



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV  
612 EAST LAMAR BLVD, SUITE 400  
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November 3, 2010

Mr. James J. Sheppard  
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 05000361/2010004 and 05000362/2010004

Dear Mr. Sheppard:

On September 23, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your San Onofre Nuclear Generating Station, Units 2 and 3 facility. The enclosed integrated inspection report documents the inspection findings, which were discussed on September 24, 2010, with you, and other members of your staff.

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

This report documents two NRC-identified findings and one self-revealing finding of very low safety significance (Green). All three of these findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations, consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the violations or the significance of the noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the San Onofre Nuclear Generating Station facility. In addition, if you disagree with the crosscutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at San Onofre Nuclear Generating Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, and its enclosure, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document 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  
Project Branch D  
Division of Reactor Projects

Docket Nos. 50-361, 50-362

License Nos. NPF-10, NPF-15

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NRC Inspection Report 05000361/2010004 and 05000362/2010004  
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C:DRS/OB	C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	C:DRP/	
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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 50-361, 50-362

License: NPF-10, NPF-15

Report: 05000361/2010004 and 05000362/2010004

Licensee: Southern California Edison Co. (SCE)

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

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

Dates: June 24, 2010 through September 23, 2010

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

## SUMMARY OF FINDINGS

IR 05000361/2010004, 05000362/2010004; 06/24/2010 – 09/23/2010; San Onofre Nuclear Generating Station, Units 2 and 3; Integrated Resident and Regional Report; Maint. Risk Assess. & Emerg. Work Contr., Op Eval., Ident. & Resolution of Problems.

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by region-based inspectors. Three Green noncited violations of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The crosscutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of maintenance personnel to follow the requirements of station procedures while performing work on containment sump pump discharge isolation valve 2HV5803. Specifically, on January 21, 2010, while performing scheduled maintenance activities on the valve maintenance personnel identified the need to perform a modification to the electrical wiring of the valve. When the modification was implemented on January 25, 2010, maintenance personnel failed to follow the requirements of procedures SO123-II-15.3, "Temporary System Alteration and Restoration Form," Revision 17, and SO123-XXIV-10.1, "Preparation, Review, Approval, Issuance, Implementation, and Closure of Engineering Change Packages (NECPs) and Engineering Change Notices (ECNs)," Revision 21, and did not have an implementing work order to affect a design change on valve 2HV5803. Planned corrective action is still being evaluated by the licensee. This issue was entered into the licensee's corrective action program as Nuclear Notifications NNs 201061230, 200767264 and 200964035.

The performance deficiency was determined to be more than minor and is therefore a finding because if left uncorrected, the continued practice of circumventing site procedural requirements by craft personnel during maintenance or design modification work on safety-related equipment would have the potential to leave more risk significant equipment in a degraded or inoperable condition without documentation and without the knowledge and approval of site management and operations personnel. The finding was associated with the design control attribute of the Mitigating Systems Cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4)

did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding was determined to have a crosscutting aspect in the area of human performance, associated with work practices component, in that the licensee failed to define and effectively communicate expectations regarding procedural compliance, and that personnel follow procedures [H.4(b)] (Section 1R13).

- Green. A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the licensee's failure to promptly identify and correct a condition adverse to quality associated with safety-related emergency ventilation fans. Specifically, the licensee did not adequately identify a degrading material condition on the emergency ventilation fan nose cones that resulted in failure of the emergency diesel generator train B vaneaxial fan on July 12, 2010. The licensee's apparent cause evaluation developed corrective actions to periodically replace safety-related emergency ventilation fans at a 12 year interval. This issue was entered into the licensee's corrective action program as Nuclear Notifications NNs 201009885 and 201088409.

The performance deficiency is more than minor and is therefore a finding because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather imitating event. Since the inadequate corrective actions were developed in 2003 and the licensee's corrective action program has improved with respect to extent of condition reviews, the inspectors determined that this finding was not reflective of current performance, and therefore, did not have a crosscutting aspect associated with it (Section 1R15).

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure of electrical maintenance management personnel to adequately ensure that training was provided to electrical maintenance workers on techniques to prevent loose electrical connections. This training was a required action as described in root cause evaluation RCE 050601315 written in response to a June 2005 failure of an emergency diesel generator surveillance test due to a loose electrical connection in an emergency supply fan for the Unit 3 train B emergency diesel generator. The licensee entered this finding into their corrective action program as Nuclear Notifications NNs 200986184 and 200992291.

The failure of electrical maintenance management personnel to adequately implement corrective actions as prescribed by a root cause evaluation was a performance deficiency. The performance deficiency is more than minor and is

therefore a finding because it is associated with the human performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Since this finding is associated with a 2005 root cause evaluation, that required training as part of the corrective action followup and there have been changes to the licensee's corrective action program, the inspectors determined that this was not reflective of current performance and therefore did not have a crosscutting aspect associated with it (Section 40A2).



## REPORT DETAILS

### Summary of Plant Status

Unit 2 remained at essentially full power for the entire inspection period.

Unit 3 began the inspection period at full power. On September 19, 2010, the plant began a planned power coast down of one percent per day because of fuel depletion. At the end of the inspection period power was 94 percent.

### 1. REACTOR SAFETY

#### Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R04 Equipment Alignments (71111.04)

##### Partial Walkdowns

##### a. Inspection Scope

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

- August 2, 2010, Unit 3, emergency diesel generator train B
- September 1, 2010, Unit 2, auxiliary feedwater train A
- September 14, 2010, Unit 3, battery charger train B

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, Updated Final Safety Analysis Report, 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 walked down 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 by IP 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:

- July 30, 2010, Unit 3, auxiliary feedwater pump room area
- August 5, 2010, Unit 3, safety equipment building, rooms 6 through 14 and 16 through 26
- August 19, 2010, Unit 2, fuel handling building
- September 4, 2010, Unit 3, containment penetration and fuel handling, 63 foot-6 inch elevation
- September 5, 2010, Unit 3, main steam isolation valve area

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

These activities constitute completion of five quarterly fire-protection inspection samples as defined by IP 71111.05-05.

#### b. Findings

No findings were identified.

## 1R11 Licensed Operator Requalification Program (71111.11)

### a. Inspection Scope

On July 27, 2010, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator annual requalification dynamic evaluation examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

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

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

### 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:

- August 2-4, 2010, Units 2 and 3, maintenance of safety-related emergency ventilation vaneaxial fans

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

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

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one quarterly maintenance effectiveness sample as defined in IP 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:

- July 28-29, 2010, Unit 3, movement of tendon gallery hatches near reserve auxiliary transformer 3XR3
- August 12, 2010, Unit 2, emergent maintenance activities on containment sump pump discharge isolation valve 2HV5803
- September 2, 2010, Unit 3, test plan to troubleshoot 100 percent positive electrical DC ground on bus 3D5

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

These activities constitute completion of three maintenance risk assessments and emergent work control inspection samples as defined by IP 71111.13-05.

b. Findings

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 maintenance personnel to follow the requirements of station procedures while performing work on containment sump pump discharge isolation valve 2HV5803.

Description. On January 21, 2010, while performing scheduled maintenance activities on valve 2HV5803, maintenance personnel identified an electrical lead incorrectly terminated on the valve's torque switch, contrary to vendor recommendations. Nuclear Notification NN 200757360 was written to capture this issue in the corrective action program, and recommended that the torque switch be replaced and a permanent plant modification be made to the electrical wiring of the valve so that the identified lead would no longer be landed on the torque switch.

On January 25, 2010, Engineering Change Package ECP 800445897 was issued along with the revised wiring diagram which had been changed to reflect the new wiring detail. Maintenance personnel then re-terminated the leads of the valve using procedure SO123-II-15.3, "Temporary System Alteration and Restoration Form," Revision 17.

On January 26, 2010, after the completion of all work activities and postmaintenance testing, including the implementation of the wiring modification, but prior to the valve being released back to operations, maintenance personnel became aware that a work order was required to implement these wiring changes. Work Order WO 800448701 was issued on January 27, 2010, and subsequently closed on the same day after verification wiring was installed per the correct design configuration. Nuclear Notification NN 200767264 was written to capture this issue in the corrective action program. The licensee subsequently closed Nuclear Notification NN 200767264 on February 6, 2010, stating that nothing had been done incorrectly.

The inspectors reviewed this issue and questioned the licensee's determination that nothing had been done incorrectly. During their review the inspectors noted that procedure SO123-II-15.3 Section 1.1.1.1 stated, in part, "This procedure is not applicable when alterations are permanent." and section 4.1 stated, in part, "When equipment is returned to its owner it must be restored to the 'As-Found' condition unless an alteration is documented by procedure SO123-XV-5.1, Temporary Modification

Control.” Also, the inspectors noted that procedure SO123-XXIV-10.1, “Preparation, Review, Approval, Issuance, Implementation, and Closure of Engineering Change Packages (NECPs) and Engineering Change Notices (ECNs),” Revision 21, section 6.3.1 stated, in part, “The responsible work organization implements field changes according to approved nuclear engineering change package and appropriate procedures including generating work documents.”

As such, the inspectors determined that maintenance personnel had failed to follow station procedures during this activity. Specifically, the inspectors determined that procedure SO123-II-15.3 was not an appropriate procedure for re-terminating the valve since this modification was to be permanent, and procedure SO-XXIV-10.1 required that a work order be generated to perform design changes. The inspectors informed the licensee of their concerns and the licensee initiated Nuclear Notification NN 200964035 to capture this concern in the corrective action program.

Analysis. The failure of maintenance personnel to follow the requirements of procedures SO123-II-15.3 and SO123-XXIV-10.1 was a performance deficiency. The performance deficiency was determined to be more than minor and is therefore a finding because if left uncorrected, the continued practice of circumventing site procedural requirements by craft personnel during maintenance or design modification work on safety-related equipment would have the potential to leave more risk significant equipment in a degraded or inoperable condition without required documentation and without the knowledge and approval of site management and operations personnel. The finding is associated with the design control attribute of the Mitigating Systems Cornerstone. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding was determined to have a crosscutting aspect in the area of human performance, associated with the work practices component, in that the licensee failed to define and effectively communicate expectations regarding procedural compliance, and that personnel follow procedures [H.4(b)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” requires, in part, that activities affecting quality shall be prescribed by documented instructions or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions and drawings. Procedure SO123-II-15.3 did not allow station personnel to perform alterations to plant equipment that would be permanent, and procedure SO123-XXIV-10.1 required that a work order be generated prior to performing design change activities. Contrary to the above, on January 25, 2010, maintenance personnel failed to follow these procedures, in that, they implemented a permanent design change to valve 2HV5803 using procedure SO123-II-15.3, without an implementing work order as required by procedure SO123-XXIV-10.1. Because this finding is of very low safety significance and has been entered into the licensee’s corrective action program as Nuclear Notifications NNs 201061230, 200767264 and 200964035, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361/2010004-01, “Failure to Follow Procedures While Implementing a Design Change.”

## 1R15 Operability Evaluations (71111.15)

### a. Inspection Scope

The inspectors reviewed the following issues:

- June 30, 2010, Unit 2, saltwater water cooling pump train B in alarm following inservice testing
- July 12-13, 2010, Unit 2, emergency diesel generator train B building emergency ventilation fan 2MA276 failure
- August 11-12, 2010, Unit 2, charging line to reactor coolant loop 1A control valve, 2HV9204, chronic boric acid packing leak
- August 30, 2010, Unit 3, component cooling water train B, incorrect weld cut on heat exchanger vent valve pipe

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and Updated Safety Analysis Report 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. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. The inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four operability evaluations inspection samples as defined in IP 71111.15-05.

### b. Findings

Introduction. A self-revealing Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the licensee's failure to promptly identify and correct a condition adverse to quality associated with safety-related emergency ventilation fans. Specifically, the licensee did not adequately identify a degrading material condition on the emergency ventilation fan nose cones that resulted in failure of the Unit 2 emergency diesel generator train B ventilation fan on July 12, 2010.

Description. While performing work on ventilation dampers in the Unit 2 saltwater cooling pump room in July 2003, maintenance personnel identified the fan nose cone on saltwater cooling pump room fan 2MA370 was severely corroded. The discovery of this condition resulted in additional inspections of all saltwater cooling pump room safety-related emergency ventilation fans. Between July 2003 and July 2007 all of the

saltwater cooling pump room emergency ventilation fan nose cones inspected were subsequently replaced as a result of degradation caused by marine environment corrosion.

Additional corrective actions included a maintenance program to perform visual inspections of the nose cones of other safety-related ventilation fans. In addition, the preventative maintenance frequency was established to ensure inspection of the nose cones was completed every six years. In May 2007, both of the Unit 2 train B emergency diesel generator ventilation fans were inspected. However, the visual inspections were inadequate and failed to detect the degrading condition of the nose cone associated with the exposure of the emergency ventilation fan components to a marine environment. As a result, the material condition of the ventilation fan continued to degrade, such that on July 12, 2010, following the start of the emergency diesel generator for a routine surveillance run, emergency ventilation vaneaxial fan 2MA276 failed after starting. The nose cone mounted on the front of the fan hub broke away from the mounting ring and was drawn into rotating fan blades, resulting in a loud noise and smoke. The equipment operator present in the emergency diesel generator room immediately secured the running diesel generator and informed the control room. Subsequent troubleshooting determined that the nose cone material condition had degraded due to galvanic corrosion caused by long term exposure to the marine environment.

All safety-related emergency ventilation fans with direct exposure to the marine environment were inspected and replaced as necessary, between July 19 and July 27, 2010. An apparent cause evaluation was performed in Nuclear Notification NN 201009885 and determined the cause was inadequate preventative maintenance. The degradation was a result of accelerated galvanic corrosion of the nose cone section of the emergency ventilation fan. The majority of the corrosion was initiated on the back side of the nose cone hub, and consequently, the visual inspections performed between July 2003 and July 12, 2010, were not adequate to detect the degradation of the hub material.

Analysis. The failure of the licensee to identify and correct a condition adverse to quality associated with safety-related emergency ventilation fans in a timely manner, was a performance deficiency. The performance deficiency is more than minor and is therefore a finding because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather imitating event. Since the inadequate corrective actions were developed in 2003 and the licensee's corrective action program has improved with respect to extent of condition reviews, the inspectors determined that this finding was not reflective of current performance, and therefore, did not have a crosscutting aspect associated with it.



Enforcement. Title 10 of the *Code of Federal Regulations*, Part 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Maintenance Order SO123-MA-1, "Maintenance Program", Revision 5, Section IV A.1, required, in part, a maintenance program be established and implemented to ensure structures, systems, and components important to safety are maintained in a condition that allows them to perform their intended functions.

Contrary to the above, between July 2003 and July 2010, the licensee failed to adequately correct the adverse condition of degrading emergency ventilation fan nose cones. Specifically, the licensee failed to ensure the preventative maintenance inspections were thorough enough to detect and prevent the corrosion of fan nose cones caused by the exposure to a marine environment, which resulted in an emergency ventilation fan failure in July 2010. The licensee has implemented corrective actions to replace safety-related emergency ventilation fans at 12 year intervals. Because the finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notifications NNs 201009885 and 201088409 this violation is being treated as a noncited violation consistent with Section VI.A.1 of the Enforcement Policy: NCV 05000361; 05000362/2010004-02, "Failure to Promptly Identify and Correct a Condition Adverse to Quality Associated with Safety-related Emergency Ventilation Fans."

#### **1R19 Postmaintenance Testing (71111.19)**

a. Inspection Scope

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

- July 16, 2010, Unit 2, testing of emergency ventilation fan 2MA276 following corrective maintenance
- August 12, 2010, Unit 2, auxiliary feedwater system 2HY8200 solenoid valve 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 Updated Final Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them in the

corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two postmaintenance testing inspection samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

**1R22 Surveillance Testing (71111.22)**

a. Inspection Scope

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

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

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

- June 30, 2010, Unit 2, saltwater cooling pump P307 inservice pump test
- August 16, 2010, Unit 3, reactor coolant system leak rate test
- September 15, 2010, Unit 3, containment spray pump and valve train B test

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

These activities constitute completion of three surveillance testing inspection samples as defined in IP 71111.22-05.

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**

**1EP2 Alert Notification System Testing (71114.02)**

a. Inspection Scope

The inspectors discussed with licensee staff the operability of offsite siren emergency warning systems, and backup alerting methods, to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50, Appendix E. The licensee's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; FEMA Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants"; and the licensee's current FEMA-approved alert and notification system design report, dated February 10, 2010, with modification letter, dated March 24, 2010. Other specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.02-05.

b. Findings

No findings were identified.

**1EP3 Emergency Response Organization Augmentation Testing (71114.03)**

a. Inspection Scope

The inspectors discussed with licensee staff the operability of primary and backup systems for augmenting the on-shift emergency response staff to determine the adequacy of licensee methods for staffing emergency response facilities in accordance with their emergency plan. The inspectors evaluated the licensee's ability to staff the emergency response facilities in accordance with the licensee's emergency plan and the

requirements of 10 CFR Part 50, Appendix E. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.03-05.

b. Findings

No findings were identified.

**1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)**

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program requirements as documented in site Procedures SO123-XV-50, "Corrective Action Program," Revision 19, SO123-XV-50.CAP-1, "Writing Nuclear Notifications for Problem Identification and Resolution," Revision 4, and SO123-XV-50.CAP-4, "Implementing Corrective Actions," Revision 5. The inspectors reviewed summaries of corrective action program documents assigned to the emergency preparedness department and emergency response organization between April 2009 and July 2010. Specific corrective action documents selected for detailed review against the program requirements are listed in the attachment to this report. The inspectors evaluated the response to the corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements, planning standard 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E. The inspectors observed the August 24, 2010, post-audit exit meeting conducted by the site Quality Assurance Department for Audit SCES-09-10, "Emergency Preparedness Program." The inspectors also reviewed licensee audits, assessments, drill reports, and after action reports to determine whether the licensee was identifying weaknesses and deficiencies in the emergency preparedness program. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.05-05.

b. Findings

No findings were identified.

**1EP6 Drill Evaluation (71114.06)**

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on July 14, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Technical Support Center and Emergency Operating Facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The

inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

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

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational and Public Radiation Safety**

**2RS7 Radiological Environmental Monitoring Program (71124.07)**

a. Inspection Scope

This area was inspected to: (1) ensure that the radiological environmental monitoring program verifies the impact of radioactive effluent releases to the environment and sufficiently validates the integrity of the radioactive gaseous and liquid effluent release program; (2) verify that the radiological environmental monitoring program is implemented consistent with the licensee's technical specifications and/or offsite dose calculation manual, and to validate that the radioactive effluent release program meets the design objective contained in Appendix I to 10 CFR Part 50; and (3) ensure that the radiological environmental monitoring program monitors noneffluent exposure pathways, is based on sound principles and assumptions, and validates that doses to members of the public are within the dose limits of 10 CFR Part 20 and 40 CFR Part 190, as applicable. The inspectors reviewed and/or observed the following items:

- Annual environmental monitoring reports and offsite dose calculation manual
- Selected air sampling and thermoluminescence dosimeter monitoring stations
- Selected structures, systems, or components that may contain licensed material and has a credible mechanism for licensed material to reach ground water
- Records required by 10 CFR 50.75(g)
- Significant changes made by the licensee to the offsite dose calculation manual as the result of changes to the land census or sampler station modifications since the last inspection
- Calibration and maintenance records for selected air samplers, composite water samplers, and environmental sample radiation measurement instrumentation
- Interlaboratory comparison program results
- Audits, self-assessments, reports, and corrective action documents related to the radiological environmental monitoring program since the last inspection

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

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.07-05.

b. Findings

No findings were identified.

**2RS8 Radioactive Solid Waste Processing, and Radioactive Material Handling, Storage, and Transportation (71124.08)**

a. Inspection Scope

This area was inspected to verify the effectiveness of the licensee's programs for processing, handling, storage, and transportation of radioactive material. The inspectors used the requirements of 10 CFR Parts 20, 61, and 71 and the Department of Transportation regulations contained in 49 CFR Parts 171-180 for determining compliance. The inspectors interviewed licensee personnel and reviewed the following items:

- The solid radioactive waste system description, process control program, and the scope of the licensee's audit program
- Control of radioactive waste storage areas including container labeling/markings and monitoring containers for deformation or signs of waste decomposition
- Changes to the liquid and solid waste processing system configuration including a review of waste processing equipment that is not operational or abandoned in place
- Radiochemical sample analysis results for radioactive waste streams and use of scaling factors and calculations to account for difficult-to-measure radionuclides
- Processes for waste classification including use of scaling factors and 10 CFR Part 61 analysis
- Shipment packaging, surveying, labeling, marking, placarding, vehicle checking, driver instructing, and preparation of the disposal manifest
- Audits, self-assessments, reports, and corrective action reports radioactive solid waste processing, and radioactive material handling, storage, and transportation performed since the last inspection

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

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.08-05.

b. Findings

No findings were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator Verification (71151)

###### .1 Data Submission Issue

###### a. Inspection Scope

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

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

###### b. Findings

No findings were identified.

###### .2 Mitigating Systems Performance Index - Residual Heat Removal System (MS09)

###### a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - residual heat removal system performance indicator Units 2 and 3, for the period from the 3rd quarter 2009 through the 2nd quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of July 2009 through June 2010 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two mitigating systems performance index residual heat removal systems sample as defined in Inspection Procedure 71151-05.

###### b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - Cooling Water Systems (MS10)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - cooling water systems performance indicator for Units 2 and 3, for the period from the 3rd quarter 2009 through the 2nd quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of July 2009 through June 2010 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two mitigating systems performance index cooling water system samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Reactor Coolant System Leakage (BI02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Leakage performance indicator for Units 2 and 3, for the period from the 3rd quarter 2009 through the 2nd quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's operator logs, reactor coolant system leakage tracking data, issue reports, event reports and NRC integrated inspection reports for the period of July 2009 through June 2010, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two reactor coolant system leakage samples as defined by Inspection Procedure 71151-05.

b. Findings

No findings were identified.



.5 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period July 2009 through June 2010. The inspectors also observed three Operations Crews perform emergency event classification during nine simulator training scenarios (three per crew), totaling twelve classification opportunities. Performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used to determine the accuracy of the performance indicator data reported during the period. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during predesignated control room simulator training sessions, performance during the 2009 biennial exercise, and performance during other drills. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the drill/exercise performance sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period July 2009 through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the emergency response organization drill participation sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.7 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period July 2009 through June 2010. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the alert and notification system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

**40A2 Identification and Resolution of Problems (71152)**

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

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review-Maintenance Training Recovery Plan

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on the licensee's maintenance and technical training recovery plan associated with Nuclear Notification NN 200524653, which initiated a self-assessment of maintenance and technical training programs. The inspectors conducted interviews of 33 maintenance personnel, observed in-plant activities, toured training facilities, and conducted documentation reviews in performing the inspection.

These activities constitute completion of one semi-annual trend inspection sample as defined in IP 71152-05.

b. Observations and Findings

Overall, the licensee's recovery plan appeared to address the appropriate deficiencies necessary for performance improvement. However, the inspectors also determined that some deficiencies existed associated with the implementation of the recovery plan.

All maintenance personnel interviewed indicated their initial training on the Systems Application and Products computer software system used for implementation of the corrective action program was inadequate. The inspectors determined that the licensee generated some initiatives in response to previously identified knowledge gaps in the use of the Systems Application and Products operating system that came to light as a result of focus group interviews conducted by the NRC in February 2009 (see NRC Inspection Report 05000361/2009009 and 05000362/2009009, Section 4OA2.2). These initiatives included distributing a written survey among the maintenance staff to poll them on what additional training should be considered, as well as providing a method to generate nuclear notifications in hardcopy in lieu of a computer. However, the inspectors determined that no lesson plan or training schedule had yet been generated to perform

the appropriate training. The licensee committed to having a lesson plan and training schedule in place by August 15, 2010. The inspectors considered the elapsed time to take action against the Systems Application and Products computer software knowledge gap deficiency to be excessive, as the deficient Systems Application and Products computer software training took place approximately two years ago during the summer of 2008. The licensee responded to this concern by generating Nuclear Notification NN 200980063.

The inspectors determined that training implemented in response to licensee identified knowledge gaps in mechanical maintenance and configuration control appropriately included the pertinent information and work techniques to address the deficiencies identified. However, the resolutions to the identified deficiencies appeared narrowly focused, as they did not incorporate lessons learned from previous related occurrences at San Onofre, some that resulted in violations of NRC requirements. The licensee responded to this concern by generating Nuclear Notification NN 200984342.

The inspectors noted that maintenance personnel currently have no individual training plans or goals leading to full qualification. The inspectors concluded that such tools would be essential in ensuring successful implementation of a new maintenance training program. The inspectors also determined that maintenance personnel were unable to individually determine what training was currently available without outside assistance. The licensee responded to these concerns by committing to developing individual training plans for maintenance personnel and by generating Nuclear Notification NN 200984403.

The inspectors determined that the reviewed licensee generated training evaluations were cursory and lacked detail. Performance and training effectiveness evaluation forms contained checklists as part of the evaluation. The inspectors noted that no details were provided when the checklist box item was adversely marked. The inspectors concluded that the deficiencies identified in the training evaluations could not be fully resolved without some explanation as to what contributed to the deficiency. The licensee responded to this concern by generating Nuclear Notification NN 200984340.

#### Failure to Provide Training Mandated by a Root Cause Evaluation

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure of electrical maintenance management personnel to adequately ensure that training was provided to electrical maintenance workers on techniques to prevent loose electrical connections. This training was a required action as described in Root Cause Evaluation RCE 050601315 written in response to a June 2005 failure of an emergency diesel generator surveillance test due to a loose electrical connection in an emergency supply fan for the Unit 3 train B emergency diesel generator.

Description. Between June 21 and June 25, 2010, the inspectors performed a review of training records associated with maintaining the proficiency of electrical maintenance personnel through continuing training based on past plant occurrences. The inspectors asked to review the training records associated with training prescribed by a root cause evaluation performed as result of an emergency diesel generator surveillance test failure in June 2005 due to a loose electrical connection in an electrical breaker for the emergency diesel generator room supply fan.

The training prescribed by the root cause evaluation was to educate electrical maintenance personnel on techniques to prevent inadvertent loose connections. Specifically, the practice of performing a “wobble test” to ensure a secure connection was being abandoned in favor of tightness verification using primarily a screwdriver in contact with the connection. The root cause evaluation also prescribed that electrical maintenance procedures be modified to include a precaution to prevent over-tightening and stripping of connections, and to direct that the “wobble test” could cause electrical connections to become loose. The inspectors verified that the procedure enhancements had been incorporated, but could find no evidence of a lesson plan, training records, or any other documentation that any training as prescribed by the root cause evaluation ever took place. The licensee could provide no immediate explanation why the training did not take place. The licensee generated Nuclear Notification NN 200986184 in response to this issue. The inspectors noted that the missed training would have addressed maintenance techniques that could lead to loose electrical connections on breakers for safety related equipment. The licensee indicated that the training would be scheduled and implemented per the original requirements of the root cause evaluation as part of their corrective actions.

During their initial investigation, the licensee discovered that Root Cause Evaluation RCE 050601315 had been audited for completeness in November 2009. The auditors verified that the requirement for electrical maintenance procedures to be enhanced was performed. However, the audit was absent any comment or verification that the required training was scheduled or implemented, apparently due to an oversight by the auditors. The licensee generated a second Nuclear Notification NN 200992291 to address this issue. The licensee indicated that other root cause evaluations would be reviewed for completeness as part of the corrective action.

Analysis. The failure of electrical maintenance management personnel to adequately implement corrective actions as prescribed by a root cause evaluation was a performance deficiency. The performance deficiency is more than minor and therefore a finding because it is associated with the human performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Since this finding is associated with a 2005 root cause evaluation, that required training as part of the corrective action followup and there have been changes to the licensee’s corrective action program, the inspectors determined that this was not reflective of current performance and therefore did not have a crosscutting aspect associated with it.

Enforcement. Title 10 of the *Code of Federal Regulations*, Part 50, Appendix B, Criterion XVI, “Corrective Action,” requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to the above, from June 2005 to June 2010, the licensee failed to assure that a condition adverse to quality was corrected. Specifically,

electrical maintenance management personnel failed to adequately ensure that training for electrical maintenance workers on loose electrical connections took place as prescribed by a root cause evaluation generated in response to an emergency diesel generator surveillance test failure. The root cause evaluation indicated that this training was necessary to aid in preventing future malfunctions and failures of safety-related equipment. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notifications NNs 200986184 and 200992291, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361; 05000362/2010004-03, "Failure to Provide Training Mandated by a Root Cause Evaluation."

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting the issues listed below. The inspectors considered the following during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

- July 13, 2010, missed licensee event report as documented in Nuclear Notification NN 201038508

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

b. Findings

No findings were identified.

.5 Review of Operator Workarounds

a. Inspection Scope

The inspectors conducted a cumulative review of operator workarounds on August 30, 2010, for Units 2 and 3, and assessed the effectiveness of the operator workaround program to verify that the licensee was: 1) identifying operator workaround problems at an appropriate threshold; 2) entering them into the corrective action program; and 3) identifying and implementing appropriate corrective actions. The review included walkdowns of the control room panels, interviews with licensed operators and reviews of the control room discrepancies list, the lit annunciators list, the operator burden list, and the operator workaround list.

These activities constitute completion of one review of operator workarounds sample as defined in IP 71152-05.

b. Findings

No findings were identified.

**40A3 Event Follow-up (71153)**

.1 Event Follow Up

a. Inspection Scope

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

- July 7, 2010, Units 2 and 3, ground motion detected on site requiring entry into abnormal operating instruction SO23-13-3, "Earthquake," Revision 13
- July 12, 2010, Unit 2, Management Directive 8.3 review of failure of a train B emergency diesel generator building emergency ventilation fan 2MA276
- July 21, 2010, Units 2 and 3, sea grass intrusion impact on saltwater cooling system and main condenser differential pressure
- August 16-18, 2010, Unit 3, reactor coolant leakage identified in charging pump discharge piping and isolated

Documents reviewed by the inspectors are listed in the attachment.

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

b. Findings

No findings were identified.

.2 Event Report Review

a. Inspection Scope

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

b. Observations and Findings

(Closed) Licensee Event Reports 05000361/2008-008-00 and 05000361/2008-008-01.

#### “Missed Technical Specification Surveillance Requirement on Spare Station Battery”

The inspector reviewed the information the licensee provided to describe and analyze this event. On July 15, 2008, station backup battery B00X was declared operable and placed in service to allow work on station battery 2B008. On July 17, 2008, station battery 2B008 was returned to service and backup battery B00X was removed from service. On October 23, 2008, the licensee identified that when B00X was placed in service on July 15, it did not have a current quarterly surveillance for Surveillance Requirement 3.8.6.2. The required surveillance was successfully performed on July 26, 2008. This event was caused by a combination of an incorrect test procedure and failure to properly implement a transition plan for scheduling surveillances from the MOSAIC system to the Enterprise Resource Planning System. The licensee performed an extent of condition review and identified other examples of missed surveillances due to improper implementation of the transition. The other examples were subsequently successfully completed. The failure to meet surveillance test frequency is being treated as a minor violation because the subsequent surveillances were successfully performed and demonstrated that the equipment was capable of performing their safety functions. This failure to comply with technical specification requirement constitutes a violation of minor significance that is not subject to enforcement action in accordance with the NRC's Enforcement Policy. This Licensee Event Report and Supplement -01 are closed.

#### **40A5 Other Activities**

##### .1 (Closed) Temporary Instruction 2515/173, “Review of the Implementation of the Industry Groundwater Protection Voluntary Initiative”

###### a. Inspection Scope

An NRC assessment was performed of the licensee's groundwater protection program to determine whether the licensee implemented the voluntary Industry Groundwater Protection Initiative, dated August 2007 (Nuclear Energy Institute 07-07, ADAMS Accession Number ML072610036). The inspectors interviewed personnel, performed walkdowns of selected areas, and reviewed the following items:

- Records of the site characterization of geology and hydrology
- Evaluations of systems, structures, and or components that contain or could contain licensed material and evaluations of work practices that involved licensed material for which there is a credible mechanism for the licensed material to reach the groundwater
- Implementation of an onsite groundwater monitoring program to monitor for potential licensed radioactive leakage into groundwater
- Procedures for the decision making process for potential remediation of leaks and spills, including consideration of the long-term decommissioning impacts
- Records of leaks and spills recorded, if any, in the licensee's decommissioning files in accordance with 10 CFR 50.75(g)



- Protocols for notification to the local and state officials, and to the NRC regarding detection of leaks and spills
- Protocols and/or procedures for 30-day reports if an onsite groundwater sample exceeds the criteria in the radiological environmental monitoring program
- Groundwater monitoring results as reported in the annual effluent and/or environmental monitoring report
- Licensee and industry assessments of implementation of the groundwater protection initiative

b. Findings

No findings were identified.

.2 (Closed) Temporary Instruction 2515/180, "Inspection of Procedures and Processes for Managing Fatigue"

a. Inspection Scope

The objective of this Temporary Instruction was to determine if licensees' implementation procedures and processes required by 10 CFR 26, Subpart I, "Managing Fatigue" are in place to reasonably ensure the requirements specified in Subpart I are being addressed. The Temporary Instruction applies to all operating nuclear power reactor licensees but is intended to be performed for one site per utility. The inspector interfaced with the appropriate station staff to obtain and review station policies, procedures and processes necessary to complete all portions of this Temporary Instruction.

b. Findings

No findings were identified.

.3 Institute of Nuclear Power Operations (INPO) Assessment Review

The inspectors reviewed the Institute for Nuclear Power Operations (INPO) Biennial Evaluation and Assessment Report for SONGS. The inspectors noted that the INPO report was generally commensurate with NRC assessment of performance and that no significant safety issues requiring separate NRC follow-up were identified.

**40A6 Meetings**

Exit Meeting Summary

On June 29, 2010, the operation engineer inspectors presented their inspection results of training records to Mr. G. Cook, Manager, Compliance, by telephone.

On August 6, 2010, the inspectors presented the results of the radiation safety inspections to Mr. D. Bauder, Vice President and Station Manager, and other members of the licensee staff. The licensee acknowledged the issues presented.

On August 12, 2010, reactor inspectors presented their maintenance procedure follow-up inspection results to Mr. R. St. Onge, Director of Nuclear Regulatory Affairs, and Mr. E. Hubley, Director of Maintenance and Construction, along with members of their staff.

On August 27, 2010, the inspectors presented the results of the inspection of the onsite emergency preparedness program to Mr. R. Ridenoure, Senior Vice President and Chief Nuclear Officer, and other members of the licensee's staff. The licensee acknowledged the issues presented.

On September 24, 2010, the inspectors presented the results of the resident inspections to Mr. J. Sheppard, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

T. Adler, Manager, Maintenance/Systems Engineering  
B. Arbour, Operator Continuing Training Supervisor  
J. Armas, Supervisor, Maintenance Engineering Fluid Process  
D. Axline, Technical Specialist, Nuclear Regulatory Affairs  
D. Bauder, Plant Manager  
B. Corbett, Manger, Performance Improvement  
G. Cook, Manager, Compliance, Nuclear Regulatory Affairs  
B. Culverhouse, Manager, Offsite Emergency Preparedness  
K. Gallion, Manager, Onsite Emergency Preparedness  
M. Goettel, Director, Site Support  
M. Graham, Manager, Plant Operations  
A. Gray, Supervisor, Special Projects  
N. Hansen, Environmental Specialist  
R. Heckler, Manager, Environmental  
E. Hubley, Director, Maintenance/Construction  
J. Hurlocker, Supervisor, Radioactive Material  
G. Johnson, Jr., Senior Nuclear Engineer, Maintenance/Systems Engineering  
K. Johnson, Manager, Design Engineering  
L. Kelly, Engineer, Nuclear Regulatory Affairs  
M. Lewis, Manager, Health Physics  
D. Spires, Director, Work Control  
J. Madigan, Manager, Health Physics  
M. McBrearty, Licensing Engineer, Nuclear Regulatory Affairs  
T. McCool, Plant Manager  
A. Meichler, Mechanical/System Engineering Supervisor  
R. Nielsen, Supervisor, Nuclear Oversight  
N. Quigley, Manager, Maintenance/System Engineering  
R. Richter, Engineering Supervisor, Fire Protection  
C. Ryan, Manager, Maintenance & Construction Services  
A. Shean, Manager, Nuclear Oversight Division  
R. St. Onge, Director Nuclear Regulatory Affairs  
J. Todd, Manager, Security

#### **NRC Personnel**

M. Runyan, Senior Reactor Analyst

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened and Closed

05000361/2010004-01	NCV	Failure to Follow Procedures While Implementing a Design Change (Section 1R13)
05000361/2010004-02 05000362/2010004-02	NCV	Failure to Promptly Identify and Correct a Condition Adverse to Quality Associated with Safety-related Emergency Ventilation Fans (Section 1R15)
05000361/2010004-03 05000362/2010004-03	NCV	Failure to Provide Training Mandated by a Root Cause Evaluation (Section 4OA2)

Closed

05000361/2008-008-00 05000361/2008-008-01	LER	Missed Technical Specification Surveillance Requirement on Spare Station Battery (Section 4OA3)
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**LIST OF DOCUMENTS REVIEWED**

**Section 1R04: Equipment Alignment**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-3-3.19	4kV Emergency Bus Transfer Test	15
SO23-2-13.1	Diesel Generator Alignments	7
SO23-2-4	Auxiliary Feedwater System Operation	28
SD-SO23-780	Auxiliary Feedwater System	12
SO23-6-15	Operation of 125 VDC Systems	43
SD-SO23-140	1E and Non-1E 125 and 250 VDC Systems	20

NUCLEAR NOTIFICATIONS

NUMBER

201088708      201077154

MAINTENANCE ORDERS

NUMBER

800502496      800044941

DRAWINGS

NUMBER

TITLE

REVISION

40160A	P&ID Auxiliary Feedwater System No 1305	37
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30174                      One-Line Diagram 125 VDC Distribution Panel D2                      25

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
TCR 10060008	Transient Combustible Request	1

**Section 1R05: Fire Protection**

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
3-038	SONGS Pre-Fire Plans	6
2-002	SONGS Pre-Fire Plans	4
2-005	SONGS Pre-Fire Plans	7
3-041	SONGS Pre-Fire Plans	8

**Section 1R11: Licensed Operator Requalification Program**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
DYN 24	Dynamic Evaluation Exam	10b
TPG-RS10 C5	2010 Cycle 5 Simulator Summary	0
SO23-12-1	Standard Post Trip Actions	22
SO123-0-A1	Conduct of Operations	23

**Section 1R12: Maintenance Effectiveness**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-XV-5.3	Maintenance Rule Program	12

MAINTENANCE ORDERS

<u>NUMBER</u>	
0510295300	800054780

NUCLEAR NOTIFICATIONS

<u>NUMBER</u>
200467537

## Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-XV-2	Troubleshooting Plant Equipment and Systems	8
SO23-XX-34	Emergent Issue Response	3

### MAINTENANCE ORDERS

<u>NUMBER</u>
800570065

## Section 1R15: Operability Evaluations

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-XV-85	Boric Acid Corrosion Control Program	5
SO123-XV-52	Functionality Assessments and Operability Determinations	17
SO123-I-1.3	Work Activity Guidelines	28

### NUCLEAR NOTIFICATIONS

<u>NUMBER</u>				
200855521	200863597	200320131	200994852	200869205
201070500	201070472			

### MAINTENANCE ORDERS

<u>NUMBER</u>		
800468486	800366886	800563979

### DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
40127CS03	Component Cooling Water System (Heat Exchangers) System No 1203	33

### CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
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2P307 PSF	Differential Pressure	June 23, 2010
SO23-617-3-C292	OLS and Runway Erection and Collapse load Effects on Emergency Diesel Generator Unit 3	1
M-1203-150-AA		

**Section 1R19: Postmaintenance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-3-3.23	Diesel Generator Monthly Surveillance	48
SO123-I-1.3	Work Activity Guidelines	28
SO123-I-1.18	Foreign Material Exclusion Control	14
SO123-II-15.3	Temporary System Alteration and Restoration Form	17
SO23-2-4	Auxiliary Feedwater System Operation	28
SO23-II-9.54	Instrument Fittings Installation, Inspection, and Remake	4
SO23-3-3.30.4	Main Steam System Online Valve Test	12

NUCLEAR NOTIFICATIONS

NUMBER

201053761

MAINTENANCE ORDERS

NUMBER

70010159                      800432663

**Section 1R22: Surveillance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-3-3.60.4	Saltwater Cooling Pump and Valve Testing	12
SO23-3-3.37	Reactor Coolant System Water Inventory Balance	31
SO23-3-3.60.7	Containment Spray Pump and Valve Testing	13
SO23-3-3.60	Inservice Pump Testing Program	10
SO23-3-3.30	Inservice Valve Testing Program	20

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
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DBD-SO23-740	Safety Injection, Containment Spray, and Shutdown Cooling Systems	9
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MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
S21413MP307 (CPT)	Inservice Pump Test Record CPL	June 25, 2010
2P307-06-10	Inservice Pump Test Record PSF	June 23, 2010

**Section 1EP2: Alert Notification System Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-XVIII-10	Siren-Community Alert Siren System – System Description and Operational Guide	13
SO123-XVIII-10.1	Bi-weekly Silent Test	7,8
SO123-XVIII-10.3	Quarterly Growl Test	8,9,10,11,12
SO123-XVIII-10.4	Response to a Report of Inadvertent Siren Activation	6
SO123-XVIII-10.5	Annual Activation Test Procedures	7,8,9
SO123-XVIII-10.6	Inspection and Maintenance	7

**Section 1EP3: Emergency Response Organization Augmentation Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-VIII-0.201	Emergency Plan Equipment Surveillance Program	15-19
EPPG-SO23-G-2	SONGS Emergency Response Organization Fundamentals and Standards Guideline	3

**Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies**

PROCEDURES



<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
SO123-VII-0.100	Maintenance and Control of Emergency Planning Documents	13
SO123-VII-0.200	Emergency Plan Drills and Exercises	11
SO123-VII-0.201	Emergency Plan Equipment Surveillance Program	19
SO123-VII-0.202	Assignment of Emergency Response Personnel	10
SO123-XII-18.1	Audit Program	11
SO123-XII-18.4	Audit Planning, Performance, and Documentation	11
SO123-XII-18.15	Surveillance Program	11-1
SO123-XV-50.CAP-2	SONGS Nuclear Notification Screening	6
SO123-XV-50.CAP-3	Corrective Action Program Evaluations and Action Plans	9
SO123-XV-109	Procedure and Instruction Format and Content	2-1
SO123-XV-109.1	Processing Procedures and Instructions	3
SO123-XV-109.2	Procedure Conversion and Verification Process	2
SO123-XV-109.3	Procedure Evaluation Process	1
SO123-XV-109.4	Procedure Replacement Process	1
SO123-XV-109.5	Procedure Preparer Qualification Guidelines	0
SO123-XV-SA-1	Focused Assessment Process	0-2
SO123-XV-SA-1.1	Snapshot Assessments	0-1
SO123-XV-SA-2	Performance Assessment	0
SO123-XV-SA-4	Benchmarking Process	0
	SONGS NRC Inspection Pre-Assessment, August 11-14, 2010	
	Schedule of Emergency Preparedness Drills and Training, 2008 through 2010	August 23, 2010
SCES-011-08	Emergency Preparedness Program Audit	November 10, 2008

QUALITY ASSURANCE ASSESSMENTSNUMBER

SOS-013-08	SOS-016-08	SOS-027-08	SOS-030-08	SOS-002-09
SOS-014-09	SOS-030-09	SOS-035-09	SOS-038-09	SOS-001-10

EMERGENCY PREPAREDNESS DRILLSNUMBER

Drill 0804	Drill 0805	Drill 0901	Drill 0902	Drill 0904
Drill 0905	Drill 0906	Drill 1002		

CORRECTIVE ACTION NOTIFICATIONSNUMBER

200808002	200885850	200920918	201061761
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**Section 2RS07: Radiological Environmental Monitoring Program**PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-IX-1.1	Radiological Environmental Monitoring Program	9
SO123-IX-1.2	Air Sampling	15
SO123-IX-1.10	Review, Analysis, and Reporting of Radiological Environmental Monitoring Program Data	6
SO123-IX-1.20	Land Use Census	5
SO123-II-8.12	Primary Tower Meteorological Instrumentation Surveillance	12

NUCLEAR NOTIFICATIONSNUMBER

201040264	201036491	201040438	201014970	201040439
201040438	201015044	200398744	200475408	200306818
200483519	200749044	200765216	200937710	

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
SCES-004-09	Audit; Radiation Protection & Radioactive Material Control	May 22, 2009

CALIBRATION AND MAINTENANCE RECORDS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
800456100	Primary Met Tower 10/40M 6-Mo Surveillance	July 6, 2010
M3-7578	Calibration Report, Trimax Flow Computer	November 6, 2009
M3-7355	Calibration Report, Trimax Flow Computer	October 31, 2008
M3-7355	Calibration Report, Trimax Flow Computer	March 3, 2009
M3-7580	Calibration Report, Trimax Flow Computer	September 3, 2009

MISCELLANEOUS

<u>TITLE</u>	<u>DATE</u>
2008 Annual Radiological Environmental Operating Report	April 2009
2009 Annual Radiological Environmental Operating Report	April 2010
NUPIC Joint Audit of Teledyne Brown Engineering – Environmental Services	October 29, 2008
2008 Interlaboratory Comparison Program Report	

**Section 2RS08: Radioactive Solid Waste Processing and Radioactive Material handling, Storage, and Transportation**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-VII-8.1	Solid Radioactive Waste Stream Analysis for Classification and Typification	20
SO123-VII-8.1.14	Radioactive Material Container Labeling	2
SO123-VII-8.2	Shipment of Radioactive Material	25
SO123-VII-8.5.1	Radwaste Process Control Program	10
SO123-VII-8.5.4	Transfer of Waste/ Radioactive Material to a Processing Container	7

NUCLEAR NOTIFICATIONS

<u>NUMBER</u>				
200079757	200855621	200757314	800311384	201029320
200165665	201034135	200165818	800303993	200997253
200387225	200927352	200524489	200378548	200395692
201035594	201016257	800070479	200993260	200132563
200378818	200931147	200005233	200976104	201033610
200720334	200393042	200948512	200331895	20099105
200424685	200331502	201012142	200393042	201044941
200915123				

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>TITLE</u>	<u>DATE</u>
4 <sup>th</sup> Quarter 08 Health Physics Division Performance Assessment Report	January 31, 2009
1 <sup>st</sup> Quarter 09 Health Physics Division Performance Assessment Report	April 24, 2009
2 <sup>nd</sup> Quarter 09 Health Physics Division Performance Assessment Report	June 10, 2009
4 <sup>th</sup> Quarter 09 Health Physics Division Performance Assessment Report	March 11, 2010

RADIOACTIVE MATERIAL SHIPMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
08-2804	DAW shipment	February 8, 2008
08-2807	Type B Resin Shipment	April 3, 2008
09-6905	DAW HIC shipment	May 19, 2009
10-1008	PC1 Box to Uniteck Decon Facility	February 9, 2010

SURVEYS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
100726-004	37 Foot Elevation Filter Alley	July 26, 2010
100708-011	37 Foot Elevation Filter Alley	July 8, 2010
100705-003	37 Foot Elevation Filter Alley	July 5, 2010
100510-011	37 Foot Elevation Filter Alley	March 10, 2010
100504-005	37 Foot Elevation Filter Alley	March 4, 2010

## Section 40A1: Performance Indicator Verification

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
SO123-VIII-0.301	Emergency Telecommunications Testing	13, 14
SO123-VIII-0.302	Onsite Emergency Siren System Test	5
SO123-VIII-0.401	Emergency Preparedness Performance Indicators	1, 2
0EPG-SO123-G-3	Offsite Emergency Planning Alert and Notification System Performance Indicator	0
SO123-VIII-30.7	Emergency Notifications	9-12-3
	Schedule for Simulator As-Found Sessions, 2008-2010	August 23, 2010
	Schedule of Drill and Exercise Performance Indicator Opportunities July 2009 through July 2010	August 23, 2010
	Data Table: Success Rates for Classification Job Performance Measures in 2009 and 2010	August 23, 2010
	Emergency Preparedness Simulator Scenario 1	
	Emergency Preparedness Simulator Scenario 2	
	Emergency Preparedness Simulator Scenario 3	

### MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
Performance Indicator Data BI02	RCS Identified Leakage	0
	Control Room Logs	
	MSPI Derivation Report (Unit 2 Cooling Water System)	June 2010
	MSPI Derivation Report (Unit 3 Cooling Water System)	June 2010
	MSPI Derivation Report (Unit 2 Residual Heat Removal System)	June 2010
	MSPI Derivation Report (Unit 3 Residual Heat Removal System)	June 2010

## Section 40A2: Identification and Resolution of Problems

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-0-A1	Conduct of Operations	26
SO123-I-9.13	480 V Line starter Inspection	14
SO123-I-9.12	Motor Control Center Cleaning	12

### NUCLEAR NOTIFICATIONS

<u>NUMBER</u>				
200524653	200980063	200968634	200281150	200707779
200984340	200984403	200984342	200898033	200848941

### ACTION REQUESTS

<u>NUMBER</u>
050601315

## Section 40A3: Event Follow-Up

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-13-14	Reactor Coolant Leak	14
SO23-2-8.1	Saltwater Cooling System Removal/Return to Service Evolutions (Online or Outage)	10
SO23-2-5	Circulating Water System Operation	26

### NUCLEAR NOTIFICATIONS

<u>NUMBER</u>				
200467537	201014992	201014991	201015085	201015006
201015073	201015074	201063937		

### MAINTENANCE ORDERS

<u>NUMBER</u>
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05102953000

**Section 40A5: Other Activities**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-GPI-1	Ground Water Protection Initiative	0
SO123-IX-1.4.1	Groundwater Monitoring	4
SO123-XV-3.3	NRC Reporting Requirements and Assessments	15
SO123-XV-3.5	Ground Water Protection Initiative Voluntary Communication Protocol	1

NUCLEAR NOTIFICATIONS

<u>NUMBER</u>				
200269892	200395947	200363272	200561139	200791681
200839154				

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>TITLE</u>	<u>DATE</u>
Independent Assessment of SONGS' Implementation of the Ground Water Protection Initiative	December 11, 2008
NEI Groundwater Protection Initiative NEI Peer Assessment Report	September 26, 2009