UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

May 8, 2013

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 05000361/2013002 and 05000362/2013002

Dear Mr. Dietrich:

On March 24, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your San Onofre Nuclear Generating Station, Units 2 and 3, facility. The enclosed inspection report documents the inspection results which were discussed on April 2 and 25, 2013, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Six NRC-identified findings of very low safety significance (Green) were identified during this inspection. Five of these findings were determined to involve violations of NRC requirements. The NRC is treating these violations as noncited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest these 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 DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at San Onofre Nuclear Generating Station.

If you disagree with a crosscutting aspect assignment 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 San Onofre Nuclear Generating Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of

NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Ryan E. Lantz, Chief
SONGS Project Branch
Office of the Regional Administrator

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

Enclosure:
NRC Inspection Report 05000361/2013002
and 05000362/2013002 w/attachment:
Supplemental Information

cc w/enclosure:
Electronic Distribution

Electronic distribution by RIV:
Regional Administrator (Art.Howell@nrc.gov)
Acting Deputy Regional Administrator (Robert.Lewis@nrc.gov)
DRP Director (Kriss.Kennedy@nrc.gov)
Acting DRP Deputy Director (Michael.Scott@nrc.gov)
DRS Director (Tom.Blount@nrc.gov)
Acting DRS Deputy Director (Jeff.Clark@nrc.gov)
Acting SONGS Special Project Team Manager (James.Andersen@nrc.gov)
Senior Resident Inspector (Greg.Warnick@nrc.gov)
Resident Inspector (John.Reynoso@nrc.gov)
Administrative Assistant (Heather.Hutchinson@nrc.gov)
Chief, SONGS Project Branch (Ryan.Lantz@nrc.gov)
Senior Project Engineer, SPB (Nick.Taylor@nrc.gov)
Project Engineer, SPB (Brian.Parks@nrc.gov)
Public Affairs Officer (Victor.Dricks@nrc.gov)
Public Affairs Officer (Lara.Uselding@nrc.gov)
Project Manager (Alan.Wang@nrc.gov)
Chief, DRS/TSB (Ray.Kellar@nrc.gov)
Fee Coordinator (Marisa.Herrera@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Technical Support Assistant (Loretta.Williams@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
ROPreports.Resource@nrc.gov
RIV/ETA:OEDO (Doug.Huyck@nrc.gov)

R:_REACTORS_2013\SO IR 13-02 ADAMS ML13129A282

ADAMS: □ No ☒ Yes	☒ SUNSI Review Complete	Reviewer Initials: GAG
	☒ Publicly Available	☒ Nonsensitive
	□ Nonpublicly Available	□ Sensitive

RIV:Acting SRI	SRI:ORA/SPB	RI:ORA/SPB	SPE:ORA/SPB	C:DRS/EB1	C:DRS/EB2
GAGeorge	GWarnick	JPReynoso	NHTaylor	TRFarnholtz	GBMiller
/RA/	***E - /RA/***	***E - /RA/***	***/RA/***	***GAGeorge for***	***GAPick for***
4/26/13	5/7/13	5/6/13	4/24/13	4/26/13	4/26/13
C:DRS/OB	C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	C:ORA/ACES	C:ORA/SPB
VGGaddy	MSHaire	JEDrake	RLKellar	HJGepford	RELantz
/RA/	***JRLarsen for***	***/RA/***	***JEDrake for***	***RSBrowder***	***/RA/***
5/7/13	4/26/13	4/26/13	4/26/13	5/8/13	5/8/13

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

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-361, 50-362
License:	NPF-10, NPF-15
Report:	05000361/2013002 and 05000362/2013002
Licensee:	Southern California Edison (SCE)
Facility:	San Onofre Nuclear Generating Station, Units 2 and 3
Location:	5000 S. Pacific Coast Hwy San Clemente, CA
Dates:	January 1 through March 24, 2013
Inspectors:	S. Garchow, Senior Operations Engineer G. George, Acting Senior Resident Inspector G. Warnick, Senior Resident Inspector C. Hale, Reactor Inspector S. Hedger, Operations Engineer N. Hernandez, Operations Engineer J. Laughlin, Emergency Preparedness Inspector B. Parks, Project Engineer J. Reynoso, Resident Inspector N. Taylor, Senior Project Engineer E. Uribe, Reactor Inspector G. Warnick, Senior Resident Inspector M. Williams, Reactor Inspector
Approved By:	Ryan E. Lantz, Chief SONGS Project Branch Office of the Regional Administrator

Enclosure

SUMMARY OF FINDINGS

IR 05000361/2013002, 05000362/2013002; 01/01/2013 – 03/24/2013; San Onofre Nuclear Generating Station, Units 2 and 3, Integrated Resident and Regional Report; Adverse Weather; Operability Evaluations and Functionality Assessments; Problem Identification and Resolution and Other Activities.

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspection by region-based inspectors. Five Green noncited violations of significance were identified. One Green finding was 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 inspectors identified a Green noncited violation of Technical Specification 5.5.1.1 for the failure by licensee personnel to follow Procedure SO23-XX-30, "Nuclear Maintenance Order (NMO) Generation, Screening and Classification," Revision 9 EC1, and Procedure SO23-XX-36, "Toolpouch Maintenance Program," Revision 1 EC1. Specifically, prior to March 5, 2013, the licensee's Nuclear Maintenance Order Screening Committee failed to assign the appropriate job type and priority to seven corrosion-related nuclear maintenance orders in accordance with Procedure SO23-XX-30. Additionally, between February 9, 2012, and February 19, 2013, the Nuclear Maintenance Order Screening Committee failed to ensure the required conditions were met prior to assignment of toolpouch maintenance tasks for four nuclear notifications in accordance with Procedure SO23-XX-36. This issue has been entered into licensee's corrective action program as Nuclear Notifications 202346546 and 202351959.

  The inspectors determined that the failure by the licensee's personnel to follow Procedure SO23-XX-30 to assign the appropriate job types and priority for corrosion-related nuclear maintenance orders, and the failure to follow Procedure SO23-XX-36 for the conduct of toolpouch maintenance were performance deficiencies. These performance deficiencies were more than minor, and therefore a finding, because they were associated with the Initiating Events Cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors determined that Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," was appropriate

based on the plant conditions present when most of the examples of this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). This finding had a crosscutting aspect in the area of human performance, decision-making component, because the Nuclear Maintenance Order Screening Committee failed to use conservative assumptions in decision making when assigning job types and tool pouch maintenance tasks for nuclear notifications [H.1(b)] (Section 4OA5).

- Green. The inspectors identified a Green finding for failure to follow the requirements of the Plant Preservation Rust Grading and Budget Preparation Guide. Specifically, prior to February 28, 2013, licensee personnel failed to initiate nuclear notifications for plant areas that received a rust grade of 4 or higher. This issue has been entered into the licensee's corrective action program as Nuclear Notification NN 202341172.

  The inspectors determined that the failure to initiate nuclear notifications for the areas assigned a rust grade of 4 as required by the Plant Preservation Rust Grading and Budget Preparation Guide was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the Initiating Events Cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors determined that Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," was appropriate based on the plant conditions present when most of the examples of this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). This finding has a crosscutting aspect in the area of problem identification and resolution, corrective action program component, because the licensee failed to implement a corrective action program with a low threshold for identifying issues [P.1(a)] (Section 4OA5).

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of the licensee to implement procedures associated with entry of degraded or nonconforming issues into the corrective action program. Specifically, the NRC staff identified seven examples of problems that were not documented in a nuclear notification until prompted by NRC many days or years after they were

known to the licensee between June 2009 and January 2013. This issue has been entered into licensee's corrective action program as Nuclear Notification NN 202364842.

The inspectors determined that the failure of licensee personnel to write nuclear notifications in accordance with Procedure SO123-XV-50.CAP-1 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the Mitigating Systems Cornerstone attribute for equipment performance and 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 determined that Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," was appropriate based on the plant conditions present when most of the examples of this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). This finding had a crosscutting aspect in the area of the problem identification and resolution corrective action program component, because the licensee failed to implement a corrective action program with a low threshold for identifying issues [P.1(a)] (Section 4OA2).

- Green. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to accomplish activities in accordance with procedures. Specifically, prior to March 4, 2013, the licensee failed to accomplish inspections and maintenance of the downstream face of the probable maximum flood berm in accordance with Attachments 1 and 3 of Procedure SO123-XVIII-35, "Inspection and Maintenance of Seawall, Offsite Probable Maximum Flood Berm and Channel, and Related Drainage Facilities." These issues have been entered into the licensee's corrective action program as Nuclear Notifications NN 202346674, NN 202354058, and NN 202359197.

  The inspectors determined that the licensee's failure to accomplish inspections and maintenance in accordance with Procedure SO123-XVIII-35 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because, if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, the licensee routinely failed to maintain and inspect the downstream face of the berm for vegetation overgrowth, structural integrity, and animal burrows, resulting in identified degradation conditions during subsequent inspections. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the finding screened as potentially risk important, affecting the Mitigating Systems Cornerstone attribute for external events mitigating systems, because the finding resulted in the degradation of equipment specifically designed to mitigate a flooding initiating event. Therefore, a Region IV senior reactor analyst performed a detailed risk evaluation using NRC

Inspection Manual Chapter 0609, Appendix M, “Significance Determination Process Using Qualitative Criteria.” Based on the inspector’s observation of the condition of the berm, the senior reactor analyst determined that, even though the berm was degraded, it remained functional. Since the probable maximum flood berm remained functional, there was no quantifiable change to the core damage frequency or the large early release frequency. Therefore, the finding was of very low safety significance (Green). This finding had a crosscutting aspect in the area of human performance, resources component, because the licensee did not ensure personnel were available and adequate to assure nuclear safety [H.2(b)] (Section 1R01).

- Green. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure of operations personnel to implement procedures associated with evaluating the impact of degraded or nonconforming conditions on the operability of equipment required by technical specifications. Specifically, between December 2010 and February 2013, the inspectors identified 15 examples of operations personnel failing to follow Procedure SO123-XV-50.CAP-2, “SONGS Nuclear Notification Screening,” Attachment 3, step 6.2.9, resulting in the failure to complete the immediate operability determination or the immediate functionality assessment as required. This issue has been entered into licensee’s corrective action program as Nuclear Notification NN 202337603.

  The inspectors determined that the failure of operations personnel to follow Procedure SO123-XV-50.CAP-2 for screening nuclear notifications was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it is associated with the Mitigating Systems Cornerstone attribute for equipment performance and 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 determined that Manual Chapter 0609, Appendix G, “Shutdown Operations Significance Determination Process,” was appropriate based on the plant conditions present when most of the examples of this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). This finding had a crosscutting aspect in the area of the human performance decision-making component, because operations personnel used nonconservative assumptions about depth of corrosion and corrosion rates to screen multiple degraded or nonconforming conditions out of the operability determination process [H.1(b)] (Section 1R15).

- Green. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Actions,” associated with the licensee’s failure to take appropriate and prompt corrective actions regarding nitrogen gas accumulation in the safety-related auxiliary feedwater system. Specifically, from March 2012 until January 2013, a condition adverse to quality related to the

accumulation of gas, from steam generator nitrogen purge into piping and safety-related pumps in the Unit 2 auxiliary feedwater system, was not promptly identified and corrected until a gas binding event occurred during a start of an auxiliary feedwater pump in Unit 3 on January 2, 2013. This issue has been entered into the licensee's corrective action program as Nuclear Notifications NN 202268941 and NN 202382092.

The inspectors determined that the failure to take prompt corrective actions for nitrogen gas accumulation in the safety-related auxiliary feedwater system as required by 10 CFR Part 50, Appendix B, Criterion XVI was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the Mitigating Systems Cornerstone attribute for equipment performance and 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 determined that Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," was appropriate based on the plant conditions present when this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). The inspectors determined that the finding had a crosscutting aspect in the area of the human performance decision-making component, because the licensee did not make safety-significant or risk-significant decisions using a systematic process when they identified a degraded condition of gas accumulation in the auxiliary feedwater system [H.1(a)] (Section 4OA2).

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period shutdown for Refueling Outage R2C17 and remained shutdown for the duration of the inspection period.

Unit 3 began the inspection period shutdown for Forced Outage F3C16 and remained shutdown for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness to Cope with External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Updated Final Safety Analysis Report (UFSAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed an inspection of the protected area to identify any modification to the site that would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure for mitigating the design basis flood to ensure it could be implemented as written. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one external flooding sample as defined in Inspection Procedure 71111.01-05.

b. Findings

Failure to Completely Inspect and Maintain Probably Maximum Flood (PMF) Berm

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for failure to accomplish activities in accordance with procedures. Specifically, the licensee failed to accomplish inspections and maintenance of the downstream face of the PMF berm in accordance with Attachments 1 and 3 of Procedure SO123-XVIII-35, “Inspection and Maintenance of Seawall, Offsite Probable Maximum Flood Berm and Channel, and Related Drainage Facilities.”

Description. As described in San Onofre Nuclear Generating Station UFSAR, Section 2.4, "Hydrology," the licensee employs a safety-related PMF berm and diversion channel to divert runoff from the hills east of the nuclear plant site into the San Onofre Creek basin during a PMF event.

To ensure that the PMF berm and channel remain in a condition that will protect the nuclear plant site, the licensee inspects and maintains the berm using Procedure SO123-XVIII-35. This procedure establishes annual and 5-year inspection requirements, maintenance instructions, and acceptance criteria for the PMF berm and diversion channel.

The annual inspection and acceptance criteria contained in Procedure SO123-XVIII-35, Attachment 1, directs the licensee to maintain the PMF berm and channel by removing debris, inspecting for animal burrows and erosion, filling degraded areas, and controlling vegetative growth. Specifically, Attachment 1 contains the following specific criteria for inspection of the downstream face of the PMF berm:

- Inspect berm and channel for erosion. If erosion to the non-lined portion of the berm fill exceeds a depth of two feet, repair the berm fill using native soil meeting the requirements of the as-built documents.

- Inspect cut and fill slopes of the berm and channel for any significant landsliding. If landsliding has occurred, the DE Civil Group shall be contacted immediately, prior to repair and maintenance work.

- Inspect berm and channel areas, including the debris basin berm, for obvious displacement of berm fill by rodents or other animals that might cause detrimental seepage. The inspection shall include the upstream and downstream faces of the abutment, interior and exterior embankment, and slopes and toes.

Additionally, included in Procedure SO123-XVIII-35, Attachment 3, are the inspection and acceptance criteria for 5-year inspections established to conform to Regulatory Guide 1.127, "Inspection of Water-Control Structures Associated with Nuclear Power Plants." Specifically, Attachment 3 contains the following specific criteria for inspection of the downstream face of the PMF berm:

- Settlement. Examine embankment and downstream toe areas for any evidence of unusual localized or overall settlement, depressions, sink holes, or displacement of fill.

- Slope Stability. Examine embankment slopes for irregularities in alignment and variances from originally constructed slopes, unusual changes from original crest alignment and elevations, evidence of movement at or beyond the toe, surface cracks that may indicate movement, or excessive erosion or deterioration.

- Seepage. Examine the downstream face of abutments, embankment slopes and toes for evidence of existing or past seepage. Also examine the slopes for the presence of animal burrows and vegetative growth that may cause detrimental seepage.

On March 4, 2013, an inspector, accompanied by an SCE facilities employee, completed an inspection of the diversion channel and PMF berm. During this inspection, the inspector noticed that vegetation and debris inside the diversion channel were controlled to minimum heights or removed, as specified in Procedure SO123-XVIII-35. However, vegetation growth was unrestricted on the downstream face of the PMF berm. The inspector noticed that most of the vegetation covering the PMF berm included many small native shrubs, but also included larger woody vegetation growth, such as trees and larger bushes.

Many technical documents related to inspection of earthen water control structures, such as FEMA 534, "Technical Manual for Dam Owners: Impacts of Plants on Earthen Dams," September 2005, note that overgrowth of vegetation on earthen berms can inhibit the ability to inspect the berm for seepage, slumping, settlement, and animal burrows. Additionally, these documents state that, if trees and larger bushes are allowed to remain unchecked, the plants' root systems can degrade the structural integrity of the berm by loosening compacted soil and causing paths for seepage. Based on this information, the inspector determined that the licensee's ability to inspect the downstream embankment and toe area of the vegetation-covered PMF berm for erosion and animal burrows was inhibited. Additionally, the inspector determined that the existence of the trees and larger shrubs could cause structural degradation and paths for seepage to be present on the downstream face of the PMF berm.

The inspector reviewed the December 4, 2012, annual PMF berm inspection report and the October 15, 2010, 5-year PMF inspection report. Neither report specifically documented inspection or degradation of the downstream face of the PMF berm for erosion, slope stability, seepage, detrimental vegetative growth, nor animal burrows. The reports documented that the results of the inspection were "within acceptance criteria of Procedure SO123-XVIII-35."

In response to the inspector's concerns, the licensee wrote Nuclear Notification NN 202346674 to evaluate the vegetation and root degradation on the downstream face of the PMF berm. The licensee's evaluation determined that the existing trees could degrade the PMF berm and hinder the inspection of the downstream and toe face of the PMF berm. This condition was documented in Nuclear Notification NN 202354058. Additional inspection identified an area of localized erosion located on the downstream face of the PMF berm that was not identified during the previous inspections. This condition was documented in Nuclear Notification NN 202359197.

Analysis. The inspectors determined that the licensee's failure to accomplish inspections and maintenance in accordance with Procedure SO123-XVIII-35 was a performance deficiency. The performance deficiency was 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 routinely failed to maintain

and inspect the downstream face of the PMF berm for vegetation overgrowth, structural integrity, and animal burrows, resulting in degraded conditions identified during subsequent inspections. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the finding screened as potentially risk important, affecting the Mitigating Systems cornerstone attribute for external events mitigating systems, because the finding resulted in the degradation of equipment specifically designed to mitigate a flooding initiating event. Therefore, a Region IV senior reactor analyst performed a detailed risk evaluation using NRC Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria." Based on the inspector's observation of the condition of the PMF berm, the senior reactor analyst determined that, even though the PMF berm was degraded, it remained functional. Since the PMF berm remained functional, there was no quantifiable change to the core damage frequency or the large early release frequency. Therefore, the finding was of very low safety significance (Green). This finding had a crosscutting aspect in the area of the human performance resources component, because the licensee did not ensure personnel were available and adequate to assure nuclear safety. Specifically, the licensee did not ensure that training of personnel was adequate to assure that personnel would identify and correct degraded conditions when inspecting the PMF berm [H.2(b)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, "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, and drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished." Contrary to the above, prior to March 4, 2013, the licensee failed to accomplish inspections and maintenance of the downstream face of the PMF berm in accordance with Attachments 1 and 3 of Procedure SO123-XVIII-35. Because this finding has very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notifications NN 202346674, NN 202354058, and NN 202359197, this violation is being treated as a noncited violation consistent with the NRC Enforcement Policy: NCV 05000361; 05000362/2013002-01, "Failure to Completely Inspect and Maintain PMF Berm."

1R04 Equipment Alignment (71111.04)

Partial Walkdown

a. Inspection Scope

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

- February 6, 2013, Unit 2, 480V emergency safety features electrical Buses 2B06 and 2B026
- March 4, 2013, Unit 2, reactor coolant gas vent system

- March 6, 2012, Units 2 and 3, alignment of plant vent effluent monitors associated with SONGS emergency response

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, the 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.

1R05 Fire Protection (71111.05)

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:

- January 22, 2012, Unit 2, auxiliary feedwater (AFW) pump room
- February 4, 2013, Unit 2, emergency diesel generator building
- February 17, 2013, Unit 3, emergency diesel generator building
- February 17, 2013, Unit 3, safety equipment building Rooms 6 through 14 and 16 through 26

The inspectors reviewed areas to assess if licensee personnel 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 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; fire detectors and sprinklers were unobstructed; 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 four quarterly fire protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On February 19, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during operator requalification. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques
- Follow-up actions taken by the licensee for identified discrepancies

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 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On January 17, 2013, the inspectors observed the performance of on-shift licensed operators in the Unit 3 control room and emergency diesel generator building. At the time of the observations, the Unit 3 reactor core was defueled. The inspectors observed the operators' performance of the following activities:

- Operator preparations of emergency diesel generator functional testing

In addition, the inspectors assessed the operators' adherence to plant procedures, including three-way communications and overall command and control involving this evolution.

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

b. Findings

No findings were identified.

.3 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. The examiners observed the associated training cycles for both units during this period.

a. Inspection Scope

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

The inspectors interviewed seven personnel from the licensee's training staff to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written examinations and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included five job performance measures and two 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 14 licensed operators for conformance to license conditions and the licensee's system for tracking qualifications and records of license reactivation for two 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, "Licensed Operator Requalification Significance Determination Process."

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

On December 17, 2012, the licensee informed the lead inspectors of the results of the written examinations and operating tests for the Licensed Operator Requalification Program. The inspectors compared these results to NRC Inspection Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process," values and determined that there were no findings based on these results and that all of the individuals that failed the applicable portions of their examinations and/or operating tests were remediated, retested, and passed their retake exams prior to returning to shift.

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:

- January 16-17, 2013, Unit 2, Train B component water cooling heat exchanger tube leak

The inspectors reviewed events, such as ineffective equipment maintenance which resulted in valid or invalid automatic actuations of engineered safeguards systems. The inspectors 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 whether maintenance effectiveness issues were entered 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 one quarterly maintenance effectiveness sample 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:

- March 13, 2013, Units 2 and 3, risk management actions associated with circulating water stop log installation for intake debris mitigation

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 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 that 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 one maintenance risk assessment and emergent work control inspection sample as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- January 10, 2013, Unit 3, corrosion on cable trays in saltwater cooling tunnel
- January 10, 2013, Unit 2, corrosion on piping
- January 10, 2013, Unit 2, corrosion on diesel cooling water piping
- January 10, 2013, Unit 3, holes in screen wash piping Nuclear Notification NN 201456871
- January 10, 2013, Unit 3, corrosion on AFW pipe support
- January 10, 2013, Units 2 & 3, corrosion on missile shield support
- January 10, 2013, Unit 2, corrosion / pitting on piping
- January 10, 2013, Unit 3, corroded louver welds on emergency diesel generator building
- January 10, 2013, Unit 2, rust blisters on containment penetration
- January 10, 2013, Unit 3, degraded/nonconforming conditions in refueling water storage tank (RWST) from 2009 internal inspection
- January 10, 2013, Units 2 & 3, multiple examples of corrosion on saltwater cooling tunnel piping and fasteners
- January 10, 2013, Units 2 & 3, corrosion on temperature switch
- January 10, 2013, Unit 2, corrosion through turbine building I-beam

- January 10, 2013, Unit3, corrosion on temperature switch

- February 22, 2012, Unit 2, turbine building structural I-beam through-wall corrosion

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify that 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'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. Additionally, the inspectors 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 15 operability evaluation inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

Failure to Properly Screen Nuclear Notifications Results in Missed Operability Determinations and Functionality Assessments

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure of operations personnel to implement procedures associated with evaluating the impact of degraded or nonconforming conditions on the operability of equipment required by technical specifications. Specifically, the inspectors identified 15 examples of operations personnel failure to follow Procedure SO123-XV-50.CAP-2, "SONGS Nuclear Notification Screening," which required these nuclear notifications to be screened for operability impacts.

Description. Procedure SO123-XV-50.CAP-2, Revision 13, step 6.2.9, requires that nuclear notifications associated with certain categories be screened using Attachment 3. Attachment 3 of this procedure provides a checklist to assist the operations staff in determining whether a described condition should "screen out" of the immediate operability assessment/immediate functionality assessment (IOD/IFA) process. For a condition to screen out, all 14 questions in the checklist must be answered "no." The guidance also states that, if any of the questions is answered "yes," the condition "screens in" to the IOD/IFA process, which is governed by Procedure SO123-XV-52, "Operability Determinations and Functionality Assessments."

Question 6 in the checklist reads as follows:

"6. Is corrosion or degradation evident that is NOT minor in nature?"

The inspectors reviewed a number of Nuclear Notifications against the corrosion severity definitions in Procedure SO23-V-8.3, "External Corrosion Control and Aging Program," which provides useful definitions of minor, moderate, significant and severe corrosion. These nuclear notifications included several which were developed by an independent site walkdown by NRC inspectors on January 10, 2013. The following table summarizes the results of the licensee's process in regard to these conditions:

NN #	Description of condition	Comments
201238816	Corrosion on cable trays in saltwater cooling tunnel	Ops described as minor corrosion, Ops determined not in scope of CAP-2. NRC determined clearly within scope of CAP-2, should have had IOD/IFA.
201386381	Corrosion on piping	Ops described as minor corrosion, Ops determined not in scope of CAP-2. NRC determined more than minor corrosion and clearly within scope of CAP-2.
201386417	Corrosion on diesel cooling water piping	Ops described as minor corrosion; Ops determined not in scope of CAP-2. NRC determined more than minor corrosion and clearly within scope of CAP-2.
201456871	Holes in screen wash piping	Ops described as minor corrosion; Ops determined not in scope of CAP-2. NRC determined clearly within scope of CAP-2, should have had IOD/IFA.
202126752	Corrosion on auxiliary feedwater pipe support	Engineering determined this was not a degraded or nonconforming condition (DNC) because corrosion had not caused a failure yet. Based on this call, OPS canceled the IOD/IFA task. NRC determined this condition met the definition of a degraded condition and IOD/IFA was missed.
202158546	Corrosion on missile shield support	Ops described as minor corrosion; Ops determined not in scope of CAP-2. NRC determined more than minor corrosion and clearly within scope of CAP-2, should have had IOD/IFA.

202162324	Corrosion / pitting on piping	Ops described as minor corrosion; Ops determined not in scope of CAP-2. NRC determined more than minor corrosion and clearly within scope of CAP-2, should have had IOD/IFA as more than minor corrosion.
202199743	Corroded louver welds on emergency diesel generator (EDG) building	Ops determined not in scope of CAP-2. EDG building has support function for EDGs. NRC determined clearly within scope of CAP-2, should have had IOD/IFA.
202200848	Rust blisters on containment penetration	Ops described as minor corrosion; Ops determined not in scope of CAP-2. NRC determined more than minor corrosion and clearly within scope of CAP-2; should have had IOD/IFA.
202240127	Degraded/nonconforming conditions in refueling water storage tank from 2009 internal inspection	Ops determined this was an historical issue and out of scope of IOD/IFA program. NRC disagreed, determined degraded or nonconforming condition (foreign material and coating defects) not addressed in IOD/IFA as required.
202291149	Multiple examples of corrosion on saltwater cooling piping and fasteners	Ops described as minor corrosion; Ops determined not in scope of CAP-2. NRC determined more than minor corrosion and clearly within scope of CAP-2; should have had IOD/IFA as more than minor corrosion.
202307659	Corrosion on temperature switch	Ops described as minor corrosion, Ops determined not in scope of CAP-2. NRC determined more than minor corrosion and clearly within scope of CAP-2, should have had IOD/IFA as more than minor corrosion.
202327075	Corrosion through turbine building I-beam	Ops screened out as minor corrosion and not related to tech specs. Corrosion was actually through-wall (not minor) and should have received IFA due to impact on maintenance rule scoped component.
202328484	Corrosion through turbine building I-beam	Ops screened out as minor corrosion and not related to tech specs. Corrosion was actually through-wall (not minor) and should have received IFA due to impact on maintenance rule scoped component.

202227768	Corrosion on refueling water storage tank base weld	Ops described as minor corrosion, Ops determined not in scope of CAP-2. NRC determined more than minor corrosion and clearly within scope of CAP-2; should have had IOD/IFA.

In summary, the inspectors identified 15 nuclear notifications where the required immediate operability determination or immediate functionality assessement was not performed. As a consequence, operations staff did not consider the potential impact of these conditions on systems required to be operable by technical specifications. The inspectors determined that, in the majority of cases reviewed, the licensee failed to take actions to understand the true severity of the corrosion described in the nuclear notifications, causing the operations staff to errantly consider the corrosion to be minor, causing the failure to complete the required immediate operability determination or immediate functionality assessement.

Following identification of these issues by the NRC staff, the licensee developed a required reading document for all licensed and nonlicensed operators to reiterate existing requirements and provide enhanced instructions to help staff understand the different categories of corrosion described in Procedure SO23-V-8.3.

Additionally, the NRC staff noted that all of the examples identified were re-evaluated by the licensee as required by Procedure SO123-XV-52. No systems were declared to be inoperable based on these conditions.

Analysis. The inspectors determined that the failure of operations personnel to follow Procedure SO123-XV-50.CAP-2 for screening nuclear notifications was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the Mitigating Systems Cornerstone attribute for equipment performance and 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 determined that Manual Chapter 0609, Appendix G, “Shutdown Operations Significance Determination Process,” was appropriate based on the plant conditions present when most of the examples of this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross-cutting aspect in the area of the human performance decision-making component, because operations personnel failed to make decisions demonstrating that nuclear safety was an overriding priority. Specifically, operations personnel used nonconservative assumptions about depth of corrosion and corrosion rates to screen multiple degraded or nonconforming conditions out of the operability determination process [H.1(b)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, "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, and drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished." Contrary to the above, between December 2010 and February 2013, the inspectors identified 15 examples of operations personnel failure to follow Procedure SO123-XV-50.CAP-2, Attachment 3, step 6.2.9, resulting in the failure to complete the immediate operability determination or the immediate functionality assessment as required. Because the finding has very low safety significance and has been entered into licensee's corrective action program as Nuclear Notification NN 202337603, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the

NRC Enforcement Policy: NCV 05000361; 05000362/2013002-02, "Failure to Properly Screen Nuclear Notifications Results in Missed Operability Determinations and Functionality Assessments."

1R18 Plant Modifications (71111.18)

Permanent Plant 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:

- January 8, 2013, Unit 2, charging pump cerablanket modification

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; post-modification 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 inspection sample for permanent plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- January 16, 2013, Unit 3, emergency diesel generator post-maintenance test following test valve replacement
- February 27, 2013, Unit 3, P307 saltwater cooling pump check valve MU011 replacement

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 post-maintenance tests to determine whether the licensee was identifying problems, entering them into the corrective action program, and correcting the problems commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two post-maintenance 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)

.1 Refueling Outage

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for Unit 2 Refueling Outage R2C17, which started January 9, 2012, 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. 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 there were controls over switchyard 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

- Maintenance of secondary containment as required by the technical specifications

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

- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing

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

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

Refueling Outage R2C17 was still in progress at the end of this inspection period. Consequently, these activities constitute only a partial completion of one refueling outage and another outage inspection sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings were identified.

.2 Forced Outage

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for Unit 3 Forced Outage F3C16, which started January 31, 2012, 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. During the forced outage, the inspectors 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
- 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
- Maintenance of secondary containment as required by the technical specifications

- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage
- Licensee identification and resolution of problems related to refueling outage activities

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

Forced Outage F3C16 was still in progress at the end of this inspection period. Consequently, these activities constitute only a partial completion of one forced outage and another outage inspection sample 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
- Annunciator and alarm setpoints

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

- February 7, 2013, Unit 3, low pressure safety injection Pump 3MP-016*
- February 19, 2013, Unit 2, Train B emergency diesel generator monthly surveillance
- March 6, 2013, Unit 3, Train A AFW pump 3P504 inservice test

*This sample was completed to credit missed inspection sample in the 2012 inspection cycle.

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

These activities constitute completion of three 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

The Nuclear Security and Incident Response staff performed an in-office review of the latest revisions of various emergency plan implementing procedures and the San Onofre Nuclear Generating Station Emergency Plan, located under ADAMS Accession Numbers ML13002A447, ML13032A140, and ML123630341.

The licensee determined that, in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the emergency plan and that the revised emergency plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC 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. The specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

4OA2 Problem Identification and Resolution (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 issues 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 Semiannual Trend Review

a. Inspection Scope

The inspectors completed a semiannual trend review of repetitive or closely related issues that were documented in corrective action documents, corrective maintenance documents, and the control room logs to identify trends that might indicate the existence of more safety significant issues. The inspectors reviewed the 6-month period between July 1 and December 31, 2012. When warranted, some of the samples expanded beyond those dates to fully assess the issue. The inspectors reviewed the following issue:

- External corrosion

The inspectors compared their results with the results contained in the licensee's routine trend reports. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy. Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one inspection sample.

Assessment and Observations

The inspectors observed that the licensee performed detailed reviews of developing issues. In the past 6 months, over 30 nuclear notifications were written to evaluate emerging trends. The inspectors reviewed the licensee's most recently completed trend report, "SONGS 3Q & 4Q 2012 Trend Report," dated February 11, 2013. This report provides details of 3 newly identified adverse station-level trends, as well as status of 9 open trends, and 14 that had been previously closed. In addition, the report listed 13 issues that had been the subject of common-cause evaluations in the past 6 months.

In addition to those trends identified by the licensee, data associated with external corrosion of plant systems and structures was reviewed to determine if an unrecognized adverse trend existed.

During the review, the inspectors attempted to determine if the number of identified external corrosion notifications indicated a trend in performance. The inspectors noted that Procedure SO-V-8.3, "External Corrosion and Aging Program," Revision 1 EC1,

directs the program owner to trend corrosion related notifications at least quarterly. Contrary to this procedure, the inspectors identified that no such trending has been performed by the licensee's staff since the program ownership changed in mid-2012. (The licensee subsequently documented this noncompliance in Nuclear Notification NN 202314563 on February 6, 2013.) The inspectors determined that this procedure is not required by NRC regulations. In addition, the inspectors determined that this performance deficiency was of minor safety significance.

The procedure also requires that corrosion-related notifications be assigned a predefined "status code" to assist with trending efforts. Using this status code, the inspectors searched the corrective action program for corrosion-related notifications from July 1, 2012, through January 31, 2013. The inspectors found that not all corrosion-related nuclear notifications were assigned this status code, and therefore not considered in trending results. The inspectors determined that this performance deficiency was also of minor safety significance. The licensee came to a similar conclusion in Nuclear Notification NN 202318305, which documented approximately 300 corrosion-related notifications which were not assigned the appropriate trend codes. Based upon these discrepancies, the inspectors determined that corrective action program data could not be used to determine if an adverse trend exists in the area of external corrosion.

The inspectors looked in other administrative processes for indications of external corrosion conditions. The NRC staff noted that identification of external corrosion in the non-safety systems typically requires observations in operator rounds or system engineering periodic walkdowns. The inspectors noted some examples wherein the system engineering periodic walkdowns are completed through analysis of plant data (versus a physical walkdown), making ongoing corrosion monitoring of non-safety systems more difficult.

To further sample the licensee's behaviors with regard to external corrosion issues, the inspectors performed an independent site walkdown on January 10, 2013, to look for evidence of external corrosion. On January 11, 2013, the inspectors presented the results of the inspection, including components with varying degrees of external corrosion. These observations included equipment that was safety-related, nonsafety-related, and security-related. Based upon the licensee's response to these observed conditions, the inspectors identified multiple performance deficiencies that are documented elsewhere in this report, associated with failure to: initiate nuclear notifications, assess degraded conditions for their impact on operability, implement the rust grading process, and assign appropriate job types to corrosion-related nuclear maintenance orders.

The inspectors noted that most external corrosion issues are corrected through the use of toolpouch maintenance tasks, which are not specifically scheduled. The licensee reported during this inspection that the existing backlog of toolpouch tasks is over 1600 items, with an average age of over 500 days. As a result, some external corrosion concerns will not be addressed until over a year has passed from their identification. While such a delay may be reasonable in some circumstances, no process exists to review the ongoing corrosion rate to ensure that these conditions do not degrade to an

unacceptable point while awaiting repair. Additionally, no means have been provided to mark components which have been previously documented as degraded. As a result, the inspectors noted many examples where multiple notifications have been written against the same component.

The inspectors reviewed the criteria in step 6.6.2 of Procedure SO123-XV-SA-3, "Trend Coding and Analysis," Revision 7, and determined that the collective issues related to external corrosion meet multiple criteria to view these issues as an adverse trend. The inspectors noted that on January 16, 2013, the licensee's staff initiated NN 202287590 which, in part, identified this adverse trend.

Lastly, the inspectors noted that the licensee recently completed a common-cause evaluation that explored the increased number of external corrosion issues being documented in the corrective action program. This evaluation, performed under NN 202337939, identified that the various SONGS work groups involved in identifying and correcting corrosion issues lacked alignment and that SONGS processes for dealing with external corrosion lacked rigor to ensure that these issues were consistently and adequately addressed.

These activities constitute completion of one single semiannual trend inspection sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered into the licensee's corrective action program, the inspectors reviewed a corrective action item documenting the issue 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.

- March 14, 2013, Units 2 and 3, completed review of Nuclear Notifications NN 202268941 and NN 202270504, which documented gas binding from unexpected nitrogen gas intrusion in the AFW system

- June 4-10, 2009, Nuclear Maintenance Orders NMO 800065381 and NMO 800065378 inspection results from internal inspections of safety-related tanks

- January 19, 2013, Nuclear Notification NN 201238816 corrosion of cable trays for safety-related cables in saltwater cooling tunnel
- January 19, 2013, carbon steel corrosion of fasteners in saltwater cooling piping
- January 19, 2013, external corrosion pitting of saltwater cooling piping

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

b. Findings

1. Failure to Write Nuclear Notifications for Degraded or Nonconforming Conditions

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of the licensee to implement procedures associated with entry of degraded or nonconforming issues into the corrective action program. Specifically, the NRC identified seven examples of failure to follow Procedure SO123-XV-50.CAP-1, "Writing Nuclear Notifications for Problem Identification and Resolution," because nuclear notifications were not written to document issues until questioning by NRC staff.

Description. The inspectors reviewed several site procedures to gain an understanding of the licensee's threshold for entering issues into the corrective action program.

Procedure SO123-XV-52, "Operability Determinations and Functionality Assessments," provides the following definitions in Section 9.0:

DEGRADED CONDITION:	A degraded condition is one in which the qualification of a structure, system or component (SSC) or its functional capability is reduced. Examples of degraded conditions are failures, malfunctions, deficiencies, deviations, and defective material and equipment. Examples of conditions that can reduce the capability of an SSC are aging, erosion, corrosion, improper operation, and maintenance.
NONCONFORMING CONDITION:	A condition of an SSC that involves a failure to meet the Current Licensing Basis or a situation in which quality has been reduced because of factors such as improper design, testing, construction, or modification.

The inspectors determined that these definitions in the licensee's procedure were consistent with the guidance provided by the NRC in Inspection Manual Part 9900, "Operability Determinations and Functionality Assessments for Resolution of Degraded

or Nonconforming Conditions Adverse to Quality or Safety" (located at http://pbadupws.nrc.gov/docs/ML0813/ML081360529.pdf).

The inspectors noted that Procedure SO123-XV-50.CAP-1, Revision 9, requires that "all SONGS employees . . . are responsible for promptly identifying, reporting, and documenting problems by writing a nuclear notification prior to leaving the site for the day."

Lastly, the inspectors noted that the licensee defines "problems" in Procedure SO123-XV-50, "Corrective Action Program," Attachment 1 as such:

PROBLEM:	A hardware nonconformance or deficiency, a procedural noncompliance, or a defective controlled document.

During a review of safety-related tank inspections performed in June 2009, the inspectors identified several conditions that met the licensee's definitions of either problems, degraded, or nonconforming conditions which did not result in initiation of a nuclear notification:

- June 4, 2009: Rust around weld seams with possible blisters and rust around all pipe penetrations in the common unit nuclear service water storage tank (documented in Nuclear Maintenance Order NMO 800065381).

- June 10, 2009: Large amount of sediment and possible cracking in epoxy coating in the Unit 3 east RWST (documented in Nuclear Maintenance Order NMO 800065378).

The inspectors also noted that multiple degraded or nonconforming conditions that were identified to the licensee following an NRC plant walkdown on January 11, 2013, were not entered into the corrective action program until the NRC questioned the licensee's staff on January 19, 2013. These conditions included:

- Advanced corrosion of cable trays for safety-related cables in the saltwater cooling tunnel

- Multiple examples of rust blisters on safety-related saltwater cooling piping

- Advanced carbon-steel corrosion on fasteners in the safety-related saltwater cooling piping

- External corrosion pitting on safety-related saltwater cooling piping

- Through-wall leakage from Unit 3 screen-wash header weld location

The NRC staff determined that the issues described above represented seven examples of failure to follow Procedure SO123-XV-50.CAP-1. In each example, the required nuclear notification was not written for many days or years after they were known to the licensee.

Analysis. The inspectors determined that the failure by licensee personnel to write nuclear notifications in accordance with Procedure SO123-XV-50.CAP-1 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the Mitigating Systems Cornerstone attribute for equipment performance and 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 determined that Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," was appropriate based on the plant conditions present when most of the examples of this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). This finding had a crosscutting aspect in the area of the problem identification and resolution corrective action program component, because the licensee failed to implement a corrective action program with a low threshold for identifying issues [P.1(a)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, "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, and drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished." Procedure SO123-XV-50.CAP-1, "Writing Nuclear Notifications for Problem Identification and Resolution," Revision 9, requires that "all SONGS employees . . . are responsible for promptly identifying, reporting, and documenting problems by writing an NN prior to leaving the site for the day." Contrary to the above, between June 2009 and January 2013, the licensee failed, with seven examples, to document problems in a nuclear notification for many days or years after the condition became known to the licensee. Because the finding has very low safety significance and has been entered into licensee's corrective action program as Nuclear Notification NN 202364842, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000361; 05000362/2013002-03, "Failure to Write Nuclear Notifications for Degraded or Non-Conforming Conditions."

2. Untimely Corrective Actions for Nitrogen Gas Accumulation in the AFW System

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," associated with the licensee's failure to take appropriate and prompt corrective actions regarding nitrogen gas accumulation in the safety-related AFW system.

Description. On January 2, 2013, the Unit 3 auxiliary feedwater pump was started for maintenance and was immediately secured after indications of gas binding were observed. This condition was noted in the control room logs and documented in Nuclear Notification NN 202268941. The inspectors expressed concerns that a gas binding

event in the Unit 3 AFW pump may be representative of a gas intrusion problem and similar conditions could also impact the Unit 2 AFW system. At the time of the Unit 3 event, Unit 2 was in Mode 5 and Unit 3 was defueled.

Operations personnel initiated an extent of condition evaluation of the Unit 2 AFW system. This evaluation was completed on January 6, 2013. The evaluation included actions to verify Unit 2 AFW system piping was filled by venting low and high points. While performing venting of the AFW system piping, operations personnel found excessive and indeterminate amounts of nitrogen gas. This condition and extent of condition results were documented in Nuclear Notifications NN 202270504 and NN 202270505.

The inspectors continued their assessment of AFW system gas intrusion and performed a search of the licensee corrective action program database between the periods of March 2012 to January 2013. Based on information documented in nuclear notifications, the inspectors identified evidence of an adverse condition trend associated with potential indications of gas accumulation in the AFW systems. The inspectors determined that both Units 2 and 3 AFW systems had evidence of gas accumulation related problems during this period. In addition, there was a potential for gas accumulation in the AFW system prior to Unit 2 entry into Mode 3 on October 23, 2012. The inspectors found numerous nuclear notifications in both Units 2 and 3. Documented conditions noting erratic or erroneous readings in these pressure guages and flow indicators were found as early as March 2012, but these conditions were not described or identified as a long-term gas accumulation problem until September 2012.

The inspectors noted Nuclear Notification NN 202141851 documented a condition on September 17, 2012, in which maintenance personnel observed excessive gas while venting of a Unit 2 AFW system flow instrument. This condition was found while troubleshooting repeated erroneous readings associated with Unit 2 AFW system flow transmitter 2FIT-4720. Gas accumulation had been previously identified as causing an erroneous flow instrument reading in August 2012. The inspectors also noted that engineering personnel had confirmed the AFW system gas accumulation was likely associated with the long-term layup of the steam generators with nitrogen overpressure. The licensee's extent of condition was limited and only addressed the AFW system flow instrumentation. Operations personnel initiated administrative controls and mode change restrictions that required venting of these flow transmitters prior to return of the AFW system to normal. In addition, on October 19, 2012, because the extent of gas accumulation had not been appropriately identified or assessed, engineering personnel directed only one of the AFW pump discharge pipes vented prior to Mode 4 entry.

Gas entrainment has been a safety concern and was addressed in NRC generic communication. NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," dated January 11, 2008, discusses the importance of operating safety systems that are sufficiently filled with water to ensure that they can reliably perform their intended functions. The inspectors noted gas accumulation can result in a water hammer or a system pressure transient, and licensees are required to establish surveillance and

testing conditions to ensure evaluation of gas issues are properly addressed and provisions made to address gas accumulation. In addition, Information Notice 95-35, "Degraded Ability of Steam Generators to Remove Decay Heat by Natural Circulation," discusses requirements when using steam generators for decay heat removal in Mode 5, including the availability of an AFW pump capable of filling the relied-upon steam generator.

Although the generic information does not specifically address AFW, it does address the function of decay heat removal. In this circumstance, wherein the AFW system and steam generators do perform this function and if conditions, such as nitrogen purges, cause gas intrusion, actions should be taken to ensure proper venting of AFW system piping. This will ensure piping remains full of water and prevents rendering the system inoperable or degraded by gas accumulation in any section of piping used to establish operability. This is important since surveillances or pump testing assumes the system is filled and vented. Actions should include assessing gas accumulation to appropriately establish or manage conditions to ensure system testing or surveillances are adequate.

Following the January 2, 2013, Unit 3 AFW system pump gas binding event, engineering personnel initiated a direct cause evaluation to address the gas binding and long-term gas accumulation issue. Their evaluation determined the source of the gas intrusion was from long-term use of nitrogen purge gas at a pressure of 50 psig on the Units 2 and 3 steam generators. In addition, the licensee determined, while in a nitrogen purge, that nitrogen gas accumulation was a result of two factors, seat leakage of check valves and occasional uncovering of the feed ring in the steam generators. Over the course of the SONGS extended plant shutdown and following implementation of a nitrogen purge on the Units 2 and 3 steam generators, a number of nuclear notifications were written that documented abnormal readings from auxiliary feedwater system flow transmitters and pressure gages. Most of the instruments required venting to restore the instrument readings to normal. The licensee determined that the gas accumulation needed be addressed because of the potential impacts to system operability and the ability of the motor-driven AFW pumps to provide flow to the steam generators during Mode 5 operations. Corrective actions have been implemented, including changes to operating procedures that require venting of the AFW system for Mode 5 operations as well as prior to plant heat up. The licensee corrected the condition by implementing routine venting of the AFW system and reducing the steam generator nitrogen purge pressure from 50 psi to 5 psi. Specifically, corrective actions have been implemented to remove gas accumulation in the AFW piping and conduct systematic venting of piping after running the pumps on mini-flow and prior to Mode 3 entry. In addition, periodic venting of the AFW piping, in Mode 5, has been implemented to minimize gas accumulation.

The licensee evaluation also identified that engineering personnel had been aware of gas accumulation caused by long-term nitrogen purge but failed to consider the full extent of condition related to keeping the AFW piping filled with water. This failure prevented an assessment of potential gas binding of a pump and establishing appropriate actions to manage the gas accumulation. The licensee concluded that engineering personnel had failed to properly communicate, using a systematic process, such as corrective action nuclear notification or system engineering programs, for

long-term adverse trending, to ensure the adverse condition was appropriately addressed after gas accumulation was identified in the AFW system components.

Analysis. The inspectors determined that the failure to take prompt corrective actions for nitrogen gas accumulation in the safety-related AFW system as required by 10 CFR Part 50, Criterion XVI was a performance deficiency. The finding was more than minor, and therefore a finding, because it was associated with the Mitigating Systems Cornerstone attribute for equipment performance and 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 determined that Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," was appropriate based on the plant conditions present when this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). The inspectors determined that the finding had a crosscutting aspect in the human performance area decision-making component, because the licensee did not make safety-significant or risk-significant decisions using a systematic process when they identified a degraded condition of gas accumulation in the AFW system [H.1(a)].

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," states, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected." Contrary to the above, the licensee failed to promptly identify and correct a condition adverse to quality. Specifically, from March 2012 until January 2013, a condition adverse to quality related to the accumulation of gas, from steam generator nitrogen purge into piping and safety-related pumps in the AFW system was not promptly identified and corrected until a gas binding event occurred during a start of an AFW pump in Unit 3 on January 2, 2013. Because this violation has very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notifications NN 202268941 and NN 202382092, this violation is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000361/2013002-04, "Untimely Corrective Actions for Nitrogen Gas Accumulation in the Auxiliary Feedwater System."

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction 2515/188, "Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns"

a. Inspection Scope

The inspectors accompanied the licensee on their seismic walkdowns and associated seismic walkdown equipment list (SWEL) items during a previous quarter. This inspection was documented in NRC Inspection Report 05000361; 05000362/2012004.

The inspectors independently performed their February 12, 2013, seismic walkdowns of the Unit 2, main steam isolation valve area and Unit 3 control room building Room 310E associated with the following SWEL items:

- Unit 2, SWEL item #61, main steam safety valve PSV8410
- Unit 3, SWEL item #37, 125Vdc bus 3D1

The inspectors verified that the licensee confirmed that the following seismic features associated with these SWEL items were free of potential adverse seismic conditions:

- Anchorage was free of bent, broken, missing or loose hardware
- Anchorage was free of corrosion that is more than mild surface oxidation
- Anchorage was free of visible cracks in the concrete near the anchors
- Anchorage configuration was consistent with plant documentation
- SSCs will not be damaged from impact by nearby equipment or structures
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment
- Attached lines have adequate flexibility to avoid damage
- The area appears to be free of potentially adverse seismic interactions that could cause flooding or spray in the area
- The area appears to be free of potentially adverse seismic interactions that could cause a fire in the area
- The area appears to be free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installation (e.g., scaffolding, lead shielding)

Observations made during the walkdown that could not be determined to be acceptable were entered into the licensee's corrective action program for evaluation.

Additionally, inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the SWEL and these items were walked down by the licensee.

b. Findings

No NRC-identified or self-revealing findings were identified.

.2 Two Examples of Failure to Follow Procedures for Control of Maintenance

Introduction. The inspectors identified a Green noncited violation of Technical Specification 5.5.1.1 for the failure by licensee personnel to follow Procedure SO23-XX-30, "Nuclear Maintenance Order (NMO) Generation, Screening and Classification," Revision 9 EC1, and Procedure SO23-XX-36, "Toolpouch Maintenance Program," Revision 1 EC1. Specifically, the inspectors identified seven examples wherein the screening and prioritization of nuclear maintenance orders for corrosion-related notifications was not consistent with the coding requirements of Procedure SO23-XX-30. Additionally, the inspectors identified four examples wherein the screening of nuclear maintenance orders to toolpouch tasks was not consistent with the requirements of Procedure SO23-XX-36. As a consequence, several of these nuclear maintenance orders were assigned a low priority, which could cause unwarranted delays in corrective actions.

Example 1 Description. Procedure SO23-XX-30, step 6.2.6.1, requires that the licensee's Nuclear Maintenance Order Screening Committee assign a priority to each nuclear maintenance order that is written. In order to establish a priority, the Committee must identify a reliability class and a job type for each nuclear maintenance order. These job types are listed in Appendix 1 of Procedure SO23-XX-30 and include the following:

CC	Corrective maintenance on critical equipment (degraded, equipment function is threatened)
CN	Corrective maintenance on noncritical equipment (degraded, equipment function is threatened)
DN	Maintenance on deficient noncritical equipment (degraded but not threatening equipment function)
DL	Maintenance on deficient run-to-failure equipment (degraded but not threatening equipment function)
OB	Other maintenance on facilities such as housekeeping, painting, minor rust (does not reflect a material condition deficiency in plant equipment)
OF	Other maintenance not captured in other job types (does not reflect a material condition deficiency in plant equipment)

The assigned job type, along with the reliability class assigned to the equipment (critical, noncritical, or run-to-maintenance), are used to assign a priority to the nuclear maintenance order in Attachment 2 of the procedure. This priority is then used to drive the schedule of the work, with job types with a higher priority being worked sooner than those with a lower priority.

The inspectors reviewed a sample of 24 nuclear maintenance orders from a list of open corrosion-related nuclear maintenance orders provided by the licensee. The inspectors validated the key information in the list and reviewed the associated nuclear notifications

to understand the conditions described. The following table provides a summary of the nuclear maintenance orders' original screening by the Nuclear Maintance Order Screening Committee and the NRC inspector's evaluations.

NMO	NN	ORIGINAL SCREENING		NRC EVALUATION		COMMENTS
		JOB TYPE	PRIORITY	JOB TYPE	PRIORITY	
800864431	201887307	OF	5	DL	4	Run-to-maintenance component. NN task 1 documents that "if left unattended, this corrosion could result in a challenge to component reliability." Task 2 states that "continued degradation is expected." Meets process description of "deficient maintenance."
800586632	201126963	OB	4	DN	4	Noncritical, liquid nitrogen Pump MP454. NN describes that pump is no longer restrained due to corrosion at base plate. The licensee described that this NMO had been errantly recoded as OB. Meets process description of "deficient maintenance."
800960689	202170692	DC	3	CC	3	Critical component. Severe corrosion indicated by photos. NN suggests that bolting could fail. Photos show significant metal loss from nuts, flange, and piping. Meets criteria for "corrective maintenance."
800656228	201315404	DN	4	CN	4	Noncritical component. NN suggests that imminent failure is possible and could result in loss of normal containment chill water. Meets criteria for "corrective maintenance."
800960999	202173441	OF	5	DL	4	Run-to-maintenance component. Operations documented that corrosion has caused growth in thickness of 15-25%. Engineering documented that corrosion has already destroyed half of available physical margin in wall thickness. NRC screened as moderate in SO23-V-8.3. Meets criteria to be classified as "deficient maintenance."
800061976	200020474	OF	5	DL	4	Original NN was evaluated by Ops as "minor" corrosion in 2008 and NMO screened as OF. In subsequent NN on 10/21/2012, supervisor describes that "piping is heavily corroded and rusted with visual metal loss." Photos attached to both NNs are basically identical. NRC screened as moderate in SO23-V-8.3.

NMO	NN	ORIGINAL SCREENING		NRC EVALUATION		COMMENTS
		JOB TYPE	PRIORITY	JOB TYPE	PRIORITY	
800946801	202126752	OF	5	DL	4	Run-to-maintenance component. Engineering documented in NN that 25% of wall thickness on component was already lost. NRC screened as moderate in SO23-V-8.3. Meets criteria to be classified as "deficient maintenance."

In summary, the inspectors identified seven examples wherein the screening and categorizing of nuclear maintenance orders for corrosion-related notifications was not consistent with coding requirements. As a consequence, several of these nuclear maintenance orders were assigned a lower priority, which could cause an unwarranted delay in corrective actions.

The inspectors determined that in almost all cases reviewed, the reason that the nuclear maintenance orders were assigned a low priority job type was the failure of the licensee's staff to recognize when corrosion was no longer "minor." Through a combination of field walkdowns and review of photographs in the licensee's corrective action program, the inspectors were able to demonstrate that each of the nuclear notifications above documented advanced carbon-steel corrosion with demonstrable loss of base metal. The inspectors noted that the licensee's procedure for monitoring external corrosion, SO23-V-8.3, "External Corrosion and Aging Program," provides definitions for minor, moderate, significant and severe corrosion that should have been useful to the Nuclear Maintenance Order Screening Committee in selecting the appropriate job type for these nuclear maintenance orders.

Example 2 Description. The NRC staff reviewed the procedures that govern the screening of maintenance activities to the toolpouch program, including the following:

- SO23-XX-30, "Nuclear Maintenance Order (NMO) Generation, Screening, and Classification," Revision 10
- SO23-XX-36, "Toolpouch Maintenance Program," Revision 1 EC1

Step 6.3.2.1 of Procedure SO23-XX-30 directs the Nuclear Maintenance Order Screening Committee to determine if the toolpouch maintenance program requirements are met. These requirements are specifically listed in step 6.3.1 of Procedure SO23-XX-36:

6.3.1 Activities can be performed using Toolpouch if ALL of these criteria apply:

6.3.1.1 Within the skill level and training qualification of the appropriate Craft

6.3.1.2 Does not require detailed planning or review

6.3.1.3 Does not affect the specified safety function or the specified safety function of a system or component as defined in SO123-XV-52

6.3.1.4 [CTS] Does not require Technical Specification (LCO) / LCS Operability Testing

6.3.1.5 [ITS] Does not require Technical Specification (LCO) Operability or Technical Requirements Manual (TRM) Functionality Testing

6.3.1.6 Does not interrupt the process flow or fluid or air or electrical current to operating or standby equipment important to plant operation or safety

6.3.1.7 Does not have the potential to produce a plant transient or affect reactivity

6.3.1.8 Does not involve EQ equipment work or ASME Code work as controlled by SO123-I-1.7.1; ASME Code work is defined as the replacement of ASME Code parts.

6.3.1.9 Does not alter plant configuration (e.g., ECP) or require the disposition of an NCR

6.3.1.10 Does not require special radiological or industrial safety controls

6.3.1.11 Does not require the use of a Continuous Use Procedure

The inspectors reviewed the licensee's screening activities in regard to 2-dozen maintenance orders that were assigned toolpouch tasks. During this review, the inspectors identified four maintenance orders that were inappropriately screened for resolution using toolpouch tasks. The table below summarizes the results of the inspector's review.

NN	Brief description of toolpouch task	COMMENTS
201849492	Install temporary support for piping.	This represented a configuration change. Should not have been done through toolpouch task. (Affected step 6.3.1.9 of SO23-XX-36)
201961614	Adjust alignment of secondary contacts on 4160V breaker.	This task required special industrial safety precautions (work on energized DC electrical contacts inside an energized 4160V breaker cubicle). (Affected step 6.3.1.10 of SO23-XX-36)
202167960	Refurbish rust on I-beam.	Engineering initially evaluated as no significant loss of material. NRC determined that corrosion had penetrated I-beam. During subsequent preservation work, craft discovered substantial hole in

		I-beam. Not within skill of craft to repair, and this information was available at initial screening. (Affected step 6.3.1.1 of SO23-XX-36)
202228802	Clean slip rings on main turbine rotor.	Special industrial safety precautions necessary due to physical contact with rotating main generator shaft. (affected Step 6.3.1.10 of SO23-XX-36)

Analysis. The inspectors determined that the failure by licensee personnel to follow Procedure SO23-XX-30, "Nuclear Maintenance Order (NMO) Generation, Screening and Classification," to assign the appropriate job types and priority for corrosion-related nuclear maintenance orders, and the failure to follow Procedure SO23-XX-36, "Toolpouch Maintenance Program," for the conduct of toolpouch maintenance, were performance deficiencies. These performance deficiencies were more than minor, and therefore a finding, because they were associated with the Initiating Events Cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective to limit the likelihood of events that upset plant stability and challenged critical safety functions during shutdown as well as power operations. The inspectors determined that Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," was appropriate based on the plant conditions present when most of the examples of this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). This finding had a crosscutting aspect in the area of a human performance, decision-making component, because the Nuclear Maintenance Order Screening Committee failed to use conservative assumptions in decision making when assigning job types and tool pouch maintenance tasks for nuclear notifications [H.1(b)].

Enforcement. Technical Specification 5.5.1.1 requires, in part, that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, "Quality Assurance Program Requirement (Operations)," Appendix A, Section 9, Procedures for Performing Maintenance, requires that general procedures for the control of maintenance, repair, replacement, and modification work should be prepared before reactor operation is begun. Contrary to the above, the licensee failed to implement procedures recommended by Regulatory Guide 1.33, Appendix A, Section 9. Specifically, prior to March 5, 2013, the licensee's Nuclear Maintenance Order Screening Committee failed to assign the appropriate job type and priority to seven corrosion-related nuclear maintenance orders in accordance with Procedure SO23-XX-30, "Nuclear Maintenance Order (NMO) Generation, Screening and Classification," Revision 9 EC1. Additionally, between February 9, 2012, and February 19, 2013, the Nuclear Maintenance Order Screening Committee failed to ensure the required conditions were met prior to assignment of toolpouch maintenance tasks for four nuclear notifications in accordance with Procedure SO23-XX-36, "Toolpouch Maintenance Program," Revision 1 EC1. Because the finding has very low

safety significance and has been entered into licensee's corrective action program as Nuclear Notifications 202346546 and 202351959, this violation is being treated as a noncited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000361; 05000362/2013002-05, "Two Examples of Failure to Follow Procedures for Control of Maintenance."

.3 Failure to Follow Procedure for Plant Preservation Rust Grading

Introduction. The inspectors identified a Green finding for failure to follow the requirements of the Plant Preservation Rust Grading and Budget Preparation Guide. Specifically, licensee personnel failed to initiate nuclear notifications for plant areas that received a rust grade of 4 or higher.

Description. Procedure SO23-V-102, "SONGS Protective Coatings Program," Section 6.2 defines expectations for periodic protective coatings assessment. Paragraph 6.2.4 describes that balance-of-plant coating assessments are conducted through visual inspections in a process referred to as "rust grading." This process is performed on an approximate 3-year cycle and reported in the site Preservation Plan.

The inspectors reviewed the process by which rust grading is performed. The inspectors noted that no regulatory requirements exist for this program. The inspectors obtained a copy of the current site Preservation Plan and compared the inspection results against the procedural guidance provided in the Plant Preservation Rust Grading and Budget Preparation Guide. The inspectors noted that the Guide requires assessors to perform walkdowns of the plant and assign a grade between 1 and 5 based on the level of corrosion present, with 5 being the most severe. Step 6.5 of the Guide states the following:

> *"The inspector should use the AR program to document any piece of equipment which is graded a rust grade 4 or higher, which is a potential non-conformance, or which may require an operability assessment."*

The inspectors noted that this guidance refers to the "AR program." Based upon interviews with the licensee's staff, the inspectors learned that the AR (or action request) system is currently accomplished at SONGS by writing nuclear notifications.

During the review of the rust grading records, the inspectors noted that the assessors had assigned rust grade 4 to 53 discrete areas of the plant in the most recent assessment cycle, and no areas received a rust grade of 5. The inspectors requested that the licensee provide a list of nuclear notifications written for these rust grade assignments. In response, the licensee provided a list of 17 nuclear notifications associated with these areas, far fewer than expected by the licensee's guidance. The licensee initiated Nuclear Notification NN 202341172 on February 28, 2013, to document the failure to initiate nuclear notifications as expected.

Also, the inspectors noted that the licensee recently initiated NN 202175007 on October 11, 2012, documenting the need to formalize the rust grading procedure due to inconsistent resources and the lack of a formal process to track the completion of the

inspections. Additionally, the licensee completed a common-cause evaluation under NN 202331939, which further clarified that previous rust grading work was completed by a contractor in 2011, with little focus on documenting issues in the corrective action program.

Analysis. The inspectors determined that the failure to initiate nuclear notifications for the areas assigned a rust grade of 4 as required by the Plant Preservation Rust Grading and Budget Preparation Guide was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the Initiating Events Cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective to limit the likelihood of events that upset plant stability and challenged critical safety functions during shutdown as well as power operations. The inspectors determined that Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," was appropriate based on the plant conditions present when most of the examples of this performance deficiency occurred. The finding did not require a quantitative assessment because adequate mitigating equipment remained available and the finding did not constitute a loss of control, as defined in Appendix G. Therefore, the finding screened as having very low safety significance (Green). This finding has a crosscutting aspect in the area of a problem identification and resolution corrective action program component, because the licensee failed to implement a corrective action program with a low threshold for identifying issues [P.1(a)].

Enforcement. This finding does not involve enforcement action because no violation of a regulatory requirement was identified. Because this finding does not involve a violation and has very low safety significance, it is identified as FIN 05000361/2013002-06, 05000362/2013002-06, "Failure to Follow Procedure for Plant Preservation Rust Grading."

4OA6 Meetings, Including Exit

Exit Meeting Summary

The inspectors debriefed Mr. T. McCool, Plant Manager, and other members of the licensee's staff of the results of the licensed operator requalification program inspection on August 2, 2012. The results of the inspection were telephonically exited with Mr. G. Pickar, Operations Training Manager, and other members of your staff on February 21, 2013.

On April 2, 2013, the inspectors presented the preliminary inspection results to Mr. D. Bauder, Vice President, and other members of the licensee staff. On April 25, 2013, the inspectors presented the final inspection results to Mr. R. Treadway, Licensing Manager, and other member 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.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Adler, Manager, Maintenance/Systems Engineering
J. Allen, Manager, Operations Training
C. Amundsen, Operations STA
P. Anderson, Technical Specialist, System Engineering
F. Arsene, Senior Nuclear Engineer, Nuclear Strategic Projects
C. Atooli, Senior Nuclear Engineer, Nuclear Strategic Projects
R. Cho, Protective Coatings Engineer
R. Corbett, Director, Performance Improvement
J. Davis, Manager, Operations
M. Demarco, SDG&E
D. Evans, Manager, Security
O. Flores, Director, Nuclear Oversight
G. Johnson, Principal Manager, Nuclear Engineering
G. Kline, Senior Director, Engineering and Technical Services
M. Lewis, Manager, Health Physics
J. Madigan, Director, Nuclear Safety Culture
A. Martinez, Manger, Performance Improvement
T. McCool, Plant Manager
M. Pawlaczyk, Technical Specialist, Nuclear Regulatory Affairs
R. Pettus, Nuclear Regulatory Affairs
G. Pickar, Operations Training Manager
M. Russell, Technician Specialist, Health Physics
S. Schott, Work Week Manager
T. Simmons, Manager, Operations
R. St. Onge, Director, Nuclear Regulatory Affairs
R. Treadway, Manager, Nuclear Regulatory Affairs
J. Tupik, Principal Manager, Work Control
G. Wyatt, Manager, Operations Simulator
S. Wylie, Operations Training Instructor
D. Yarbrough, Director, Operations
J. Bashore, Consultant

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000361/2013002-01 05000362/2013002-01	NCV	Failure to Completely Inspect and Maintain PMF Berm (Section 1R01)
05000361/2013002-02 05000362/2013002-02	NCV	Failure to Properly Screen Nuclear Notifications Results in Missed Operability Determinations and Functionality Assessments (Section 1R15)
05000361/2013002-03 05000362/2013002-03	NCV	Failure to Write Nuclear Notifications for Degraded or Nonconforming Conditions (Section 4OA2)
05000361/2013002-04	NCV	Untimely Corrective Actions for Nitrogen Gas Accumulation in the Auxiliary Feedwater System (Section 4OA2)
05000361/2013002-05 05000362/2013002-05	NCV	Two Examples of Failure to Follow Procedures for Control of Maintenance (Section 4OA5)
05000361/2013002-06 05000362/2013002-06	FIN	Failure to Follow Procedure for Plant Preservation Rust Grading (Section 4OA5)

Closed

2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1RO1: Adverse Weather Protection

PROCEDURE	TITLE	REVISION
SO123-XVIII-35	Inspection and Maintenance of Seawall, Offsite Probable Maximum Flood Berm and Channel, and Related Drainage Facilities	2
SD-SO23-612	Flood Protection and Underground EDG Piping Leak Detection Systems	1

NUCLEAR NOTIFICATION

202346674

WORK ORDER

800750317

CALCULATION	TITLE	REVISION
DC 118	Probable Maximum Flood	3

Section 1RO4: Equipment Alignment

PROCEDURE	TITLE	REVISION
SO23-3-2.33	Reactor Coolant Gas Vent System	10
SO23-3-1.4	RCS Fill and Vent	42
SO123-XX-19	Operational Decision-Making Process	10
SO123-0-A4	Configuration Control	21
SO123-VIII-0.201	Emergency Plan Equipment Surveillance Program	25

NUCLEAR NOTIFICATION

202348822

DRAWING	TITLE	REVISION
30120	One Line Diagram 480V Load Center 2B06 (ESF) and 2B26 (ESF)	25
40111A	Reactor Coolant System, System No. 1201	45
40111C	Reactor Coolant System, System No. 1201	23

MISCELLANEOUS	TITLE	REVISION / DATE
DBD-SO23-120	6.9 KV, 4.16KV, & 480V Electrical Systems	7
WAR 2-120-13003	Q039 strip heater panel maintenance	0
2/3 EDMR-2013-0027	2/3RT 7865 Radiation Monitor Inoperable	March 5, 2013

Section 1RO5: Fire Protection

PROCEDURE	TITLE	REVISION
SO123-XIII-7	Firewatch	18

NUCLEAR NOTIFICATION

202283231 202040821 202055716

DRAWING	TITLE	REVISION
900037BD	SONGS 2/3 NFPA-13 Code Review	1
2-013	Pre-Fire Plan Unit 2 Diesel Generator Building	7
3-045	Pre-Fire Plan	9
3-038	Pre-Fire Plan	9

Section 1R11: Licensed Operator Requalification Program

PROCEDURE	TITLE	REVISION / DATE
SO23-12-3	Loss of Coolant Accident	22
OTIG-001	LO/NLO Operator Examination Security Process	16
OTIG-002	Requalification Exam Bank Maintenance	2
OTIG-003	Licensed Operator Requalification Examination Sample Plan Development	3
OTIG-004	Licensed Operator Requalification Examination Project Plan Development	2
OTIG-005	Exam and Remediation Records Management	8
OTIG-006	Biennial Written Examination Process	12
OTIG-007	Proctoring Requirements for Operator Written Exams	9
OTIG-008	Annual Walk-Through Examination Process	18
OTIG-009	Dynamic Examination Process	24
OTIG-010	Developing/Revising Written Examination Questions	5
OTIG-011	Developing, Revising, Modifying Job Performance Measures (JPM)	8
OTIG-012	Revising/Modifying Dynamic Scenarios	6
OTIG-013	Periodic Examination Process	35
OTIG-014	Conduct of Crew Critiques	17
OTIG-015	Supervisor Responsibilities in Operations Training	November 8, 2011
SO123-XXI-8.4	Licensed Operator Requalification Examinations (Q Procedure)	13
SO123-XXI-1.11.7	Licensed Operator Requalification Training Program Description (Q Procedure)	24
SO123-XXI-8.6	Conducting Training in the Simulator (Q Procedure)	13
SIM TAG 100	SONGS Simulator Hardware/Software Operation Desktop Guide	26
SIM TAG 101	SONGS Simulator Machine Operator Phone Log and Checklist	3
SIM TAG 200	SONGS IC Maintenance Desktop Guide	0
SIM TAG 201	Standard Simulator Initial Conditions (IC)	0
SIM TAG 300	SONGS Simulator Operability Testing Desktop Guide	17

SIM TAG 400	SONGS Simulator Core Physics Testing Desktop Guide	6
SIM TAG 500	Simulator Life Cycle Management	0
SIM TAG 600	Simulator Qualifications OJT/TPE Signature Authority	1
SO23-XXI-3.2.9	Simulator Configuration Management	7

NUCLEAR NOTIFICATIONS

200396913	200436206	201603782	201607959	201669325
201684492	201757521	201836152	202063414	202085608
202085677	202085631			

MISCELLANEOUS	TITLE	REVISION / DATE
	Error Investigation – Notification Number 201607959	August 24, 2011
	SONGS Annual Simulator Test – 2012: Transient Test TT06	April 16, 2012
	SONGS Annual Simulator Test – 2012: Transient Test TT08	April 16, 2012
	SONGS Annual Simulator Test – 2012: Transient Test TT10	April 16, 2012
	Exam Scenario – “Dynamic No. 17”	5
	Exam Scenario – “Dynamic No. 24”	11
	Exam Scenario – “Dynamic No. 29”	8
	Exam Scenario – “Dynamic No. 68”	2
	Exam Scenario – “Dynamic No. 13”	7
	Exam Scenario – “Dynamic No. 69”	1
	SONGS Annual Simulator Test – 2012: Transient Test TT01	April 15, 2012
	SONGS Annual Simulator Test – 2012: Transient Test TT02	April 15, 2012
	SONGS Annual Simulator Test – 2012: Transient Test TT03	April 15, 2012
	SONGS Annual Simulator Test – 2012: Transient Test TT04	April 16, 2012
	SONGS Annual Simulator Test – 2012: Transient Test TT05	April 16, 2012

	SONGS Annual Simulator Test – 2012: Transient Test TT07	April 17, 2012
	SONGS Annual Simulator Test – 2012: Transient Test TT09	April 16, 2012
	SONGS Annual Simulator Test – 2012: Transient Test TT11	April 16, 2012
	SONGS Annual Simulator Test – 2011: Transient Test TT01	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT02	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT03	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT04	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT05	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT06	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT07	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT08	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT09	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT10	April 29, 2011
	SONGS Annual Simulator Test – 2011: Transient Test TT11	April 29, 2011
	SONGS 2012 Licensed Operator Annual Operations Test and Biennial Written Exam Results	December 17, 2012
	Simulator Management Review Board Minutes	July 7, 2009
Simulator Web Simulator Request 64	Malfunction Request for CEA RSPTs	April 2, 2009
Simulator Web Simulator Request 31	Can’t Empty Trip Buffers on CPC Channels ‘B,’ ‘C,’ ‘D’	March 21, 2012
Simulator Web Simulator Request 32	EDG Voltage Fluctuations Appear Too Large on a SIAS	March 21, 2012

Simulator Web Simulator Request 34	RCP Seal Cooling and CBO Temperatures Hard to Control During RCP Startup	March 21, 2012
Simulator Web Simulator Request 35	RCP Reverse Rotation Annunciators Lit When They Should Be Off	March 21, 2012
69904	2012 Biennial Written Exam #6 SRO	December 17, 2012
	2012 Annual Operating Test and Biennial Written Exam Results	December 17, 2012

Section 1R12: Maintenance Effectiveness

PROCEDURE	TITLE	REVISION
SO23-1-8.94	CCW Heat Exchanger Inspection	16

WORK ORDER

800989529

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

NUCLEAR NOTIFICATION

202288902

Section 1R15: Operability Evaluations

PROCEDURE	TITLE	REVISION
SO123-XV-50.CAP-2	SONGS Nuclear Notification Screening	13
SO23-V-8.3	External Corrosion Control and Aging Program	1 EC1

NUCLEAR NOTIFICATIONS

202327075	202283231	201575267	202268941	202270504
201238816	201456871	202162324	201386381	202126752
202199743	201386417	202158546	202200848	202240127
202327075	202291149	202328484	202307659	

MISCELLANEOUS	TITLE	DATE
Priority 1 Special Order	Operability Determination Screening Criteria for Corrosion	February 6, 2013

Section 1R18: Plant Modifications

PROCEDURE	TITLE	REVISION
SO123-XXIV-10.1	Engineering Design Change Process	9
90049	Fire Protection Design Control Program	8

NUCLEAR NOTIFICATIONS

202221531 202231494

WORK ORDERS

800772747 800702591

DRAWING	TITLE	REVISION
39402 Sh. 1 of 8	Conduit Physical Separation Guide	1
30749	Elementary Diagram Reactor Auxiliaries Charging Pump P192	25
Loop 2LT0110-1	Loop Diagram Pressurizer Channel 1 Level	3

MISCELLANEOUS	TITLE	REVISION
SO23-304-13-1	Bendix Test Plan L-36010	C
Form 26-292	Summary Fire Protection Design Checklist	11

Section 1R19: Post-maintenance Testing

PROCEDURE	TITLE	REVISION
SO23-3-3.23	Emergency Diesel Operations	62
SO23-3-3.60.4	Saltwater Cooling Pump Testing	15
SO23-I-1.25	Post-Maintenance Testing	3
SO23-XV-1	Post-Maintenance Retest Guide	13

NUCLEAR NOTIFICATIONS

202283162 202285976 202322437 202332319 202332615

WORK ORDERS

801002134 801016749

DRAWING	TITLE	REVISION
SO23-408-1-9-194	Dual Plate Check Valve Assembly	4

Section 1R22: Surveillance Testing

PROCEDURE	TITLE	REVISION
SO23-3-3.60.2	Low Pressure Safety Injection Pump Testing	11
SO23-3-2.6	Shutdown Cooling System Operation	35
SO23-3-3.23, Attachment 1	Diesel Generator Monthly Surveillance	62
SO23-3-3.60.6	Auxiliary Feedwater Pump and Valve Testing	24

Section 1EP4: Emergency Action Level and Emergency Plan Changes

PROCEDURE	TITLE	REVISION
SO123-VIII-10.3	Protective Action Recommendations	15
SO123-VIII-10.6	Emergency Response Actions for a Declared Security Event	6
SO123-NP-1	Offsite Emergency Planning (OEP) Responsibilities and Offsite Interfaces	9
	Emergency Plan	33
	Evacuation Time Estimate Study Update	

Section 4OA2: Identification and Resolution of Problems

PROCEDURE	TITLE	REVISION
SO123-XV-50.CAP-1	Writing Nuclear Notifications for Problem Identification and Resolution	9
SO123-XV-52	Operability Determinations and Functionality Assessments	26
SO123-XV-50.CAP-1	Corrective Action Program	0

NUCLEAR NOTIFICATIONS

201575267	202283231	202240127	202291119	202291177
202291150	202291149	202291131		

WORK ORDERS

800065378 800065381

MISCELLANEOUS	TITLE	DATE
	Control Room Logs	January 4, 2013
C&W Diving Services, Inc	SONGS ROV Tank Inspection, Units 2 & 3	June 15, 2009

Section 4OA5: Other Activities

PROCEDURE	TITLE	REVISION
SO23-XV-95	Fukushima Event Response – Seismic Protection Walkdown Inspection Process	0
SO123-XV-1.20	Seismic Controls	6
SO23-V-102	SONGS Protective Coating Program	0
SO23-XX-30	Nuclear Maintenance Order (NMO) Generation, Screening and Classification	9 EC1
SO23-V-8.3	External Corrosion and Aging Program	0
SO23-XX-36	Toolpouch Maintenance Program	1 EC1
SO23-XX-8	Integrated Risk Management	15
SO123-XV-50.CAP-2	SONGS Nuclear Notification Screening	13

NUCLEAR NOTIFICATIONS

202323400	202175007	202341172	201887307	201126963
202170692	201315404	202173441	200020474	202126752
202291177	201987581	202298093	202299242	201849492
201961614	202167960	202228802	202294637	202351959

WORK ORDERS

800864431	800586632	800960689	800656228	800960999
800061976	800946801			

DRAWING	TITLE	REVISION
SO23-302-5A-2	Control Building Area CA7, 125 Volt DC Distribution Switchboards 2D1, 2D2, 2D3, 2D4, 3D1, 3D2, 3D3, 3D4	13

35698	Control Building Areas CA7, 8, 9, 10 Equipment Arrangement Elevation 50’ – 0”	6
SO23-301-3A-D14	Outline – Production 400 AMP Swing Battery Charger 480VAC 30 60HZ 125VDC	1
S2-ST-309-H-002	Pipe Support Assembly	4
40141C	P&I Diagram Main Steam System, System No. 1301	41
40487	40” Main Steam Piping Sections	8

MISCELLANEOUS	TITLE	DATE
EPRI 1025286	Seismic Walkdown Guidance, For Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic	June 2012
	Unit 2 Seismic Walkdown Report	November 2012
	Unit 3 Seismic Walkdown Report	November 2012
	Plant Preservation Rust Grading and Budget Preparation Guide	