **NOT** subject any person to hazard from any energy source present when the change is made.” Further, Step 6.5.2, stated that, “Controlled drawings **SHALL** be used in the preparation and verification of the WCD/WCA work packages.” The inspectors also noted that Step 6.5.2 had been previously incorporated into the procedure as a corrective action to prevent recurrence of a significant tagging event that occurred during Unit 2 refueling outage U2R16. The inspectors questioned operations personnel whether Procedure SO123-XX-5.1, Step 6.5 was followed, due to the importance of the requirements, and since it appeared that the tagging error that resulted in the November 17 event was related to the preparation and verification portion of the tagging modification process. Based on the inspectors’ discussions with operations management and review of the sequence of events, the licensee concluded that operations personnel used incorrect assumptions to prepare and verify the tagging modification rather than apply the rigor necessary to determine the correct tank level for an adequate tagging boundary.

Analysis. The failure of operations personnel to follow the procedure to prepare an adequate tagging boundary was a performance deficiency. The performance deficiency is determined to be more than minor because it is associated with the plant facilities/equipment attribute of the Occupational Radiation Safety Cornerstone and affects the associated cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation, and is therefore a finding. Using Manual Chapter 0609, “Significance Determination Process,” Appendix C, the finding is

determined to have very low safety significance (Green) because the finding: (1) is not related to ALARA; (2) does not involve an overexposure; (3) did not constitute a substantial potential for overexposure; and (4) did not involve a situation where the licensee's ability to assess dose was compromised. The finding was determined to have a crosscutting aspect in the area of human performance, associated with the decision making component, because operations personnel failed to use conservative assumptions and formally validate and verify plant conditions and associated tagging boundaries [H.1(b)].

Enforcement. Technical Specification 5.5.1.1 requires, in part, that procedures be established, implemented, and maintained covering the activities specified in Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," of Regulatory Guide 1.33, "Quality Assurance Program Requirements," dated February 1978. Appendix A, Item 1.c, requires administrative procedures for equipment control, including locking and tagging. Procedure SO123-XX-5.1, "Work Clearance Management Issue, Release, and Tagging Modification," Revision 22, provided the process required for the issue, release, and modification of equipment tagging. Procedure SO123-XX-5.1, Step 6.5.1, required in part that, "A tagging modification **MAY** be implemented if the change does **NOT** subject any person to hazard from any energy source present when the change is made." Step 6.5.2, required that, "Controlled drawings **SHALL** be used in the preparation and verification of the WCD/WCA work packages." Contrary to the above, on November 15, 2010, operations personnel failed to follow Procedure SO123-XX-5.1 during the preparation and verification of work clearance documents associated with a tagging modification. Specifically, on November 17, 2010, operations personnel failed to follow Procedure SO123-XX-5.1, Step 6.5, and performed unplanned modification Work Clearance Document WCD 30016930 when the change subjected workers to hazards from contaminated water stored in the refueling water storage tank. Additionally, operations personnel used incorrect assumptions to prepare and verify the tagging modification rather than use adequate controlled drawings to determine the correct tank level for an adequate tagging boundary. Consequently, on November 17, 2010, during implementation of Work Clearance Document WCD 30016930, an estimated 14,200 gallons of contaminated water drained into an area where personnel were working and resulted in a personnel contamination event. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notifications NNs 201246892 and 201205637, this violation is being treated as a noncited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000362/2010005-02, "Failure to Follow Procedure for Modifying Work Clearance Applications."

2. Dropped Load Beam in Spent Fuel Pool

Introduction. A self-revealing Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the failure of licensee personnel to follow procedures associated with foreign material exclusion controls, which resulted in a failure to positively control a load beam over the spent fuel pool.

Description. On November 24, 2010, reactor maintenance craft were performing Procedure SO23-I-2.56, "Spent Fuel Handling Machine Surveillance," Revision 6, that

stated, in part, “Foreign Material exclusion controls **SHALL** be maintained in accordance with SO123-I-1.18, Foreign Material Exclusion (FME) Control.” Procedure SO123-I-1 18, step 2.6 stated, “Cranes and hoists that could pass into or over the pools and overhead and adjacent platforms, crane ways, and walkways **SHOULD** be inspected for non-fail-safe items before use,” and step 2.7 stated, “Items not lanyarded **SHOULD** be **POSITIVELY CONTROLLED** at all times.”

The weekly surveillance test on the spent fuel pool handling machine was to ensure the spent fuel pool handling machine hoist overload switch was functional prior to fuel movement in the spent fuel pool. As part of the surveillance test, a load beam, 40 pounds and 4 feet in length, is used to verify that the hoist overload switch will engage when performing fuel movement in the spent fuel pool.

Utilizing Procedure SO23-I-2.56, “Spent Fuel Handling Machine Surveillance,” a decision was made to position the spent fuel pool refueling machine over the south side spent fuel pool racks because other machinery was in the typical testing location. Once the refueling machine was in position, the load beam was inappropriately rigged to the spent fuel pool refueling machine hoist hook without being inspected to be fail-safe and positively controlled to ensure the beam could not drop into the spent fuel pool. The load beam was lowered beneath the refueling machine, placed perpendicular to the refueling machine bridge using a ½ inch thick tag line, and lifted upwards in order to perform the testing. During the lift, the load beam became detached from the spent fuel pool refueling machine hoist hook. Subsequently, the tag line was dropped by the operator when the load beam fell into the spent fuel pool. Due to the design of the spent fuel racks, there was no damage to any of the fuel assemblies stored in the racks when the load beam impacted the spent fuel pool rack. The licensee has removed the load beam from the spent fuel pool and performed inspections to confirm that there was no fuel damage.

The inspectors immediately went to the spent fuel pool area to independently assess the situation and obtain more details concerning the status of the spent fuel assemblies. The inspectors also questioned and interviewed licensee personnel to ensure that the compensatory and corrective actions taken were adequate.

The licensee entered this issue into the corrective action program as Nuclear Notification NN 201217134. Subsequently, the licensee revised Procedure SO123-I-2.56, “Spent Fuel Handling Machine Surveillance,” to incorporate the requirements of Procedure SO123-I-1.18, “Foreign Material Exclusion (FME) Control.” Specifically, a tag line with a rating of approximately 5000 lbs will be attached to the load beam and a fixed object of sufficient strength to support the weight of the load beam and its momentum forces throughout the surveillance test. The licensee also added that the surveillance is not to be performed over the spent fuel pool racks.

Analysis. The failure to follow procedures for foreign material exclusion to positively control a load beam over the spent fuel pool while performing the spent fuel pool handling machine surveillance test was a performance deficiency. This performance deficiency was determined to be more than minor, and therefore a finding, because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the licensee personnel’s failure to implement appropriate foreign material

exclusion controls over the spent fuel pool to perform surveillance testing without positive control of foreign material in a Foreign Material Exclusion Zone 1 could impact structures, systems, or components associated with the spent fuel pool. The finding is associated with the Barrier Integrity Cornerstone and affects the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance (Green) because the finding: (1) does not result in loss of cooling to the spent fuel pool, whereby operator or equipment failures could preclude restoration of cooling prior to pool boiling; (2) does not result from fuel handling errors that caused damage to fuel clad integrity or a dropped assembly; and (3) do not result in a loss of spent fuel pool inventory greater than ten percent of spent fuel pool volume. The finding has a crosscutting aspect in the area of human performance associated with the decision-making component because the licensee failed use conservative assumptions in decision making when performing the spent fuel pool refueling machine surveillance test over the spent fuel pool [H.1(b)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Procedure SO123-I-1.18 "Foreign Material Exclusion (FME) Control", implements the requirements to ensure positive controls are in place for activities conducted over the spent fuel pool. Contrary to the above, on November 24, 2010, the licensee failed to adequately implement foreign material exclusion controls as required by procedure SO123-I-1.18. Because the finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NN 201217134, this violation is being treated as a noncited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000362/2010005-03, "Inadequate Control of Foreign Material over the Spent Fuel Pool during Surveillance Testing."

.2 Event Report Review

a. Inspection Scope

The inspectors reviewed the four below listed licensee event reports and related documents to assess: (1) the accuracy of the licensee event report: (2) the appropriateness of corrective actions; (3) violations of requirements; and (4) generic issues.

b. Observations and Findings

1. (Closed) Licensee Event Report 05000362/2009-005,"Wiring Error in Diesel Generator Circuit Results in Loss of Fire Isolation Capability"

On February 3, 2009, the licensee identified that a mis-wired fire isolation fuse had bypassed the fuse protection for the Unit 2 train A local emergency diesel generator control circuitry. In this condition, a hot short on the remote wiring could open circuit the control power fuse to the emergency diesel generator excitation circuitry and cause a

loss of the emergency diesel generator function. The wiring error could have impacted plant safety in the event of a fire in fire areas designated as being alternative shutdown areas, but would not have affected other normal and emergency modes of operation.

The licensee determined that the wiring error occurred during the installation of an upgraded electronic governor and digital reference units for the Unit 2 train A emergency diesel generator in September 2004. Corrective actions to address this error included correcting the wiring error and restoring the emergency diesel generator circuitry to the approved configuration. The licensee performed hourly fire watches in Unit 3 until July 2009 when the Unit 3 train A emergency diesel generator circuitry was confirmed to be wired properly.

This performance deficiency was more than minor, and therefore a finding, because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

The inspectors evaluated the significance of this finding using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because the performance deficiency affected fire protection defense-in-depth strategies involving post fire safe shutdown systems. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding since the performance deficiency involved alternative shutdown scenarios that led to control room abandonment. The analyst assessed each of the fire scenarios could have affected control of the emergency diesel generator and determined that the few scenarios that could have also disabled offsite power were low probability events. With offsite power available, the emergency diesel generator would not be required to mitigate the consequences of the fire. Therefore, the analyst determined qualitatively that the performance deficiency was of very low safety significance (Green).

This licensee-identified finding involved a violation of License Condition 2.C(14), "Fire Protection." The enforcement aspects of the violation are discussed in Section 4OA7. This licensee event report is closed.

2. (Closed) Licensee Event Report 05000361/2007-007,"Inoperable SFP Cooling Pumps Results in Loss of Safety Function"

   This issue was reviewed by the inspectors and results of the review are documented in Section 4OA2 of NRC Inspection Report 05000361; 05000362/2010002. A Severity Level IV noncited violation was identified and is documented as NCV 05000361/2010002-10, "Failure to Report a Safety System Functional Failure." No additional findings were identified during the review of this event as documented in the licensee event report. This licensee event report is closed.

3. (Closed) Licensee Event Report 05000361/2009-004,"Both Trains of Spent Fuel Pool Cooling Inoperable Results in a Loss of Safety Function"

   This issue was reviewed by the inspectors and results of the review are documented in Section 4OA2 of NRC Inspection Report 05000361; 05000362/2010002. A Severity

Level IV noncited violation was identified and is documented as NCV 05000361/2010002-09, "Failure to Notify the NRC Within Eight Hours of a Non-Emergency Event." No additional findings were identified during the review of this event as documented in the licensee event report. This licensee event report is closed.

4. (Closed) Licensee Event Report 05000362/2008-003,"Missed TS Completion Time Results in TS Violation"

The inspector reviewed the information the licensee provided to describe and analyze this event. On December 1, 2008, during Unit 3 startup following a refueling outage, maintenance personnel discovered that the required 31 day technical specification surveillance for station battery 3B010, was not performed within the allowed action times. Unit 3 entered Mode 4 on November 30, 2008, without having the completing the required 31 day surveillance, which was violation of Technical Specification 3.0.4. The required surveillance was successfully performed on December 1, 2008. This event was caused by a combination of an informal tracking process and inadequate procedure use. The licensee performed an extent of condition review and did not identify other examples of missed surveillances. The failure to meet surveillance test frequency is being treated as a minor violation because the subsequent surveillance was successfully performed and demonstrates that the equipment was capable of performing its safety function. This failure to comply with technical specification requirement constitutes a violation of minor significance that is not subject to enforcement action in accordance with NRC's Enforcement Policy. This licensee event report is closed.

4OA5 Other Activities

.1 Operations and Maintenance Team Inspection (71111.15, 71111.19, 71111.20, 71111.22, 71152)

This team inspection was conducted as authorized by the NRC's Executive Director for Operations in a deviation to the reactor oversight program for San Onofre Nuclear Generating Station (ML 1018805400)

a. Inspection Scope

The NRC conducted a team inspection to evaluate operations and maintenance activities from October 4 - 14, 2010. The team focused on procedure compliance as well as the adequacy of site procedures for SONGS Units 2 and 3. The team primarily reviewed in-process maintenance activities, observed operators in the control room for extended periods, and conducted staff interviews in the field. This approach supported the team's assessment of the licensee's corrective measures for several of the human performance and problem identification and resolution substantive crosscutting themes. The major activities observed included:

- October 4 through 13, control room observations, including 24 hour coverage of the Unit 3 shutdown to start the refueling outage
- October 4 through 13, interviews of 17 craft personnel and 57 operations personnel

- October 5, 2010, Unit 2, testing of emergency diesel generator 2MG003 using special test equipment data acquisition system
- October 5-13, 2010, Units 2 and 3, plant tours, including inspection of outage equipment storage areas
- October 6, Unit 2, emergency diesel generator 2MG003 surveillance testing following the removal of test equipment
- October 6, Unit 3 fuel handling building air cleanup system test following heater repair
- October 6, 2010, Unit 3, fuel pool gate seal test
- October 6, 2010, Unit 2, inservice testing of emergency diesel generator fuel oil transfer pumps P094 and P095
- October 7, 2010, Unit 3, inservice testing of the high pressure safety injection pump P017
- October 7, 2010, Unit 3, just in time simulator training covering the plant shutdown
- October 7, 2010, Unit 2, salt water cooling pump flowmeter replacement
- October 8, 2010, Unit 3, inservice test of turbine driven auxiliary feedwater pump P-140
- October 8, 2010, Unit 3, main steam safety valve testing
- October 8, 2010, Unit 3 auxiliary transformer maintenance
- October 8, 2010, Unit 2, swapping high pressure safety injection pump AB (swing pump) from A train power to B train power
- October 8, 2010, Unit 3, condenser air removal system operations
- October 8, 2010, Unit 3, chlorination system valve manipulations
- October 10, 2010, Unit 3, clearance order for electrical work on XM/XU 1 and 2
- October 10, 2010, Unit 2, boric acid transfer from tank T071 to tank T069
- October 11, 2010, Unit 3, placing the shutdown cooling system into service
- October 11, 2010, Unit 3, thermography of electrical panels

b.1 Observations and Findings

The team observed that site personnel were aggressively writing notifications for adverse conditions, including inadequate or confusing procedures. The team observed that site personnel were actively coaching each other on the need to properly implement communication standards for three-way communications and pre-job briefs. Some site personnel demonstrated exceptionally good communications skills and work practices. First line supervisors actively drove improvement in the field. The site was successful at attracting and hiring highly qualified entry level operations personnel. Site personnel were effective at limiting and controlling equipment leaks. These observations represent improvement when compared to past performance.

Overall, the team identified approximately 50 negative performance observations and/or findings, all of which were of minor significance. A majority of the findings involved either procedure compliance or procedure adequacy. In addition, the team identified one noncited violation of very low (Green) safety significance (documented in Section 4OA5.b.2). The general performance trends included:

- Procedure Compliance: While site personnel generally followed "continuous-use" procedure steps, they did not consistently follow "reference-use" or "information-use" procedure steps. In several instances, site personnel had not checked these procedures prior to implementing the activities

- Personnel View: Most site personnel recognized the need to improve site performance and embraced the needed changes. However, some small pockets of resistance existed in the operations and maintenance departments

- Procedure Quality: The quality of work instructions continued to challenge the site, which in some instances resulted in unexpected equipment operations, failed equipment, or otherwise caused confusion. Attention to detail when developing some work instructions, even recently prepared instructions, was lacking

- Control Room Distractions: The team noted numerous control room distractions, including the conduct of numerous pre-job briefs in the control room that could be conducted elsewhere, a high number of control room deficiencies (about 100), and significant personnel traffic in the control room at most times (even before the plant shutdown). Consequently, operators were distracted and did not closely monitor the Unit 2 control room panels or electronic information systems for at least one 20 minute period. Control room performance improved as the inspection progressed

- Peer Checks and Shift Turnovers: The site did not have consistent standards for peer checks and shift turnovers. Consequently, there was considerable inconsistency in the quality of these activities. Some peer checks were clearly deliberate and focused while, in other cases, it was difficult to determine if the peer checker was properly engaged or in a position to perform an adequate check. Operations shift turnover meetings were broken up into different groups (on the same shift) because of limited space in the control room. The groups

sometimes received different messages and established different priorities. Site operators expressed a desire for more consistent peer checking and shift turnover standards

- Pre-job Briefs: The site had a revised and detailed pre-job briefing procedure, which in the longer term will improve pre-job briefs. However, the craft demonstrated some reluctance to use the new procedure and plant operators sometimes had to step in and complete the briefs. In addition, when job conditions unexpectedly changed, participating personnel were not consistently apprised of the changed conditions. Further, control room personnel were sometimes not notified of surveillance activities in the field and were surprised by the associated control room alarms. Finally, control room reactivity briefs were only conducted at the beginning of the shifts, versus prior to the reactivity changes. This practice fell short of normal industry practice

- Management Oversight: Senior management oversight of operations (including control room visits) was considered infrequent by the operations staff

The licensee understood the identified concerns and had either already initiated actions to address them, or documented the observations in the corrective action program.

b.2 Failure to Properly Store C-Panels in the Radwaste Building

Introduction. The team identified a Green noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of plant personnel to follow site procedures that controlled equipment storage in the radwaste building.

Description. During a plant tour of the 63 foot elevation of the Unit 2 radwaste building on October 5, 2010, the team identified that plant personnel had tied off an electrical equipment panel ("c-panel") near a main generator hydrogen supply line. The panel was tied at the top and was free to otherwise move during a seismic event. This particular panel could impinge upon the hydrogen line and could have damaged the line during seismic ground movement. The resultant hydrogen fire could damage safety related cables in the overhead. The licensee took immediate corrective action to remove the equipment and perform a search of other areas to ensure that equipment was being stored properly.

Procedure SO23-XX-31, "Control of Work and Storage Areas within the Protected Area during Unit Outages at SONGS 2 and 3," Revision 0, Section 6.4, "Requirements for Unit Outage Laydown Areas," specified that plant personnel must either place the stored equipment in an approved laydown area or submit a request to approve an alternate laydown area. In this case, the c-panel was stored in a non-approved laydown area and no request was submitted to use an alternate area.

The licensee was committed to Regulatory Guide 1.29, "Seismic Design Classification," September 1978 through their Updated Final Safety Analysis Report. The regulatory guide specified, in part:

> "Those portions of structures, systems, or components whose continued function is not required but whose failure could reduce the functioning of any plant feature included in items 1.a through 1.q [equipment required to meet Seismic Category I requirements]… should be designed and constructed so that the safe shutdown earthquake will not cause such failure."

To meet this provision of the regulatory guide, the licensee designed and constructed the affected portion of the hydrogen piping system to survive a safe shutdown earthquake. The San Onofre Fire Hazards Analysis Report (applicable Fire Area/Zone 2-AR-63-116) did not consider a hydrogen fire as one of the analyzed fires. For a fire in this area, the Fire Hazards Analysis Report did stipulate that one train of safety related equipment was free of the fire area and was available for safe shutdown.

As such, the inspectors determined that plant personnel had failed to follow station procedures on proper storage of electrical equipment. Specifically, plant personnel failed to follow Procedure SO23-XX-31, "Control of Work and Storage Areas within the Protected Area during Unit Outages at SONGS 2 and 3", Revision 0, by improperly storing portable electrical equipment panels outside an approved laydown area. The portable electrical equipment panels were tied-off near a hydrogen supply line which could have been damaged during a seismic event. Consequently, a hydrogen fire could have damaged trains A and B safety related equipment cables in the overhead, but sufficient train A cables were free of the area to permit a safe shutdown. A hydrogen fire was not analyzed in the San Onofre Units 2 and 3 "Fire Hazards Analysis Report," because the hydrogen line was designed to withstand a seismic event.

Analysis. The failure to follow a site procedural requirement was a performance deficiency. This finding was more than minor because it could adversely affect the protection against fires attribute of the Initiating Events Cornerstone objective. The initiating events cornerstone objective is to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," was not well suited for this finding. Attachment 5, "Characterizing Non-Simple Fire Ignition Sources," (subsection on "Hydrogen Fires") specified that expert guidance may be needed to properly evaluate these types of fires. A region IV senior reactor analyst performed a bounding Phase 3 significance determination for this finding. The analyst calculated a bounding change in core damage frequency (delta-CDF) for the performance deficiency using two methods.

Method 1: The analyst used reasonably bounding assumptions and relied on information from the San Onofre Units 2 and 3 "Individual Plant Examination of External Events (IPEEE)," dated December 15, 1995, to calculate a bounding change to the core damage frequency. The analyst made the following influential assumptions:

- The analyst determined that a fairly large seismic event would be needed to generate enough kinetic energy in the electrical panel to damage the hydrogen pipe. Therefore, the analyst assumed that a seismic event at least as large as that required to generate a loss of offsite power would be necessary. From the "Risk Assessment of Operational Events Handbook," Volume 2, "External

Events," Revision 1.01, the frequency for a seismic induced loss of offsite power event at SONGS was 2.5E-3/year

- During a seismic event, the panel might not contact the piping at all. If it contacted the pipe, it could damage the pipe but not to the point where it would leak hydrogen. Or, there was some chance that one of the panel's sharper edges could impact the pipe and cause a leak. The analyst conservatively bounded this probability at 1 in 3, or 0.333

- The hydrogen supply piping was equipped with excess flow check valves that should isolate the hydrogen source from the piping system if hydrogen flow exceeded 25 standard cubic feet per minute. This would provide some protection for a larger piping rupture. It was, however, impossible to predict which piping failures would result in at least 25 standard cubic feet per minute leakage. The analyst neglected this benefit

- The analyst used information from the IPEEE to further assess the finding. The IPEEE did not specifically evaluate a fire at the hydrogen pipe location but did provide the conditional core damage probability (CCDP) for a fire event that assumed that all equipment in the entire fire area was burned and failed. The fire was assumed to cause a loss of offsite power. The CCDP for this bounding case was 1.1E-2. This value was likely overly conservative because of the age of the IPEEE and the simplified methods used to estimate the CCDP at that time

- The analyst assumed a moderately conservative non-suppression probability for this fire (0.25). In 75 percent of the cases, operators would be able to suppress the fire before significant damage would occur. Local ionization smoke detectors would provide a prompt fire alarm to the control room

- The exposure period was approximately 1.0 month

- The equation used for the CCDP hydrogen fire was:

$$CCDP_{hydrogen\ fire} \approx \lambda_f * p_{pf} * p_{ns} * CCDP_e * Exposure$$

Where,

λ_f = seismic loss of offsite power initiating event frequency = 2.5E-3

p_{pf} = piping failure probability = 0.33

p_{ns} = probability of non-suppression = 0.25

$CCDP_e$ = CCDP in IPEEE = 1.1E-2

Exposure = exposure period for finding = 1/12 year

$CCDP_{hydrogen\ fire}$ = 2.5E-3*0.33*0.25*1.1E-2*1/12 = 2E-7

Note: Given a fire, the analyst assumed the probability of electrical cable damage from the fire was p_{ns} = 0.25. The licensee used a 3.8E-3 damage probability for a transient fire case. The analyst used a much more bounding value, in this instance, to envelop any potential differences between hydrogen fires and transient fires.

The IPEEE did not provide cutsets for review but the primary risk drivers were a loss of offsite power and the potential loss of the chemical and volume control system. Since the seismic event itself would also cause a loss of offsite power, the analyst qualitatively determined that the change in core damage frequency (delta-CDF) from the additional hydrogen fire would be less than 1E-7.

Method 2: The analyst also evaluated the change to core damage frequency using the NRC's San Onofre SPAR model, Revision 8.15, dated August 21, 2010. For this fire area, the Fire Hazards Analysis Report had indicated that one train of safety related equipment was free of the fire area and was available for safe shutdown. Since a seismic event sufficient to cause a loss of offsite power was necessary to cause a hydrogen piping failure, for the nominal case (the case without the performance deficiency), the analyst calculated the CCDP assuming a non-recoverable loss of offsite power. The analyst solved only the loss of offsite power sequences. The base case CCDP was 1.7E-4.

For the current case (the case that included the performance deficiency), the analyst performed the same calculation except that he additionally failed the equipment that could be damaged by the hydrogen fire. The Fire Hazards Analysis Report stated that cable for both trains of the chemical volume control system and the component cooling water system were located in the fire area. The analyst failed all of the charging pumps and all of the component cooling water pumps (set fail-to-start to 1.0). Since the status of the turbine driven auxiliary feedwater pump was unknown, the analyst also failed that pump (set fail-to-start to 1.0). Finally, the model credited a unit cross-tie between Unit 2 and Unit 3 emergency diesel generator buses. The location of the cables was not known to the analyst. Accordingly, the analyst defeated this basic event (set failure probability to 1.0). The current case CCDP was 1.3E-3. The incremental CCDP was 1.2E-3. The analyst called this difference "$ICCDP_1$".

The delta-CDF for the performance deficiency (using terms defined previously) was:

$$\text{Delta-CDF}_{pd} = \lambda_f * p_{ns} * p_{pf} * ICCDP_1 * \text{Exposure}$$

$$\text{Delta-CDF}_{pd} = 2.5\text{E-}3 * 0.25 * 0.33 * 1.2\text{E-}3 * 1/12 = 2.1\text{E-}8$$

Since the delta-CDF was less than 1E-7, the analyst determined that the finding was not a significant contributor to the large early release frequency. The dominant core damage sequences included a loss of offsite power initiating event and failure of a safety relief valve to seat. The relatively low frequency of a seismic induced loss of offsite power event coupled with the remaining available equipment helped to limit the finding's significance.

The finding had a crosscutting aspect in the area of Human Performance associated with the "Work Practices" component and the self-checking theme, because personnel

failed to properly check the procedural requirements prior to staging c-panels near the hydrogen line [H.4(a)].

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Introduction," states, in part: "The pertinent requirements of this appendix apply to all activities affecting the safety related functions of those structures, systems, and components." Storing equipment in the radwaste building near a hydrogen line is an activity affecting quality because damage to the hydrogen line can result in a fire and failure of safety related equipment. Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions."

Procedure SO23-XX-31, "Control of Work and Storage Areas Within the Protected Area During Unit Outages at SONGS 2 and 3," Revision 0, Section 6.4, "Requirements for Unit Outage Laydown Areas," specified, in part:

> "For outage laydown areas approved for use during previous unit outages as show in Attachments 4 through 6, no new laydown area request type notifications are required. Outage laydown areas shown in Attachments 4 through 6 are permanently assigned to workgroups for unit outages as indicated on the attachments… Work groups shall submit temporary outage laydown area requests to the outage protected area only/load/laydown high impact team (HIT) and obtain HIT approval prior to establishing any outage laydown areas in the protected area or either unit containment structure."

Contrary to the above, in October, 2010, plant workers stored an "electrical c-panel," using a portion of the radwaste building, 63 foot elevation, as a laydown area that was not previously approved. Further, the workers did not submit a temporary outage laydown area request to the HIT. Because this finding was of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NNs 201142972 and 201140052, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000361/2010005-04, "Failure to Properly Store C-Panels in the Radwaste Building."

.2 Confirmatory Order Followup for EA-07-232 [NRC Inspection Reports 05000361/2010010; 05000362/2010010; 05000361/2007016; 05000362/2007016, and Office of Investigations Report 4-2007] (71152)

By letter, dated January 11, 2008 (ADAMS ML080110380), the NRC issued a Confirmatory Order to Southern California Edison as part of a settlement agreement through the NRC's alternative dispute resolution process. The NRC had previously completed a confirmatory order inspection at San Onofre (see NRC Inspection Report 05000361/2010010; 05000362/2010010, dated August 10, 2010, Section 4OA5). As noted in the inspection report, the NRC determined that the licensee demonstrated an adequate basis for closure of the remaining confirmatory order open items. However, the NRC planned an additional inspection to review the sustainability of the licensee's actions. The Operations and Maintenance team inspection performed this final review from October 4 through October 14, 2010.

a. Inspection Scope

The inspectors used Inspection Procedure 71152 to assess the sustainability of licensee's actions to address the confirmatory order. To that end, the inspectors reviewed and assessed the programs, processes, and procedures for detecting, addressing, and preventing deliberate non-compliances which the licensee had put in place in response to the confirmatory order. The inspectors also:

- Reviewed approximately 900 nuclear notifications to note indications of possible deliberate non-compliance
- Interviewed approximately 55 Operations personnel and 17 maintenance personnel to verify that the individuals understood that there were serious consequences for deliberate non-compliance and that licensee management was emphasizing the importance of procedure adherence
- Observed licensee meetings which were intended to flag and address potential instances of deliberate non-compliance
- Reviewed licensee specified actions to address potential deliberate non-compliance of contractor personnel

b. Findings

No findings were identified.

The inspection team concluded that the licensee's actions to address the confirmatory order, and long-term processes that had been put in place and were being implemented, were effective and sustainable to correct the condition that resulted in issuance of the confirmatory order.

.3 IP 92723, Follow Up Inspection for Three or More Severity Level IV Traditional Enforcement Violations in the Same Area in a 12-Month Period

a. Inspection Scope

The inspectors performed Inspection Procedure 92723 in accordance with the San Onofre Nuclear Generating Station 2010 midcycle assessment letter. San Onofre Nuclear Generating Station received four traditional enforcement violations that involved failure to make a report to the NRC (10CFR50.72 and 10CFR50.73) during the assessment period of July 1, 2009 through June 30, 2010. The inspectors reviewed the licensee's nuclear notifications and cause evaluation for each violation, and the overall common cause evaluation report for the following items:

- Problem Identification
- Cause, extent of condition and extent of cause evaluation
- Evaluation of corrective actions

b. Findings

No findings were identified.

.4 (Closed) Temporary Instruction (TI) 2515/179, "Verification of Licensee Responses to NRC Requirement for Inventories of Materials Tracked in the National Source Tracking System Pursuant to Title 10, Code of Federal Regulations, Part 20.2207 (10 CFR 20.2207)"

a. Inspection Scope

An NRC inspection was performed to confirm that the licensee has reported their initial inventories of sealed sources pursuant to 10 CFR 20.2207 and to verify that the National Source Tracking System database correctly reflects the Category 1 and 2 sealed sources in custody of the licensee. Inspectors interviewed personnel and performed the following:

- Reviewed the licensee's source inventory
- Verified the presence of any Category 1 or 2 sources
- Reviewed procedures for and evaluated the effectiveness of storage and handling of sources
- Reviewed documents involving transactions of sources
- Reviewed adequacy of licensee maintenance, posting, and labeling of nationally tracked sources

b. Findings

No findings were identified.

.5 (Closed for both units) Temporary Instruction 2515/172, "Reactor Coolant System Dissimilar Metal Butt Welds"

Temporary Instruction 2515/172 was previously performed at San Onofre Nuclear Generating Station Unit 2 during Refueling Outage U2R16 and Unit 3 during Refueling Outage U3R16. The results of those inspections are documented in Inspection Reports 05000361/2009005 for Unit 2, 05000362/2008005 and 05000362/2010005 for Unit 3.

a. Inspection Scope

Final portions of Temporary Instruction 2515/172 were performed at SONGS, Unit 2 during Refueling Outage U2R16 and Unit 3 during Refueling Outage U3R16. Specific documents reviewed during this inspection are listed in the attachment. Each unit has the following dissimilar metal butt welds.

- Two 12-inch pressurizer surge line nozzles, one each on the pressurizer and hot leg side, were mitigated during a previous outage using a full structural weld

overlay process. Both welds were classified as Category F per MRP-139 guidelines.

- Three 6-inch pressurizer safety nozzles were mitigated during a previous outage using a full structural weld overlay process. The welds were classified as Category F per MRP-139 guidelines.

- One 4-inch pressurizer spray nozzle was mitigated during a previous outage using a full structural weld overlay process. The weld was classified as Category B per MRP-139 guidelines.

- One 16-inch shutdown cooling hot leg suction nozzle was mitigated during a previous outage using a full structural weld overlay process. The weld was classified as Category F per MRP-139 guidelines.

- Four 12-inch emergency core cooling system cold leg injection nozzles were left unmitigated. The licensee performed a best effort volumetric inspection of each nozzle during U2R16 for Unit 2 and U3R16 for Unit 3. These welds were classified as Category I per MRP-139 guidelines.

- Four 30-inch reactor coolant pump inlet nozzles were left unmitigated. The licensee performed a best effort volumetric inspection of each nozzle during U2R16 for Unit 2 and U3R16 for Unit 3. These welds were classified as Category I per MRP-139 guidelines.

- Four 30-inch reactor coolant pump outlet nozzles were left unmitigated. The licensee performed a best effort volumetric inspection of each nozzle during U2R16 for Unit 2 and U3R16 for Unit 3. These welds were classified as Category I per MRP-139 guidelines.

i. <u>Licensee's Implementation of the Materials Reliability Program (MRP-139) Baseline Inspections (03.01)</u>

(a) MRP-139 baseline inspections:

The inspectors reviewed records of nondestructive examination activities associated with the licensee's cold leg baseline inspections for both Unit 2 and Unit 3. The baseline inspections of the pressurizer dissimilar metal butt welds were completed starting Refueling Outage U2R14 for Unit 2 and Refueling Outage U3R14 for Unit 3. The baseline inspection associated with the hot leg dissimilar metal butt welds were completed during a mid-cycle Refueling Outage U2M15 for Unit 2 and Refueling Outage U3R15 for Unit 3.

(b) The licensee did not take any deviations from the baseline inspection requirements of MRP-139, and all other applicable dissimilar metal butt welds were scheduled in accordance with MRP-139 guidelines.

ii. Volumetric Examinations (03.02)

(a) The inspectors reviewed four ultrasonic examination records of the unmitigated safety injection nozzles and eight ultrasonic examination records for the unmitigated reactor coolant system nozzles for each respective unit. The inspectors concluded that the ultrasonic examinations for these welds were done in accordance with ASME Code, Section XI, Appendix VIII Performance Demonstration Initiative requirements regarding personnel, procedures and equipment qualifications. The inspectors reviewed the basis document associated with the justification for deviation from the required inspection percent coverage. No relevant conditions were identified during these examinations.

(b) Inspectors reviewed the ultrasonic examinations of the pressurizer weld overlays in previous inspections. The results of those inspections are documented in Inspection Reports 05000361/2009005 for Unit 2 and 05000362/2008005 for Unit 3. Inspection coverage met the requirements of MRP-139 and no relevant conditions were identified.

(c) The certification records were reviewed for those personnel that performed the best effort volumetric examinations of the unmitigated nozzles. All personnel records showed that they were qualified under the Electric Power Research Institute Performance Demonstration Initiative.

(d) No deficiencies were identified during the nondestructive evaluations.

iii. Weld Overlays (03.03)

The licensee performed all weld overlays during previous outages (see NRC Inspection Reports 05000361/2008005 and 05000362/2009005).

iv. Mechanical Stress Improvement (03.04)

The licensee did not employ a mechanical stress improvement process.

v. Inservice Inspection Program (03.05)

The licensee has prepared an MRP-139 inservice inspection program. All the welds in the MRP-139 inservice inspection program are appropriately categorized in accordance with MRP-139 guidelines. The inservice inspection frequencies are consistent with the inservice inspection frequencies called for by MRP-139.

The inspectors reviewed Westinghouse document, “Flaw Evaluation of CE Design RCP Suction and Discharged Nozzle Dissimilar Metal Welds, Phase II Study,” Revision 1, referenced as the basis document for the classification of each unit’s unmitigated eight reactor coolant system nozzles and four safety injection nozzles. These welds were classified as Category I per MRP-139 guidelines.

The licensee has provided a basis for the justification from the following:

(a) The probability of a flaw existing or initiating is very low.

(b) There is a significant margin between the size flaw which would leak at a detectable rate, and the size flaw which would cause the pipe to fail.

(c) The flaw tolerance for both axial and circumferential flaws is very high.

The inspectors concluded that the licensee met the requirements associated with the classification of components as category I per MRP-139 guidelines.

b. Findings

No findings were identified.

4OA6 Meetings

Exit Meeting Summary

On October 14, 2010, the operations and maintenance inspection team leader presented the inspection results to Mr. J. Sheppard, Senior Vice President and Chief Nuclear Officer, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. One proprietary document was identified. The inspectors returned the proprietary document to the licensee.

On November 5, 2010, the inspectors presented the results of the radiation safety inspection to Mr. J. Sheppard, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. On December 9, 2010, the inspectors presented additional information related to the radioactive gaseous and liquid effluent treatment section of the inspection to Mr. J. Sheppard and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On November 8, 2010, the inspector debriefed the results of the onsite inspection of licensee changes to their emergency plan and emergency action levels with Ms. K. Gallion, Manager, Onsite Emergency Planning, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 9, 2010, the inspectors presented the inspection results of the review of inservice inspection activities to Mr. T. McCool, Plant Manager, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 9, 2010, the inspectors presented the cross-cutting theme inspection results to Mr. J. Sheppard, Senior Vice President and Chief Nuclear Officer, and other members of the

licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 10, 2010, the inspectors presented the inspection results for the licensee event report review to Mr. P. Dietrich, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 15, 2010, the inspector discussed the emergency plan revision inspection results with Ms. K. Gallion, Manager, Onsite Emergency Preparedness, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On August 6, 2010, the inspectors discussed the results of the licensed operator requalification program inspection with Mr. W. Arbour, Operations Training Officer, and other members of the licensee's staff. The inspectors also discussed the overall examination results with Mr. Arbour on December 16, 2010, following completion of the requalification examinations on December 7, 2010. The licensee representatives acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 22, 2010, the inspectors presented the inspection results to Mr. D. Bauder, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) and Severity Level IV were identified by the licensee and are violations of NRC requirements which meet the criteria of Section 2.0 of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as noncited violations.

.1 Contrary to Technical Specification 5.5.1.1.a, and Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Procedure SO23-3-3.23.1, “SSD Second Point of Control Tests – HS-1669A1, G002 Governor & Exciter Control, and HS-1670A1, G002 D/G Control,” Revision 37 was inadequate in that it contained technical errors, resulting in inadequately performed surveillance tests on both unit’s emergency diesel generators since 2002. The licensee invoked Licensee Controlled Specification 3.0.100.3 for the missed surveillances, and initiated Nuclear Notifications NNs 201085898 and NN 201088541 to place an administrative hold on the procedure and perform an extent of condition review. The licensee performed a risk evaluation and determined the surveillances could be performed within the specified Licensee Controlled Specification 3.7.113.1.11 frequency of 48 months. The licensee initiated Nuclear Notification NN 201094554 to perform a formal evaluation of the issue.

The performance deficiency is more than minor, and therefore a finding, because, if left uncorrected, it would have the potential to lead to a more significant safety concern by having technically inaccurate procedures being used on important plant systems. This finding is associated with the procedure quality attribute of the Mitigating Systems Cornerstone. Using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements," the inspectors determined that the finding constituted a high degradation of the safe shutdown area since the surveillance procedure could not be performed as written. The finding screened to a phase 3 analysis. The Phase 3 results determined this finding to have very low safety significance because the fire scenarios that would have resulted in a loss of control of the emergency diesel generator would not have caused a loss of offsite power. Therefore, the only scenario that would have resulted in a risk impact is a consequential loss of offsite power (grid-centered, caused by the plant trip itself), for which the conditional probability is 8E-3 per plant trip. Combined with the fire ignition frequency, severity factor, and suppression capability, the frequency of the scenario of interest fell below 1.0E-6/yr.

.2 Contrary to Title 10 CFR 50.73(a)(1, between February 3, 2009 and September 3, 2010, the licensee failed to report to the NRC, a wiring error which impacted emergency diesel generator fire-isolation switch and resulted in the unit being in an unanalyzed condition. The finding was evaluated using the traditional enforcement process as a Severity Level IV violation using Section 2.0 and Supplement I, Paragraph D.4, of the NRC Enforcement Policy, dated March 16, 2005. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 201038508.

.3 License Condition 2.C(14), "Fire Protection," requires the licensee to implement and maintain in effect all provisions of the approved fire protection program. The approved fire protection program requires the licensee to meet the requirements of 10 CFR Part 50, Appendix R, Section III.G.3, which requires that alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room, or zone under consideration, should be provided where the protection of systems whose function is required for hot shutdown does not satisfy the requirement of 10 CFR Part 50, Appendix R, Section III.G.2. Contrary to the above, from September 2004 to February 3, 2009, the licensee failed to provide an alternative shutdown capability that was independent of cables, systems, or components in alternative shutdown areas. Specifically, the licensee mis-wired a fuse needed for fire isolation and bypassed the fuse protection for the Unit 2 train A local emergency diesel generator control circuitry. In this condition, a hot short on the remote wiring would open circuit the control power fuse to the emergency diesel generator excitation circuitry and cause a loss of emergency diesel generator function. This issue was determined to have very low safety significance in a Phase 3 SDP because the probability of having a fire that caused a loss of offsite power and also required local control of the emergency diesel generator was very low. This issue was identified in the licensee's corrective action program as Nuclear Notifications NNs 200304816 and 201038508.

SUPPLEMENTAL INFORMATION
KEY POINTS OF CONTACT

Licensee Personnel

T. Adler, Manager, Maintenance/Systems Engineering
B. Arbour, Manager, Operations Training
J. Armas, Supervisor, Maintenance Engineering Fluid Process
D. Axline, Project Manager, Nuclear Regulatory Affairs
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C. Cates, Manager, Recovery
B. Corbett, Director, Performance Improvement
J. Davis, Manager, Plant Operations
P. Dietrich, Senior Vice President
D. Dick, Supervisor, Chemistry
R. Elsasser, Manger, Training
G. Fausett, ALARA Coordinator, Health Physics
O. Flores, Director, Nuclear Oversight
T. Gallaher, Consultant, Performance Improvement
K. Gallion, Manager, Onsite Emergency Preparedness
S. Genschaw, Manager, Maintenance & Construction Services
M. Graham, Manager, Plant Operations
C. Harberts, SGRP Engineer
E. Hubley, Director, Maintenance/Construction
D. Inouye, BACCP Engineer Program Owner
G. Johnson, Jr., Senior Nuclear Engineer, Maintenance/Systems Engineering
K. Johnson, Manager, Design Engineering
L. Kelly, Engineer, Senior Nuclear Engineer, Nuclear Regulatory Affairs
G. Kline, Senior Director Engineering and Technical Services
M. Lewis, Manager, Health Physics
J. Madigan, Director, Site Recovery
A. Mahindrakar, ISI Manager, Maintenance Engineering
A. Martinez, Manager, Corrective Action Program
M. McBrearty, Project Manager, Nuclear Regulatory Affairs
T. McCool, Plant Manager
L. Pepple, ALARA General Foreman, Health Physics
W. Poirier, Manager, Operations
N. Quigley, Manager, Maintenance/System Engineering
J. Raleigh, Consultant, Nuclear Regulatory Affairs
R. Richter, Engineering Supervisor, Fire Protection
M. Russell, Health Physicist, Health Physics
C. Ryan, Manager, Maintenance
S. Ryba, Nuclear Regulatory Affairs
R. Sandstrom, Manager, Corrective Action Program
J. Sheppard, Senior Vice President and Chief Nuclear Officer

G. Solorzano, Manager, Performance Improvement
M. Stevens, Engineer, Regulatory Affairs
R. St. Onge, Director, Nuclear Regulatory Affairs
R. Treadway, Manager, Compliance
S. Vaughan, ALARA Manager, Health Physics
C. Williams, Manager, Regulatory Inspections
D. Yarbrough, Director, Plant Operations
K. Yhip, Environmental Engineer, Regulatory Affairs

NRC Personnel

M. Runyan, Senior Reactor Analyst

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000361/2010005-01 05000362/2010005-01	NCV	Failure to Appropriately Classify Conditions Adverse to Quality for Significance (Section 4OA2)
05000362/2010005-02	NCV	Failure to Follow Procedure for Modifying Work Clearance Applications (Section 4OA3)
05000362/2010005-03	NCV	Inadequate Control of Foreign Material over the Spent Fuel Pool during Surveillance Testing (Section 4OA3)
05000361/2010005-04	NCV	Failure to Properly Store C-Panels in the Radwaste Building (Section 4OA5)

Closed

05000361/2009-005	LER	Wiring Error in Diesel Generator Circuit Results in Loss of Fire Isolation Capacity (Section 4OA3)
05000361/2007-007	LER	Inoperable SFP Cooling Pumps Results in Loss of Safety Function (Section 4OA3)
05000361/2009-004	LER	Both Trains of Spent Fuel Pool Cooling Inoperable Results in Loss of Safety Function (Section 4OA3)
05000362/2008-003	LER	Missed TS Completion Time Results in TS Violation (Section 4OA3)
EA-07-232	ORD	Confirmatory Order to Address Instances of Deliberate Non-Compliance (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1RO1: Adverse Weather Protection

PROCEDURES

NUMBER	TITLE	REVISION
SO23-XX-29.1	Seasonal Readiness	1
SO23-13-8 ISS2	Severe Weather	8

NUCLEAR NOTIFICATIONS

NUMBER				
201161684	201161573	201129496	201150925	201147

MISCELLANEOUS

TITLE
Station Policy - Winter Weather Preparations (Water Intrusion Plan)

Section 1RO4: Equipment Alignment

PROCEDURES

NUMBER	TITLE	REVISION
SO23-3-2.11	Spent Fuel Pool Cooling System Alignment	28
SO123-2-13.1	Diesel Generator 3G002 Alignment	8
SO23-5-2.35.1	Diesel Generator G-002 Local Annunciator Panel L160 Alarm Response	12
SO23-2-13.1	Diesel Generator 3G003 Alignment	8
SO23-3-3.27.2	Weekly Electrical Bus Surveillance	22
SO23-XX-35	Protected Equipment	2
SO23-2-8.1	Saltwater Cooling System Removal/Return to Service Evolutions (Online or Outage)	11
SO123-0-A4	Configuration Control	14
SO123-XV-15	Maintaining Plant Status Control	2
SO23-13-5	Loss of Instrument Air	10

NUCLEAR NOTIFICATIONS

NUMBER				
200686370	200728399	200754965	200851723	201147075

DRAWINGS

NUMBER	TITLE	REVISION
40110E	P & I Diagram Diesel Generator System (Train A) System No. 2420	4
40110A	P & I Diagram Diesel Generator System (Train A) System No 2420	8
40110F	P & I Diagram Diesel Generator System (Train B) System No. 2420	4
40126A	P&I Diagram Component Cooling Water System (Salt Water Pumps)	28
40126B	P&I Diagram Component Cooling Water System (Salt Water Pumps)	28
40126X	Process Key Plan P&I Diagram Component Cooling Water System (Salt Water Pumps)	4

MISCELLANEOUS

NUMBER	TITLE	REVISION
DBD-SO23-120	6.9KV, 4.16KV & 480V Electrical Systems	17

Section 1RO5: Fire Protection

PROCEDURES

NUMBER	TITLE	REVISION / DATE
SO23-XIII-4.13	Inspection for Control of Combustibles and Transient Fire Loads	2
SO123-XV-1.41	Control of Ignition Sources	16
SO123-XV-1.20	Seismic Controls	1
SO23-411-22-77-16	Penetration Seals Auxiliary Control Building Common	16
SO123-XVI-23	120, 220 and 480 Volt Electrical Power Tool and Extension Cord Inspection and Use	4
SO123-XVI-24	Electrical Safe Work Practices	12
SOFD 2010-14	Fire Drill: C-shift South Yard Facility Bld. T-10	December 23, 2010
OCA-003	Pre-Fire Plan Building: T-10 (South Yard Facility)	2
OCA-003A	Pre-Fire Plan Building: T-10 (South Yard Facility)	4
OCA-003B	Pre-Fire Plan Building: T-20 (South Yard Facility)	3

SO123-XIII-21	Fire Department Drills	11 EC1

NUCLEAR NOTIFICATIONS

NUMBER		
201222658	201236941	201236811

MAINTENANCE ORDERS

NUMBER
800496717

DRAWINGS

NUMBER	TITLE	REVISION
2-006	SONGS Pre-Fire Plans	6
2-007	SONGS Pre-Fire Plans	5
3-033A	SONGS Pre-Fire Plans	5
3-040	Safety Equipment Cable Tunnel Pre-Fire Plans	7
3-043	Auxiliary Feedwater Pipe Tunnel Pre-Fire Plans	5
41122-71-3001-E	Block Out Section 2 Hour fire Rated Floor Details	4
3-038	Unit 3 Safety Equipment Building (-)15'-6" to 8'-0"	6

MISCELLANEOUS

NUMBER	TITLE	DATE
10090034-00	Fire Impairment	October 3, 2010

Section 1RO6: Flood Protection Measures

PROCEDURES

NUMBER	TITLE	REVISION
M-0120-015	Plant Flood Analysis Review	8

NUCLEAR NOTIFICATIONS

NUMBER
201206345

Section 1RO8: Inservice Inspection Activities

PROCEDURES

NUMBER	TITLE	REVISION
SO123-V-7.1	SCE SONGS Welding Program	5
SO23-XXVII-20.48	Liquid Penetrant Testing	3
SO23-XXVII-30.9	Ultrasonic Examination of Dissimilar Metal Piping Welds	2
SO23-XXVII-30.6	Ultrasonic Examination of Austenitic Piping Welds	2
SO23-XXVII-30.13	Risk-Informed Ultrasonic Examination of Class 1 Austenitic Piping Welds	0
SO23-XXVII-30.5	Ultrasonic Examination of Ferritic Piping Welds	1
SO123-IN-1	Inservice Inspection/Inservice Test Programs	8
SO23-XVII-3.1	Inservice Inspection of Class 1 Components and their Supports	6
SO23-XVII-3.5	Location Reference Markers	0
SO23-XXIV-3.8.3	In Process Visual Examination of the Temporary Containment Opening	0
SO23-XVII-1.1	Inservice Inspection Program Maintenance	5
T4EN51	RCS Non-Alloy 600 Boric Acid Leakage, Inspection and Evaluation	4
T4EN52	RCS Allow 600 Boric Acid Leakage, Inspection and Evaluation	0
SO23-V-8.15	Containment Boric Acid Leak Inspection	2
SO23-XV-85	Boric Acid Corrosion Control Program (BACCP)	6
25221-00-4MP-T040-S0237	Bechtel Non-destructive Examination Standard Computer Radiographic Examination CR-ASME III Piping	0
SO23-XXXIII-8.16	Reactor Coolant System Allow 600 Inspection	7
SO23-XXVII-30.9	Ultrasonic Examination of Dissimilar Metal Piping Welds	2
SO23-617-3A-M322	Grease Dedication Plan	0
SO123-V-7.6	Welding and Brazing Filler Metals	4
SO123-I-11.1	Welding Filler Material Control	10

SO23-XXVIII-5.5	Welding Filler Material Control for ASME/AQAM Fabrication	1

NUCLEAR NOTIFICATIONS

NUMBER				
201233486	201169184	201180498	201235083	200792677
200864373	201222543	201235536	201233486	201220432
2012228239	201148235	201169184	201236652	201070500
200885737	200714391	201180498	201219558	201219671
200047961	200490068	201224571	201222618	

DRAWINGS

NUMBER	TITLE	REVISION
40113B	Safety Injection System, System No. 1204	16
ECN A52649	Isometric Drawing S3-1305-ML-189-20”-C-GK1	11
S3-1204-ML-001	From Control Valve 3HV 9300 to Line 108 (S3-1204-ML-001-24”-C-LL0)	16

ENGINEERING CHANGE PACKAGES

NUMBER	TITLE	REVISION / DATE
800072644	Removal and Restoration of Equipment Hatch	1
800072652	Remove and Reinstall Steam Generator S3-1301-M089 Snubber Assemblies	0
800072669	Re-installation of Tendon Sheathing in the Construction Opening for the Unit 3 SGR	May 20, 2010
800139902	Removal and Installation of Feedwater and Auxiliary Feedwater (AFW) Piping for Steam Generator (SG) S3-1301-ME-088	1

NDE EXAMINATION REPORTS

NUMBER	TITLE	REVISION
209-16-UT-011	Safe end-to-elbow weld 02-012-002	2
209-16-UT-010	Safe end-to-pipe weld 02-013-002	2
209-16-UT-006	Safe end-to-pipe weld 02-011-002	2
209-16-UT-005	Safe end-to-elbow weld 02-010-002	2
209-16-UT-013	Safe end-to-pipe weld 02-015-002	2
209-16-UT-014	Safe end-to-elbow weld 02-014-002	2

209-16-UT-002	Safe end-to-elbow weld 02-008-002	2
209-16-UT-003	Safe end-to-pipe weld 02-009-002	2
209-16-UT-012	Safety injection nozzle-to-safe end weld 02-015-010	2
209-16-UT-007	Safety injection nozzle-to-safe end weld 02-011-011	2
209-16-UT-004	Safety injection nozzle-to-safe end weld 02-009-012	2
209-16-UT-009	Safety injection nozzle-to-safe end weld 02-013-011	2
310-16-UT-001	Safe end-to-elbow weld 03-010-002	2
310-16-UT-008	Safe end-to-pipe weld 03-011-002	2
310-16-UT-004	Safe end-to-elbow weld 03-012-002	2
310-16-UT-014	Safe end-to-pipe weld 03-013-002	2
310-16-UT-002	Safe end-to-elbow weld 03-008-002	2
310-16-UT-003	Safe end-to-elbow weld 03-014-002	2
310-16-UT-011	Safe end-to-pipe weld 03-009-002	2
310-16-UT-015	Safe end-to-pipe weld 03-015-002	2
310-16-UT-016	Safety injection nozzle-to-safe end weld 03-015-010	2
310-16-UT-013	Safety injection nozzle-to-safe end weld 03-013-011	2
310-16-UT-009	Safety injection nozzle-to-safe end weld 03-011-011	2
310-16-UT-012	Safety injection nozzle-to-safe end weld 03-009-012	2

ENGINEERING PACKAGES

NUMBER	TITLE	DATE
310-16PT-016	24” Schedule 40S Elbow to Pipe	December 1, 2010
PT-U3-101	E-088 RCS Hot Leg	December 1, 2010
310-16UT-042	18” Buttweld “NA” DM Weld @ RSG Nozzle	December 9, 2010
310-16PT-017	18” Buttweld “NA” DM Weld @ RSG Nozzle	December 8, 2010
310-16-UT-002	Safe End to Elbow Weld	October 28, 2010
310-16-UT-012	Safety Injection Nozzle to Safe End	November 9, 2010
310-16-UT-032	3” Schedule 160 Pipe to Valve	November 23, 2010
310-16-PT-013	3” Schedule 160 Pipe to Valve	November 19, 2010
310-16-UT-035	8” Schedule 140 Valve to Pipe	December 1, 2010
310-16-UT-026	6” Schedule 80 Penetration to Pipe	November 18, 2010

310-16-MT-002	6” Sch 80 Penetration to Pipe	November 16, 2010

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
WCAP-17128-NP	Flaw Evaluation of CE Design RCP Suction and Discharge Nozzle Dissimilar Metal Welds, Phase III Study	1
51-9141657-000	Technical Summary of SONGS Unit-3 Replacement Steam Generators Pre-Service Eddy Current Inspection	June 2010
SO23-617-12	Specification for Purchase of Cadweld Splices	0
SO23-617-13	Specification for the Installation and Testing of Cadweld Splices	1
CS-C04	Reinforcement Steel Placement	9

Section 1R11: Licensed Operator Requalification Program

PROCEDURES

NUMBER	TITLE	REVISION
SO23-5-1.4	Plant Shutdown to Hot Standby	17
SO23-5-1.7	Power Operations	45
SO123-XXI-1.11.7	Licensed Operator Requalification Training Program	18
SO23-XXI-ANA	Training Analysis	0
SO23-XXI-DES	Training Design	1
SO23-XXI-DEV	Training Development	1
SO23-XXI-IMP	Training Implementation	0
SO23-XXI-EVA	Training Evaluation	1
2RP477	Licensed Operator Continuing Training	4

NUCLEAR NOTIFICATIONS

NUMBER			
200721702	200824293	200286002	200599415

DYNAMIC SCENARIOS

NUMBER		
No. 17	No. 24	No. 55

EXAM GROUP GUIDELINES

NUMBER	TITLE
EGG-001	Operator Examination Security Process
EGG-008	Annual Walk-through Examination Process
EGG-009	Dynamic Examination Process

JPMs

NUMBER	TITLE
J237A2	Determine Time to Boil
J163A	Classify Event
J004	Unit CO AOI 13-2 Actions up to Placing the EPPM in Service
J190	Perform Diesel Generator Cross-Tie Operations in the Plant
J020	Place CEA Subgroup on Hold Bus
J254FS	Respond to an Open Pressurizer Spray Valve
J125FS	Energize A04 from G002

SIMULATOR

TITLE

SONGS 2010 Simulator Annual Testing

SONGS U2C16 Core Physics Testing

SIM TAG 300, SONGS Simulator Operability Testing Desktop Guide

SIM TAG 400, SONGS Simulator Core Physics Testing Desktop Guide

Simulator Deficiencies List

Simulator Differences Spreadsheet

Simulator Management Review Board meeting minutes – 9/17/09, 11/12/09, 3/29/10

Section 1R12: Maintenance Effectiveness

PROCEDURES

NUMBER	TITLE	REVISION
SO123-XV-5.3	Maintenance Rule Program	12
SO1213-XV-5.3	Maintenance Rule Program	12
SO-123-XXIV-20.2	Maintenance Rule Evaluation	3

NUCLEAR NOTIFICATIONS

NUMBER				
201142351	201141776	200980063	200984340	200984342
200984403	200986184	200998539	200524653	200968634
201173553	200980063	200984340	201070472	200824293
201036129	201205637	201205637		

MISCELLANEOUS

NUMBER	TITLE	DATE
2P307	Inservice Test Data	October 6, 2010
DBD-SO23-780	Auxiliary Feedwater System	9

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	REVISION
SO23-XX-8	Integrated Risk Management	EC 8-1
SO23-XX-10	Maintenance Rule Risk Management Program Implementation	6
SO23-6-6	Reserve Auxiliary Transformer Operation	16
SO123-I-1.28	Grounding Low and High Voltage Power Systems	12
SO123-XX-35	Protected Equipment	1
SO123-XX-35	Protected Equipment	2
SO123-XV-50.CAP-1	Writing Nuclear Notifications for Problem Identification and Resolution	5
DBD-SO23-120	4.16KV & 480V Electrical Systems	7
SO123-XV-50.CAP-1	Writing Nuclear Notifications for Problem Identification and Resolution	5

NUCLEAR NOTIFICATIONS

NUMBER				
201147011	201148466	201147815	201154461	201147913
200402733	200682816	201194085	201192882	

MAINTENANCE ORDERS

NUMBER
800545119

DRAWINGS

NUMBER	TITLE	REVISION
IPE-PI-001	Maintenance of the SONGS 2&3 Living PRA	10
30101	One Line Diagram – Main Auxiliary Power System	38

MISCELLANEOUS

TITLE	DATE
High Nuclear & Corporate Risk Significant Activity for the Week of 11/01/2010	November 1, 2010

Section 1R15: Operability Evaluations

PROCEDURES

NUMBER	TITLE	REVISION
SO23-2-13	Diesel Generator Operation	46
SO123-XV-52	Operability Determinations and Functionality Assessments	18
SO123-XV-50.CAP-3	Corrective Action Program Evaluations and Action Plans	12
SO23-XX-34	Emergent Issue Response	3

NUCLEAR NOTIFICATIONS

NUMBER				
201137112	201181917	201181864	201189165	201168011
201183395	201170486	201171553	201169187	

MAINTENANCE ORDERS

NUMBER	
800604017	800596401

DRAWINGS

NUMBER	TITLE	REVISION
30172	Class 1E 125V DC and 120V AC Power System	23
D-070003201-B	Angle: Spring Motor MTG	0

MISCELLANEOUS

NUMBER	TITLE	DATE
3-EDMR-2010	Equipment Deficiency Mode Restraint Log	November 1, 2010

	Control Room Logs	October 26, 2010
3.8.8	Technical Specifications: Inverters – Shutdown	
	Control Room Logs	October 25-26, 2010
NECP 800600170	Fabricate Refueling Machine Motor Plate	October 26, 2010

Section 1R18: Plant Modifications

PROCEDURES

NUMBER	TITLE	REVISION
SO123-XXIV-10.1	U2 SG Rigging & transport, OLS, ILS, Foundations, Runway & Work Platforms	1

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
NECP 80072669	Unit 3 Containment Opening	0
SO23-617-3N-M9	Hydro-demolition Procedure	0
NECP 800072641	Engineering Change Package SGR3 Rigging and Handling	1
FCN-S1298J	Pulsation Dampeners on Instrument Tubing High Pressure Injection Pump	May 5, 1988
NCR-3-1842	Post Trip Evaluation	1

Section 1R19: Postmaintenance Testing

PROCEDURES

NUMBER	TITLE	REVISION
SO23-II-11.164	Connection/Operation of Yokogawa SL1000 Data Acquisition System on Emergency Diesel Generators	0
SO23-3-3.51.1	Containment Penetration Leak Rate Testing Containment Airlock, Purge and ILRT Pentrations	13
SO23-3-3.51	Containment Penetration Leak Rate Testing	7
SO23-V-3.13	Containment Penetration Leak Rate Testing	20
SO23-V-3.13.1	Testing Containment Penetration Leak Rate Testing	8
SO23-IV-6.3	Security Return to Service Testing	16
SO123-IV-6.8.1	Alarm Management	7

SO123-XV-HU-2	Human Performance Tools	4
SO23-3-3.24	Attachment 11, Fuel Handling Building Post-Accident Air Cleanup System Test, Train A	11
SO23-2-13	Emergency Diesel Generator Operations	46

NUCLEAR NOTIFICATIONS

NUMBER				
201149399	200805637	201128936	201206630	

MAINTENANCE ORDERS

NUMBER				
800590998	800588975	800588972	800476360	800468463
800241534	800270938			

CALCULATIONS

NUMBER	TITLE	REVISION
EC-344	LLRT Volume Calculations for Unit 2, 3	0

Section 1R20: Refueling and Other Outage Activities

PROCEDURES

NUMBER	TITLE	REVISION
SO23-XX-35	Protected Equipment	0
SO23-XX-7.1	Defense in Depth Planning	6
SO23-XX8	Integrated Risk Management	8
SO23-5-1.8.1	Shutdown Nuclear Safety	6
SO123-II-9.10	Rosemount Calibrations	8
SO123-II-8.10.1	Instrument and Control Loop Verification	5
SO23-II-9.574	Emergency Sump Calibration	5
SO123-0-A1	Conduct of Operations	28 EC 28-1
SO123-0-A3	Procedure Use	10 EC 10-1
SO123-I-1.3	Work Activity Guidelines	29
SO123-RX-1	Reactivity Management Program	4
SO123-VI-1	Review/Approval Process for Orders, Procedures and Instructions	23 EC 23-3

SO123-XIII-4.600	Fire Protection Impairment	11
SO123-XV-1.20	Seismic Controls	1
SO123-XV-50.CAP-1	Writing Nuclear Notifications for Problem Identification and Resolution	5
SO123-XV-HU-1	Human Performance Program	8
SO123-XV-HU-2	Human Performance Tools	4
SO123-XV-HU-3	Written Instruction Use and Adherence	4
SO123-XV-HU-4	Human Performance Roles and Responsibilities	1
SO123-XVI-13	Barrier Tape and Barricades	4
SO123-VII-20.9.4	Survey and Release of Personnel	8
SO123-XVI-23	120, 220, and 480 Volt Electrical Power Tool and Extension Cord Inspection and Use	4
SO23-3-2.11	Spent Fuel Pool Operations	28
SO23-3-2.6	Shutdown Cooling System Operation	28
SO23-5-1.4	Plant Shutdown to Hot Standby	17
SO23-5-1.5	Plant Shutdown From Hot Standby to Cold Shutdown	32
SO23-5-1.7	Power Operations	45
SO23-5-1.8	Shutdown Operations (Mode 5 and 6)	21
SO23-6-1.1	6.9 kV Circuit Breakers	12
SO23-10-2	Turbine Shutdown	24
SO23-12-1	Standard Post Trip Actions	22
SO23-V-2.14	Thermal Inspection of Plant Components	9 EC 9-1
SO23-XIII-4.13	Inspection for Control of Combustibles and Transient Fire Loads	2
SO123-I-1.18	FME Controls	14
SO23-XV-4.13	Control of Work and Storage Areas Within the Protected Area	7

NUCLEAR NOTIFICATIONS

NUMBER

200580901	201139979	201140052	201140094	201140895
201141794	201142117	201142913	201142972	201143040
201143159	201144226	201144488	201145122	201145272

201146509	201147957	201147958	201147959	201147960
201147961	201148002	201148246	201148272	201148303
201148415	201148453	201148489	201148567	201148578
201149751	201152679	201203241	201169184	201180498
201223806	201206345	201231265	201226963	201235631
201239966				

WORK CLEARANCE DOCUMENTS

NUMBER

30005405	30009243

MAINTENANCE ORDERS

NUMBER

800200641	800197411	800468480	800468479	800516800
800516738	800461242	800200641	800175618	800476376

CALCULATIONS

NUMBER	TITLE	REVISION
SO23-617-3B-C93	Structural Calculations SONGS Steam Generator replacement Outside Lift System	0
SO23-617-3B-C405	SG Outside Lift Rigging Calculations	0
SO23-617-3-C41	OLS and Runway Erection and Collapse Load Drop Effects	1
SO23-617-3-C29	Evaluation of Safety-Related Underground Utilities and Structures for Postulated Load Drop from Transporter	2
SO23-617-3-C36	Evaluation of Service Crane During Rigging Operations	1
SO23-617-3-C14	SONGS Steam Generator Drop Dose Anaylsis	0

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
WCA 700004383	Containment Emergency Sump Tagout	
SDI PT-103	Unit 3 Tendon and Grease Removal	1
PEE-NN200937150	Tendon Gallery Hot Work Permit	1
SDI PT-109	Unit 3 Containment Post Tensioning System Duct Inspection	1

SDI- PT 110	Unit 3 Containment Post Tension System Tendon Installation	2
WCA 70003858	RCS Permission	
WPIR 25221-030MOP-7064-0003	Perform SG E088 Hot and Cold Legs Cuts and Preparations	1
	U3R16 Operations Outage Script, Inservice Testing Only	October 7, 2010
	Outage Critical Path Schedule– 3R16	0
	Fire Hazards Analysis Report	April 2009
	Outage Schedule – 3R16	0
09090050-07	Fire Protection Impairment Form	September 15, 2009
10050069-04	Fire Protection Impairment Form	June 4, 2010
10050069-04	Fire Protection Impairment Form	May 24, 2010
10060024-07	Fire Protection Impairment Form	June 14, 2010
10070047-01	Fire Protection Impairment Form	July 13, 2010
10070083-03	Fire Protection Impairment Form	July 22, 2010
10070116-03	Fire Protection Impairment Form	April 8, 2010
10080018-02	Fire Protection Impairment Form	August 9, 2010
10080059-07	Fire Protection Impairment Form	August 19, 2010
10090020-2	Fire Protection Impairment Form	September 3, 2010
10090034-00	Fire Protection Impairment Form	October 3, 2010
10090112-02	Fire Protection Impairment Form	September 27, 2010
10100002-01	Fire Protection Impairment Form	October 1, 2010
SO123-III-2.14.23	Pre-Job Brief for SO123-III-2.14.23, “Boric Acid Batching”	
SO23-3-2.7	Pre-Job Brief for SO23-3-2.7 Att. 4 “HPSI Pump P018 Transfer”	
SO23-6-30	Pre-Job Brief for SO23-6-30, Section 6.16 “Shifting Relay House Power”	
25221-003-C0T-7151-00139	Removal and Restoration of equipment Hatch	December 6, 2010

Section 1R22: Surveillance Testing

PROCEDURES

NUMBER	TITLE	REVISION
SO123-III-1.6.23	Units 2/3 - Normal Operation of the Reactor Coolant Sample System	21
SO123-III-1.10.23	Units 2/3 - Reactor Coolant Gas/Liquid Separation Panel	9
SO23-I-2.5	Main Steam Safety Valves Setpoints Testing	22
SO123-XV-91	Reactivity Management	4
SO23-3.3.37	Reactor Coolant System Leak Rate Calculation	27
SO123-II-1.10.1	Connection of Electrical Monitoring Devices on Operable/Operating Equipment	4
SO123-XV-44	10 CFR 50.59 and 72.48 Program	11 EC 11-1
SO123-XVI-24	Electrical Safe Work Practices	11
SO23-2-13	Attachment 2, Diesel Generator Operation	46
SO23-3-2.7	HPSI Pump P018 Transfer	
SO23-3-3.23	Diesel Generator Monthly and Semi-Annual Testing	48
SO23-3-3.31.12	Component Cooling Water System Leakage Test	7
SO23-3-3.37	Reactor Coolant system Water Inventory Balance	31
SO23-3-3.43.35	ESF Subgroup Relays K-402B, K-624B and K-724B Semi Annual Test	5
SO23-3-3.60.6	Auxiliary Feedwater Pump and Valve Testing	18
SO23-II-11.164	Connection/Operation of Yokogawa SL1000 Data Acquisition System on Emergency Diesel Generators	0
SO23-V-1.28	Predictive Maintenance (PdM) Program	2
SO23-V-2.14	Thermal Inspection of Plant Components	9
SO23-V-2.9	Emergency Diesel Generator Engine Monitoring Program	2 EC 2-1
SO23-XX-29	Scheduling	4

NUCLEAR NOTIFICATIONS

NUMBER				
201144795	201146023	201085898	201085558	201088025
200944517	201222608	201149915	201149899	201149399
200530343	200580901	200805637	201138360	201140895

201142066	201144488	201144584	201144590	201146031
201147127	201148489	201148634		

MAINTENANCE ORDERS

NUMBER				
800179713	800514336	800400006	800420804	800555927

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	Analyze Installation of DAS Test Leads (Harness/Umbilical Cord) and Compare to Procedure SO123-II-1.10.1	
	Control Room Logs	October 5-6, 2010
	10 CFR 50.59 Screening for DAS System	
2LC838	Lesson Plan, In-service Testing of Pumps and Valves	3
NRC Inspection Manual	Part 9900 Guidance – Preconditioning of Structures, Systems, and Components Before Determining Operability	September 28, 1998
SO23-3-3.60.10	Pre-job Brief Package for Diesel Fuel Oil Transfer Pump Tests	9

Section 1EP4: Emergency Action Level and Emergency Plan Changes

PROCEDURES

NUMBER	TITLE	REVISION
SO123-VIII-1	EP Licensing Document Impact Screening	29
	EP Licensing Document Impact Screening, Emergency Plan	31

Section 1EP6: Exercise Evaluation

PROCEDURES

NUMBER	TITLE	REVISION
SO123-VIII-1	Recognition and Classification of Emergencies	31
SO123-VIII-10.3	Protective Action Recommendations	12
SO123-VIII-30.7	Emergency Notifications	12
SO123-VIII-0.200	Emergency Plan Drills and Exercises	11

SO23-13-3	Earthquake	13
SO23-12-1	Standard Post Trip Actions	22

Section 2RS01: Radiological Hazard Assessment and Exposure Controls

PROCEDURES

NUMBER	TITLE	REVISION
SO123-VII-8	Control of Radioactive Material	13
SO123-G-2	SONGS Station ALARA Committee and ALARA Sub-Committee Guidelines	4
SO123-VII-20	Health Physics Program	15
SO123-VII-20.4.2	Temporary and Permanent Shielding	13
SO123-VII-20.10	Radiological Work Planning and Controls	16
SO123-VII-20.10.7	Radiography Health Physics Controls	15
SO123-VII-20.10.9	Removal of Objects and Work Around Contaminated Pools	0
SO123-VII-20.11	Access Control Program	10
SO123-VII-20.11.1	Radiological Postings	12
SO123-VII-20.14.9.1	Receipt, Inventory, and Leak Testing of Sealed Radioactive Sources	8
SO123-VII-20.17	Monitoring, Contolling, and Improvement of the Health Physics Program	14

NUCLEAR NOTIFICATIONS

NUMBER				
200623393	200760647	200711239	201184283	201119045

RADIATION EXPOSURE PERMITS

NUMBER	TITLE
A0316100022	3SGRP Civil Platform Modifications
A0316100022	R3C16 SGRP General Support
00800167713	High Pressure Safety Injection Check
00800313903	LPSI Check Valve to RC Loop 1A
00800313904	LPSI Check Valve to RC Loop 1B
00800313905	LPSI Check Valve to RC Loop 2A

00800313906	LPSI Check Valve to RC Loop 2B
00800457805	Reactor Coolant Pump 2A
00800585340	Routine Maintenance

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

TITLE	DATE
2009 Annual Radiation Protection ProgramSummary Report	April 29, 2010
Radiation Protection & Radioactive Material Control; SCE-004-09	April 23, 2009

MISCELLANEOUS

TITLE	DATE
Source Inventory	May 2010

Section 2RS02: Occupational ALARA Planning and Controls

PROCEDURES

NUMBER	TITLE	REVISION
SO123-G-1	SONGS ALARA Expectations	2
SO123-G-2	SONGS Station ALARA Committee and ALARA Sub-Committee Guidelines	4
SO123-VII-20	Health Physics Program	15
SO123-VII-20.4	ALARA Program	6
SO123-VII-20.4.1	ALARA Design Change Reviews	5
SO123-VII-20.4.2	Temporary and Permanent Shielding	13
SO123-VII-20.10	Radiological Work Planning and Controls	16
HP-TG-001	Health Physics Task Guide: R3C16 Steam Generator Replacement Project	0

NUCLEAR NOTIFICATIONS

NUMBER				
200683909	200733221	200747656	200780474	200835690
201040091	201119045	201184283	201186604	201186662

RADIATION EXPOSURE PERMITS

NUMBER	TITLE
A0216090002	Health Physics (Inside Containment)

A0216090004	General Support (Inside Containment)
A0216090008	2SGRP Electrical Activities
A0216090010	2SGRP Scaffolding
A0216090011	2SGRP Insulation Activities
A0216090018	2SGRP Mechanical Work
A0216090022	2SGRP Civil Platform Modifications
A0316100022	3SGRP Civil Platform Modifications
A0316100023	R3C16 SGRP General Support

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

TITLE	DATE
2009 Annual Radiation Protection Program Summary Report	April 29, 2010

MISCELLANEOUS

TITLE	DATE
SONGS Five-Year ALARA Plan (2010-2014)	April 15, 2010
R2C16 SGRP Post-Outage ALARA Report	July 8, 2010
R3C16 Outage ALARA Plan	September 7, 2010
R3C16 SGR REP Activities by Task (with PED Alarm Set Points)	November 1, 2010

Section 2RS06: Radioactive Gaseous and Liquid Effluent Treatment

PROCEDURES

NUMBER	TITLE	REVISION
SO123-III-5.1.23	Units 2/3 Effluent Program	30
SO123-III-5.3.23	Units 2/3 Condenser Air Ejector	4
SO123-III-5.42	Evaluating Miscellaneous Release Sources	10

SO123-III-5.23	Generating Effluent Release Permits Using the VAX Computer	9
SO123-III-5.10	Liquid and Gaseous Effluent Dose Determinations	13
SO123-III-5.51	Effluent Offside Analysis Program	10
SO123-XXIV-10.1	Preparation, Review, Approve, Issuance, Implementation, and Closure of Engineering Change Packages (NECPs) and Engineering Change Notices (ECNs)	18
SO123-XXIV-10.1	Preparation, Review, Approve, Issuance, Implementation, and Closure of Engineering Change Packages (NECPs) and Engineering Change Notices (ECNs)	21
SO123-XXIV-10.1	Engineering Design Change Process – NECPs	23

NUCLEAR NOTIFICATIONS

NUMBER				
200107813	200192238	200136533	200339741	200379633
200459231	200733163	200789383	200855515	200966238

RELEASE PERMITS

NUMBER				
L2010035	L2010079	L2010104	G2010058	G2010079

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
SCES-008-010	Environmental Offsite Dose Calculation Manual Program Audit	September 17, 2010

IN-PLACE FILTER TESTING RECORDS

SYSTEM	TEST	DATE
Control Room Emergency Air Cleaning-ME418	Carbon Sample	April 14, 2010
Control Room Emergency Air Cleaning-ME418	Carbon Sample	October 24, 2008

Control Room Emergency Air Cleaning-ME418	Filter Testing	October 10, 2010
Control Room Emergency Air Cleaning-ME418	Filter Testing	May 20, 2009
Control Room Emergency Air Cleaning-ME419	Carbon Sample	September 13, 2010
Control Room Emergency Air Cleaning-ME419	Carbon Sample	June 25, 2009
Control Room Emergency Air Cleaning-ME419	Filter Testing	September 16, 2010
Control Room Emergency Air Cleaning-ME419	Fiter Testing	June 26, 2009

PLANT DRAWINGS

NUMBER	TITLE	REVISION
S2-1501-ML-007, Sheet 1	Containment Purge Stack to Switch Manifold	0
S2-1501-ML-008, Sheet 1	Switch Manifold to Sample Conditioning Skid	0
S2-1501-ML-010, Sheet 1	Sample Detection Skid to Plant Vent Stack	0
S2-1501-ML-050, Sheet 1	2RE-7828 to Containment Purge Stack	1
S2-1501-ML-050, Sheet 2	2RE-7828 to Containment Purge Stack	1
S2-1501-ML-050, Sheet 3	2RE-7828 to Containment Purge Stack	1
S2-1501-ML-050, Sheet 4	2RE-7828 to Containment Purge Stack	1
S2-1501-ML-051, Sheet 1	Line 050 to Containment Purge Stack	1
S2-1501-ML-051, Sheet 2	Line 050 to Containment Purge Stack	1
S2-1501-ML-054, Sheet 1	2RE7828 to Containment Vent Stack	1
S2-1500-ML-098, Sheet 1	Plant Vent Stack to Switch Manifold	1

MISCELLANEOUS

NUMBER	TITLE	REVISION
J-SPA-229	Plateout of Particulates in Airborne Radiation Monitoring Sample Lines	0
800241479	Install Parallel Filter Cartridges on Containment Purge Radiation Monitors	0
	Annual Radioactive Effluent Release Report	2009
	Annual Radioactive Effluent Release Report	2008

Section 4OA1: Performance Indicator Verification

PROCEDURES

NUMBER	TITLE	REVISION
SO23-XXXVI-2.6	Evaluation of Reactor Coolant System (RCS) Activity	11
SO23-XV-24	Quarterly NRC Performance Indicator (PI) Process	8
SO123-XV-5.3	Maintenance Rule Program	12 EC 1

NUCLEAR NOTIFICATIONS

NUMBER				
200645190	200960017	201120245	200793188	201128936
201036129				

MAINTENANCE ORDERS

NUMBER
800552267

MISCELLANEOUS

NUMBER	TITLE	REVISION
NFM-FR-2010-01	SONGS Nuclear Fuel Reliability	0
NFM-FR-2010-05	SONGS Nuclear Fuel Reliability	0
NFM-FR-2010-09	SONGS Nuclear Fuel Reliability	0
NFM-FR-2010-12	SONGS Nuclear Fuel Reliability	0
	San Onofre Nuclear Generating Station Management Review Meeting	November 23, 2010
	Control Room Logs	

Section 4OA2: Identification and Resolution of Problems

PROCEDURES

SO23-XXI-1.11.CAP	Training Procedure	0
SO123-XV-50	Corrective Action Program	23
SO123-XV-50.Cap-1	Writing Nuclear Notifications for Problem Identification and Resolution	5
SO123-XV-50.CAP-2	SONGS Nuclear Notification Screening	9
SO123-XV-50.CAP-3	Corrective Action Program Evaluations and Action Plans	12
SO123-XV-50.CAP-4	Implementing Corrective Actions	6
SO123-XV-50.CAP-5	Effectiveness Review for Corrective Action to Prevent Recurrence (CAPR)	3
SO123-XV-302	Effectiveness Review Process	1
SO123-XV-303	Closure Review Process	2
SO123-I.48	Temporary Supervisor and PRO Supervisor Responsibilities	7
SO123-XV-52.1	Operability Determination Oversight and Monitoring	1

NUCLEAR NOTIFICATIONS

NUMBER

201203374	201197371	201168011	201159165	201181917
201183530	201183395	201181864	201245423	201208959
201203374	201122165	201156046	201223765	200260963
000201169796	200781031	200959720	200824124	201233450
201233567	201233583	201208959	200823967	201237307
201016470				

WORK ORDERS

NUMBER

800596401	800604672	800604017

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE

	SONGS Response to NRC Concerns of Inverter Operability	
LCO 3.8.8	"Inverters – Shutdown"	
LOCTR	3-EDMR-2010-0141	
SCES-014-09	Corrective Action & Self-Assessment Program Audit	March 5, 2010
	Issue Detail MRC Report, Management Review Committee	December 9, 2010
	Curriculum Review Committee Minutes	August 18, 2010
	Cause Evaluation: PI&R Cross-Cutting Check & Adjust Analysis	September 7, 2010
	Multiple Metrics Data Charts (Related to the results of the corrective action program improvement program)	
	Current Corrective Action Program Training included in the General Employee Training	
	Management Performance Development Plan (1st, 2nd, 3rd, quarters 2010)	

Section 4OA2: Identification and Resolution of Problems

SITE INTEGRATED BUSINESS PLAN ACTION ITEMS

ACTION NUMBER	SAP NUMBER	CLOSURE DATE
5.21.1.A	O-800482555-0010	May 26, 2010
5.21.1.B	N-200758654-0002	November 8, 2010
5.21.1.C	O-800482558-0010	May 19, 2010
5.21.1.F	N-201018826-CA0002	November 3, 2010
5.21.1.G	N-201018826-CA0016	October 21, 2010
5.21.1.H	N-201018826-CA0017	November 15, 2010
5.21.1.I	N-201018826-CA0020	October 29, 2010
5.21.1.J	N-201018826-CA0018	November 3, 2010
5.21.1.K	O-800351647-0010	February 8, 2010
5.21.1.L	O-800073513-0260	October 27, 2009
5.21.1.N	O-800073513-0360	October 29, 2009

5.21.1.P	O-800073513-0270	October 29, 2009
5.21.1.Q	O-800390353-0010	October 22, 2010
5.22.1.A	O-800389752-0010	September 1, 2010
5.22.1.B	O-800389749-0010	October 28, 2010
5.22.1.C	O-800437935-0010	June 3, 2010
5.22.1.D	O-800389748-0010	May 26, 2010
5.22.1.E	O-800389735-0010	September 1, 2010
5.22.1.F	N-201018826-CA0015	November 2, 2010
5.22.1.G	N-201018826-CA0021	October 28, 2010
5.22.1.H	O-800351651-0010	March 3, 2010
5.22.1.I	O-800240411-0150	November 2, 2010
5.22.1.J	N-201018826-CA0012	November 3, 2010
5.22.1.K	N-201018826-CA0004	December 7, 2010
5.22.1.N	O-800511191-0010	November 3, 2010
5.22.1.O	O-800073513-0410	October 8, 2009
5.22.1.P	O-800073513-0420	October 8, 2009
5.22.1.Q	O-800351901-0010	March 18, 2010
5.22.1.R	O-800073513-0060	July 29, 2009
5.22.1.U	O-800073513-0260	October 26, 2009
5.22.1.X	O-800073513-0360	October 27, 2009
5.22.1.Z	O-800073513-0270	October 19, 2009
5.23.1.A	O-800511009-0010	November 3, 2010
5.23.1.B	N-201018826-CA0007	November 3, 2010
5.23.1.C	N-201018826-CA0008	December 7, 2010
5.23.1.E	N-201018826-CA0009	November 2, 2010
5.23.1.F	N-201018826-CA0019	November 24, 2010
5.23.1.G	O-800073513-0260	October 27, 2009
5.23.1.I	O-800073513-0360	October 29, 2009
5.23.1.J	N-201018826-CA0011	November 3, 2010
5.23.1.K	N-201018826-CA0014	December 7, 2010

5.23.1.M	O-800073513-0270	October 29, 2009
5.23.1.N	O-800390353-0010	October 28, 2010

Section 4OA3: Event Follow-Up

PROCEDURES

NUMBER	TITLE	REVISION
SO123-XX-5.1	Unplanned Modifications	21
SO23-6-17.1	Non-1E UPS 120VAC Instrument and Control Power	29
SO123-XX-5.1	Work Clearance Management (WCM) Issue, Release and Tagging Modifications	23
SO123-XX-5	Work Clearance Application/ Work Clearance Document/ Work Authorization Record (WCA / WCD / WAR)	33
SO123-XV-HU-1	Site Human Performance Event-Free Day Reset Criteria	10
SO23-13-2	Shutdown From Outside the Control Room	13

NUCLEAR NOTIFICATIONS

NUMBER				
201133936	201181603	201205637	200235512	201246892
201246828	201218608	201211093	200304816	201038508

WORK ORDERS

NUMBER				
30006078	800517039	70004298	30016930	30005658
30016930	800217400			

DRAWINGS

NUMBER	TITLE	REVISION
40124BSO3	Reactor Coolant Chemical and Volume Control System	30
40112ASO3	Safety Injection System	40
40112BSO3	Safety Injection System	37
40114ASO3	Containment Spray System	15
40114BSO3	Containment Spray System	16
40114DSO3	Containment Spray System	19
50196	Operational Plan Profile Equipment Elevations for RCS Flood-Up and Drain-Down	2

32109	One Line Diagram 4160V Switchgear Bus 3AO6	19
32142	One Line Diagram 480V Motor Control Center 3BJ	28
32164	One Line Diagram 480V Motor Control Center 3BZ	35
40112ASO3	Safety Injection System	38
40112BSO3	Safety Injection System	37
40114ASO3	Containment Spray System	15
40112BSO3	Fuel Pool Cooling System	22
40124BSO3	Reactor Coolant Chemical and Volume Control System	30
3-16930	Fuel Pool Cooling System	22
32165, Sheet 4	Non-1E UPS System	25
40122BSO3	Fuel Pool Cooling System	22
30344, Sheet 1	Elementary Diagram, Diesel Generator DG002, Excitation	14
30344, Sheet 2	Elementary Diagram, Diesel Generator DG002, Excitation	14
35472, Sheet 1	Control Building – Area CA7B, Tray Plan, Elevation 9'-0" to 30'-0"	16
35473, Sheet1	Control Building – Area CA7, Conduit & Tray Plan, Elevation 30'-0" to 50'-0"	41
35477	Control Building – Area CA7, Conduit Layout, Elevation 9'-0" to 30'-0"	20
39991	Control Building – Area CA7A, Conduit & Tray Plan, Elevation 9'-0" to 30'-0"	18
39992	Control Building – Area CA7C, Conduit & Tray Plan, Elevation 9'-0" to 30'-0"	23
39994, Sheet 1	Control Building – Area CA8C, Conduit & Tray Plan, Elevation 9'-0" to 30'-0"	17

MISCELLANEOUS

NUMBER	TITLE	DATE
Email dated September 28, 2010	Harris RWST Operability /50.59 question	September 28, 2010
	Archived Operator Log – November 16, 2010	November 17, 2010

Section 4OA5: Other Activities

PROCEDURES

NUMBER	TITLE	REVISION / DATE
	San Onofre Units 2 and 3 Final Safety Analysis Report, Updated	April 2009
Regulatory Guide 1.29	Seismic Design Classification	1978
SO123-0-A3	Procedure Use	10 EC 10-1
SO123-XIII-4.600	Fire Protection Impairment	11
SO123-XV-1.20	Seismic Controls	2
SO123-XV-50	Corrective Action Program	20
SO123-XV-50.CAP-1	Writing Nuclear Notifications for Problem Identification and Resolution	5
SO123-XV-50.CAP-2	SONGS Nuclear notification Screening	7
SO123-XV-50.CAP-3	Corrective Action Program Evaluations and Action Plans	11
SO123-XV-50.CAP-3.1	Common Cause Evaluation	0
SO123-XV-50.CAP-4	Implementing Corrective Actions	6
SO123-XV-50.CAP-5	Effectiveness Review for Corrective Action to Prevent Recurrence (CAPR)	3
SO123-XV-52	Operability Determinations and Functionality Assessments	18
SO123-XV-60.1	Onsite Review Committee (OSRC)	10 EC-1
SO123-XV-91	Reactivity Management Implementation	4
SO123-XV-HU-1	Human Performance Program	8
SO123-XV-HU-2	Human Performance Tools	4
SO123-XV-HU-3	Written Instruction Use and Adherence	4
SO123-XV-HU-4	Human Performance Roles and Responsibilities	1
SO123-XVI-24	Electrical Safe Work Practices	11
SO123-XX-6	Operator Work Around Program	8
SO23-2-15	Hydrogen System Bank Operation	10 EC 10-2
SO23-2-17	Component Cooling Water System Operation	34

SO23-2-4	Auxiliary Feedwater System Operation	28
SO23-3-2.1.2	Chemical and Volume Control System Removal/Return to Service Evolutions (Online or Outage)	7
SO23-3-2.13	Core Protection/Control Element Assembly Calculator Operation	16
SO23-3-2.6	Shutdown Cooling System Operation	28
SO23-3-2.7	Safety Injection System Operation	25
SO23-3-3.28	Attachment 3, Remote Shutdown Monitoring Instrumentation (RSMI)/Safe Shutdown (SSD) Monthly Checks	17
SO23-3-3.31.6	Main and Auxiliary Feedwater Valve Testing – Offline or Long Interval	12
SO23-4-1	Sodium Hypochlorinator Operation	25
SO23-5-1.7	Power Operations	45
SO23-9-11	Waste Neutralization Operation	22
SO23-9-9	Condenser Overboard Operations	5
SO23-10-7	Condenser Air Removal System Operations	37
SO23-12-1	Standard Post Trip Actions	22
SO23-13-28	Rapid Power Reduction (RPR)	2
SO23-V-3.25	Component Cooling Water Heat Exchanger Testing	11 EC 1
SO23-V-3.26	Shutdown Cooling Heat Exchanger Testing	4 EC 4-1
SO23-XIII-4.13	Inspection for Control of Combustibles and Transient Loads	2 EC 2-1
SO23-XV-4.13	Control of Work and Storage Areas Within the Protected Area	7
SO23-XX-31	Control of Work and Storage Areas Within the Protected Area During Unit Outages at Songs 2 and 3	0
SO23-XX-4.13	Control of Work and Storage Areas Within the Protected Area	7
TQAM	SONGS Topical Quality Assurance Manual	24

NUCLEAR NOTIFICATIONS

NUMBER

200213530	200448759	200481911	200530343	200694047

200758654	200770458	200780929	200781022	200806145
200897833	200911250	200915334	200939196	200961310
201004301	201018826	201055588	201061076	201092805
201093082	201137112	201140052	201140094	201140571
201142066	201142137	201142167	201142229	201142972
201143057	201143159	201144226	201144417	201144431
201144584	201144590	201144795	201145122	201146023
201146030	201146031	201146032	201146991	201147127
201148272	201148312	201148413	201148415	201148489
201148541	201148567	201148578	201149399	201149675
201149744	201149786	201149915	201150873	201151091
201152619	201152679	201152898	201153727	

ACTION REQUESTS

NUMBER	
000101727-01	000101733-01

MAINTENANCE ORDERS

NUMBER				
30006149	30006821	800141101	800450350	800493190
800502852				

MISCELLANEOUS

NUMBER	TITLE	DATE
	Confirmatory Order Monitoring Report through May 31, 2010	
	Plant Area Drawing for Units 1, 2 & 3	December 10, 2001
	Fire Watch Logs	Various
	Fix-It-Now Team Work Schedules	October 5-14, 2010
	Operational Distraction Index Summary	October 12, 2010
	Problem Identification and Resolution, Safety Conscious Work Environment, Human Performance	September 6, 2010

	San Onofre Units 2 and 3 Technical Specifications	
	San Onofre Units 2 and 3 Licensee Controlled Specifications	
	Site Indicated Core Indicators	August 2010
	Updated Fire Hazards Analysis Report	August 2001
	San Onofre Units 2 and 3 Final Safety Analysis Report, Updated	
10060012	Fire Protection Impairment	June 4, 2010
40011	Unit 2 and 3 Drawing Area Index Plan	2
SO23-403-9-1-8	Schematic Flow Diagram, Bulk Gaseous Supply System (Hydrogen)	May 1979

Section 4OA5: Other – Confirmatory Order EA-07-232

PROCEDURES

NUMBER	TITLE	REVISION
SO123-XV-50	Corrective Action Program	21
SO123-XV-50.CAP-2	SONGS Nuclear Notification Screening	8
SO123-XV-60.1	Onsite Review Committee (OSRC)	10 EC 10-1
SO123-XV-52	Functionality Assessment and Operability Determinations	18
SO123-XV-3.3	NRC Reporting Requirements and Assessments	17
SO123-XV-50.CAP-3.1	Common Cause Evaluation	1
SO123-XV-50.CAP-2	SONGS Nuclear Notification Screening	9
SO123-0-A7	Notification and Reporting of Significant Events	23

NUCLEAR NOTIFICATIONS

NUMBER

201152700	201154359	201154361	200501125	200733257

200740135 200765235 200888616 201038508

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	Confirmatory Order Monitoring Report through May 31, 2010	
	Management Review Committee Agenda	October 7, 2010
	Management Review Committee Agenda	October 6, 2010
	Corrective Acton Review Board Agenda	October 8, 2010
	Corrective Acton Review Board Agenda	October 6, 2010
	Safety Conscious Work Environment Task Group Charter	
SO123-XV-HU-1	Human Performance Program	8
SO123-XV-HU-2	Human Performance Tools	4
SO123-XV-HU-3	Written Instruction Use and Adherence	4
SO123-XV-HU-4	Human Performance Roles and Responsibilities	1
	San Onofre Nuclear Generating Station Management Review Meeting (October 2010 Data)	November 23, 2010

Section 4OA5: Temporary Instruction 2515/179

PROCEDURE

NUMBER	TITLE	REVISION
SO123-VII-20.14.9.1	Receipt, Inventory and Leak Testing of Sealed Radioactive Sources	8

MISCELLANEOUS DOCUMENTS

TITLE	DATE
NSTS Annual Inventory Reconciliation	January 26, 2010