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

February 9, 2012

EA-11-154

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

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION – NRC INTEGRATED INSPECTION REPORT 05000361/2011005 and 05000362/2011005

Dear Mr. Dietrich:

On December 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your San Onofre Nuclear Generating Station, Units 2 and 3. The enclosed integrated inspection report documents the inspection results which were discussed on January 6, 2012, 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.

Three self-revealing findings of very low safety significance (Green) were identified during this inspection. Two of these findings were determined to involve violations of NRC requirements. Further, two licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest these non-cited 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, Region IV; 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.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your

disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at the San Onofre Nuclear Generating Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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

Docket Nos. 0500050361, 0500050362
License Nos. NPF-10, NPF-15

Enclosure:
NRC Inspection Report 05000361/2011005 and 05000362/2011005
w/Attachments:
1. Supplemental Information
2. Information Request for inspection activities documented in 71124.01, 71124.02, 71124.03

cc w/Enclosure: Electronic Distribution

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	0500050361, 0500050362
License:	NPF-10, NPF-15
Report:	05000361/2011005 and 05000362/2011005
Licensee:	Southern California Edison Co. (SCE)
Facility:	San Onofre Nuclear Generating Station, Units 2 and 3
Location:	5000 S. Pacific Coast Hwy San Clemente, California
Dates:	September 24 through December 31, 2011
Inspectors:	C. Alldredge, Health Physicist L Carson, Senior Health Physicist P. Elkmann, Senior Emergency Preparedness Inspector C. Osterholtz, Senior Operations Engineer J. Reynoso, Resident Inspector D. Stearns, Health Physicist G. Warnick, Senior Resident Inspector M. Young, Reactor Inspector
Approved By:	Ryan E. Lantz Chief, Project Branch D Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000361/2011005, 05000362/2011005; 09/24/2011 – 12/31/2011; San Onofre Nuclear Generating Station, Units 2 and 3, Integrated Resident and Regional Report; Occupational Radiation Safety, Event Follow-up

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspection by region-based inspectors. Two Green non-cited violations and a Green finding 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 cross-cutting 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. A self-revealing non-cited violation of Technical Specification 5.5.1.1, "Procedures," was identified for the failure of operations personnel to adequately implement the appropriate compensatory measures per alarm response procedure to ensure equipment was maintained as required by technical specifications. Specifically, on September 13, 2011, operations personnel failed to implement the compensatory measures required by alarm response Procedure SO23-15-53.B, to maintain the safety-related condensate storage tank water level within limits required by technical specifications. The issue was entered into the licensee's corrective action program as Nuclear Notification NN 201644782.

  The performance deficiency is more than minor, and therefore a finding, because it was associated with Mitigating Systems Cornerstone attribute of human performance and affected the associated cornerstone objective to ensure 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 it was not a design or qualification deficiency confirmed not to result in loss of operability or functionality; did not result in a loss of system safety function; did not represent an actual loss of safety function of a single train for greater than its technical specification allowed outage time; was not an actual loss of safety function of one or more non-technical specification trains of equipment designated as risk significant per 10 CFR 50.65 for greater than 24 hours; and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance associated with the decision-making component because operations personnel

failed to use a systematic process to effectively communicate and formally establish required compensatory measures to ensure that condensate storage tank water inventory remained within technical specification limits [H.1(a)](Section 4OA3.1).

- Green. A self-revealing finding was identified for the failure to take adequate corrective actions for degraded equipment associated with the Unit 3 full flow condensate polishing demineralizer system. Specifically, on October 27, 2011, operations personnel failed to take adequate corrective actions for an unexpected rise in ammonia day tank level and annunciation of an ammonia day tank high level, which eventually resulted in an ammonia leak from the ammonia day tank on November 1, 2011, that caused areas of the turbine building to become inaccessible requiring an emergency declaration at the ALERT level. The issue was entered into the licensee's corrective action program as Nuclear Notification NN 201713841.

  The performance deficiency is more than minor because the performance deficiency was a precursor to a significant event (Emergency Declaration), and is therefore a finding. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding did not result in a loss of safety function for greater than the technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding has a cross-cutting aspect in the area of human performance associated with resources because the licensee failed to provide adequate procedural guidance to operations personnel for responding to full flow condensate polishing demineralizer system degrading conditions [H.2(c)](Section 4OA3.2).

Cornerstone: Occupational Radiation Safety

- Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.8.1 for the failure to control work in a high radiation area. On August 25, 2011, diving was performed in a high radiation area using stay time calculations instead of the radiation protection coverage described in the Technical Specifications. The licensee suspended further diving operations until interim corrective actions were put in place. The licensee placed this issue into their corrective action program as Nuclear Notification NN 201620253.

  The failure to adequately control work in a high radiation area was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it negatively impacted the Occupational Radiation Safety cornerstone attribute of program and process and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that a worker received unplanned, unintended radiation dose. Using NRC Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance because: (1) it was not associated with ALARA

planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This finding has a cross-cutting aspect in the area of human performance related to resources. Specifically, the licensee did not have a diving procedure to control this evolution [H.2.(c)] (Section 2RS01).

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period at essentially full power. On December 13, 2011, the power coastdown to refueling outage U2C17 was initiated. Power was reduced at a steady, controlled rate to approximately 83 percent by the end of the inspection period.

Unit 3 began the inspection period at essentially full power. On December 4, 2011, power was reduced to approximately 83 percent due to a partially slipped control element assembly. Following corrective maintenance and recovery of the control element assembly, the unit returned to full power on December 5, 2011, and remained there for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

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

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

- November 30 through December 1, 2011, the inspectors completed a review of the licensee's winter seasonal readiness per Procedure SO23-XX-29.1, "Seasonal Readiness," Revision 2

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

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

Since thunderstorms with potential high winds were forecast in the vicinity of the facility for October 6, 2011, the inspectors reviewed the plant personnel's overall preparations/protection for the expected weather conditions. On October 5, 2011, the inspectors walked down the intake structure and areas adjacent to electrical transformer systems because their safety-related functions could be affected, or required, as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the plant staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during high winds. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the UFSAR and performance requirements for the systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- November 2, 2011, Unit 2, component cooling water system train A
- December 19, 2011, Unit 2, auxiliary feedwater train A associated with pump MP141 while pump MP504 was out of service for maintenance

- December 22, 2011, Unit 3, saltwater cooling pump train A

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

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

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On November 30, 2011, the inspectors performed a complete system alignment inspection of the Unit 3 train B component cooling water system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Fire Inspection Tours

a. Inspection Scope

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

- October 15-16, 2011, Units 2 and 3, auxiliary control and turbine buildings
- October 21, 2011, Unit 3, fuel handling building
- December 9, 2011, Unit 3, auxiliary feedwater pump room
- December 20, 2011, Unit 2, fuel handling building

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 four quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

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

- December 1, 2011, Units 2 and 3, auxiliary control and safety equipment buildings

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

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the Unit 3 component cooling water heat exchanger train A. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in EPRI Report NP 7552, “Heat Exchanger Performance Monitoring Guidelines”; the licensee properly utilized biofouling controls; the licensee’s heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants.” Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one heat sink inspection sample as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

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

.1 Annual Inspection

a. Inspection Scope

The inspector reviewed the results of the examinations and operating tests for both units to satisfy the annual inspection requirements.

On December 13, 2011, the licensee informed the lead inspector of the following Unit 2 and 3 results:

- 15 of 15 crews passed the simulator portion of the operating test
- 88 of 88 licensed operators passed the simulator portion of the operating test
- 86 of 88 licensed operators passed the Job Performance Measure portion of the examination

One individual who failed the Job Performance Measure portion of the examination is being remediated. The other individual who failed the same portion of the examination is having his license terminated.

The inspector completed one inspection sample of the annual licensed operator requalification program.

b. Findings

No findings were identified.

.2 Quarterly Inspection

a. Inspection Scope

On October 12, 2011, the inspectors observed a crew of licensed operators in the plant's simulator during annual dynamic simulator 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 preestablished operator action expectations and successful critical task completion requirements. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- October 6, 2011, Units 2 and 3, emergency lighting out of service for temporary plant modification
- December 12, 2011, Unit 3, completed review of actions taken for increasing vibration trend on emergency diesel generator fuel oil transfer pump 3P093
- December 21, 2011, Unit 3, saltwater cooling room emergency fan MA370 inoperable

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 three quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- September 24, 2011, Unit 2, fill and vent of the spent fuel pool heat exchanger 2ME006, following relief valve replacement
- October 11, 2011, Unit 3, concurrent maintenance of train B, component cooling water heat exchanger 3ME002, and atmosphere dump valve 2HV8421
- December 23, 2011, Units 2 and 3, completed review of assessment and management of risk associated with the control room upgrade project

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 in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- September 29 through October 6, 2011, Unit 3, train A auxiliary feed water system pump 3P141 packing leak
- October 19, 2011, Unit 2, boric acid leak from charging pump header isolation valve 2HV9203
- October 31, 2011, Unit 2, emergency diesel generator 2G003 timing relay failure

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

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

These activities constitute completion of three operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

Temporary Modifications

a. Inspection Scope

To verify that the safety functions of important safety systems were not degraded, the inspectors reviewed the temporary modification on December 16, 2011, identified as Unit 2, temporary modifications associated with control room console 2CR055 and 2CR065 replacement.

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

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

b. Findings

No findings were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- October 6, 2011, Unit 3, train A emergency diesel generator 3G002 postmaintenance testing following turbocharger replacement

- November 1, 2011, Unit 2, emergency diesel generator 2G003 timing relay replacement
- November 2, 2011, Unit 3, auxiliary feedwater pump MP141 postmaintenance testing following packing adjustment
- November 12, 2011, Unit 2, emergency diesel generator 4160V breaker relay postmaintenance testing
- December 1, 2011, Unit 3, train A component cooling water nitrogen backpressure regulator 3PCV 5403, replacement and pos maintenance testing
- December 1, 2011, Unit 3, train A component cooling water pump MP024, timing relay coil resistance measurement

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

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

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

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their

intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

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

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

- November 24, 2011, Unit 2, high pressure safety injection pump 2P019 inservice test

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

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

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspector performed an in-office review of the San Onofre Nuclear Generating Station Emergency Plan, Sections 2 and 5, Revision 31. This revision:

- Updated the medical agreements with Saddleback Memorial Medical Center, San Clemente, Tri-City Medical Center, Oceanside, Mission Hospital Regional Medical Center, Mission Viejo, Air Methods, Rialto, and the Orange County Fire Authority, Irvine, California
- Identified B.5.b program commitments in the text, and
- Made other minor editorial and title changes

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

These activities constitute completion of one sample as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on October 26, 2011, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulated control room, 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 Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational and Public Radiation Safety

2RS01 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

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

The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed walkdowns of various portions of the plant, performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation reported by the licensee in the Occupational Radiation Safety Cornerstone
- The hazard assessment program, including a review of the licensee's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels
- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions
- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey

performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability

- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage, and contamination controls; the use of electronic dosimeters in high noise areas; dosimetry placement; airborne radioactivity monitoring; controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools; and posting and physical controls for high radiation areas and very high radiation areas

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

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

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

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

b. Findings

Introduction. Inspectors reviewed a self-revealing Green non-cited violation of Technical Specification 5.8.1 for the failure to control work in a high radiation area. Specifically, diving was performed in a high radiation area using stay time calculations instead of providing positive radiation protection coverage.

Description. On August 25, 2011, diving activities took place to dismantle one of the removed Unit 3 steam generators as part of the Unit 3 steam generator segmentation project. The work was associated with Activity A0128110003 and used Radiation Exposure Permit 200200. An as low as is reasonably achievable (ALARA) work plan was created in preparation for this work. This plan included using a personal electronic dosimeter with an alarm setpoint of 150 mrem and an AMP-100 remote dose monitoring device to monitor real time radiation dose rates. Regulatory Guide 8.38, “Control of Access to High and Very High Radiation Areas of Nuclear Plants,” states that written procedures for any diving operations should be established to ensure proper radiological controls and specifies that divers should be equipped with a calibrated dosimeter that will provide a discernible alarm underwater. In the 1990’s, San Onofre Nuclear Generating Station had a procedure containing radiological controls and guidance for diving operations. However, in 1994, it was incorporated into the work control plan procedure, which was then incorporated into Procedure SO123-VII-20.10 “Health Physics Work Control Plans,” in 2009. The multiple incorporations of this procedure caused the diving guidance to be lost. During the initial stages of the project, there was difficulty with intermittent loss of signal from the AMP-100 equipment, which limited the health physics technician’s ability to continuously monitor the diver’s dose and dose rate. On the afternoon of August 25, 2011, after the AMP-100 malfunctioned, the Health Physics supervisor decided to use calculated stay time and the diver’s alarming personal

electronic dosimeter to control the diver's exposure. While working in the small space, the diver changed his body positioning from what was used in the stay time calculation, resulting in a higher effective dose rate and a non-conservative stay time calculation. The diver received a dose alarm on his personal electronic dosimeter, but could not hear the alarm because of the seal of his wetsuit. Therefore, this was an inadequate radiation monitoring device. The diver continued working after the dose alarm setpoint was reached, and exited the steam generator at the completion of his work with a dose of 241 mrem; 91 mrem greater than his dose alarm setpoint. The licensee suspended further diving operations until interim corrective actions were put in place and placed this issue into their corrective action program as Nuclear Notification NN 201620253.

Analysis. The failure to have an adequate electronic dosimeter was a performance deficiency. The finding was more than minor because it negatively impacted the Occupational Radiation Safety cornerstone attribute of program and process, and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that a worker received unplanned, unintended radiation dose. Using NRC Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance because: (1) it was not associated with ALARA planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This finding has a cross-cutting aspect in the area of human performance related to the resources component. Specifically, the licensee did not have a diving procedure to control this evolution [H.2.(c)].

Enforcement. Technical Specifications 5.8.1 states, in part, that any individual permitted to enter high radiation areas shall be provided with or accompanied by one or more of the following: a) a radiation monitoring device that continuously indicates the radiation dose rate in the area, b) a radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received, c) an individual qualified in radiation protection procedures with a radiation dose rate monitoring device. Contrary to the above, on August 25, 2011, while working on the Unit 3 steam generator segmentation project, a diver entered a high radiation area without an adequate radiation monitoring device that continuously integrated the radiation dose rate in the area and alarms when a present dose is received. Specifically, a diver entered the steam side of a Unit 3 steam generator with personal electronic dosimeter that was not audible through his wetsuit. Since this violation was of very low safety significance and was documented in the licensee's corrective action program as Nuclear Notification NN 201620253, it is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000362/2011005-01, "Failure to Control Work in a High Radiation Area."

2RS02 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

This area was inspected to assess performance with respect to maintaining occupational individual and collective radiation exposures ALARA. The inspectors used the

requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel and reviewed the following items:

- Site-specific ALARA procedures and collective exposure history, including the current 3-year rolling average, site-specific trends in collective exposures, and source-term measurements
- ALARA work activity evaluations/postjob reviews, exposure estimates, and exposure mitigation requirements
- The methodology for estimating work activity exposures, the intended dose outcome, the accuracy of dose rate and man-hour estimates, and intended versus actual work activity doses and the reasons for any inconsistencies
- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Audits, self-assessments, and corrective action documents related to ALARA planning and controls since the last inspection

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

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

b. Findings

No findings were identified.

2RS03 In-plant Airborne Radioactivity Control and Mitigation (71124.03)

a. Inspection Scope

This area was inspected to verify in-plant airborne concentrations are being controlled consistent with ALARA principles and the use of respiratory protection devices on-site do not pose an undue risk to the wearer. The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- The licensee's use, when applicable, of ventilation systems as part of its engineering controls

- The licensee's respiratory protection program for use, storage, maintenance, and quality assurance of NIOSH certified equipment, qualification and training of personnel, and user performance

- The licensee's capability for refilling and transporting self-contained breathing apparatus (SCBA) air bottles to and from the control room and operations support center during emergency conditions, status of SCBA staged and ready for use in the plant and associated surveillance records, and personnel qualification and training

- Audits, self-assessments, and corrective action documents related to in-plant airborne radioactivity control and mitigation since the last inspection

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

These activities constitute completion of the one sample as defined in Inspection Procedure 71124.03-05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the 3rd Quarter 2011 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

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

b. Findings

No findings were identified.

.2 Safety System Functional Failures (MS05)

a. Inspection Scope

The inspectors sampled licensee submittals for the safety system functional failures performance indicator for Units 2 and 3 for the period from the fourth quarter 2010 through third quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73." The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

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

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for Units 2 and 3 for the period from the fourth quarter 2010 through third quarter 2011. 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 reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 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. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two reactor coolant system specific activity samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors reviewed performance indicator data for the third quarter of 2010 through the third quarter of 2011. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed performance indicator data for the third quarter of 2010 through the third quarter of 2011. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

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

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

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee 2011 oversight audit program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on equipment reliability and maintenance findings, but also focused their review on timeliness issues. The inspectors considered the 6-month period of June 2011 through December 2011. The inspectors also compared the 2010 audit schedule and findings to ensure significant issues of concerns were properly entered and corrected in the corrective action program.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

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

b. Findings

No findings were identified.

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors performed a review of Unit 2 spent fuel reconstitution activities. The inspectors focus their review of the licensee's immediate response and subsequent long term corrective actions following an event involving maintenance and personnel operation of the gantry crane hook that occurred on October 16,2011.

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 Licensee's Actions to Resolve Cross-Cutting Theme

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 substantive cross-cutting issue H.1.(b), dealing with the licensee's ability to use conservative decision making when evaluating and correcting problems (see Manual Chapter 0310, "Components Within the Cross-Cutting Areas," Dated October 28, 2011, Section 06). The inspectors also discussed performance improvement details with licensee representatives, and performed a review of licensee initiatives to address deficiencies in the conservative decision making process. Documents reviewed by the inspectors are listed in an attachment to this report.

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

b. Observations and Findings

No findings were identified. Overall, the licensee's recovery plan appeared to address the appropriate deficiencies necessary for performance improvement.

4OA3 Event Follow-up (71153)

.1 Event Follow-Up

a. Inspection Scope

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

- September 13, 2011, Unit 3 unexpected loss of condenser vacuum during return to full power activities
- November 1, 2011, Unit 3, ammonia leak which resulted in an emergency declaration at the ALERT level

Documents reviewed by the inspectors are listed in the attachment.

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

b. Findings

.1 Failure to Monitor Condensate Storage Tank Level

Introduction. The inspectors reviewed a self-revealing Green non-cited violation of Technical Specification 5.5.1.1 for the failure of operations personnel to adequately implement the appropriate compensatory measures to ensure condensate storage tank water inventory was maintained as required by technical specifications.

Description. On September 13, 2011, operations personnel isolated the automatic make-up to safety-related condensate storage tank 3T-120, to support planned work on tank level instrument calibration. The work process supervisor and operations supervisor both acknowledged the normal make-up to the condensate storage tank was isolated in support of this planned maintenance. In accordance with Procedure SO23-15-53.B, "Annunciator Panel 53B, Main Feedwater Pump K005/Condensate," Revision 20, operations personnel were required to establish compensatory measures to monitor tank level every four hours and verify water levels were maintained between 90 and 98 percent when isolating automatic makeup to the condensate storage tank.

Since normal secondary plant usage would eventually lower the tank 3T-120 water level, operations personnel manually filled the tank level to 93 percent while isolating automatic make-up. Operations supervision recognized compensatory measures were required by Procedure SO23-15-53.B, to maintain water level within administrative limits. However, operations personnel did not use a systematic process to effectively communicate and formally establish required compensatory measures to ensure that tank 3T-120 remained operable.

Over several hours, tank 3T-120 water level lowered below the 86.2 percent low level alarm set-point. However, tank 3T-120 low level annunciator did not alarm until the tank level had lowered to approximately 83 percent due to set-point drift. Just prior to the low level alarm an abnormal operating event occurred when condenser vacuum degraded due to unrelated equipment problems. At the time of the low level alarm, operations personnel did not place a high priority on alarm response because of distractions from the unexpected loss of condenser vacuum. Condensate Storage tank 3T-120 water level had lowered to approximately 80.3 percent, which was below technical specification level requirements, when operations personnel took action to manually make-up to restore level to the required band.

Analysis. The failure of operations personnel to follow procedures and implement appropriate compensatory measures to ensure safety-related equipment operability was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it was associated with Mitigating Systems Cornerstone attribute of human performance and affected the associated cornerstone objective to ensure 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 it was not a design or qualification deficiency confirmed not to result in loss of operability or functionality; did not result in a loss of

system safety function; did not represent an actual loss of safety function of a single train for greater than its technical specification allowed outage time; was not an actual loss of safety function of one or more non-technical specification trains of equipment designated as risk significant per 10 CFR 50.65 for greater than 24 hours; and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance associated with the decision-making component because operations personnel failed to use a systematic process to effectively communicate and formally establish required compensatory measures to ensure that condensate storage tank water inventory remained within technical specification limits [H.1(a)].

Enforcement. Technical Specification 5.5.1.1 requires, in part, that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, "Quality Assurance Program Requirement (Operations)," Appendix A, Section 5, "Procedures for Abnormal, Off Normal, or Alarm Conditions," recommends procedures for annunciator response. Alarm response Procedure SO23-15-53.B implemented controls for establishing compensatory measures to maintain condensate storage tank water level within technical specification limits when automatic make-up was isolated. Contrary to the above, on September 13, 2011, operations personnel failed to implement compensatory measures, required by Procedure SO23-15-53.B, to ensure the condensate storage tank water level remained within technical specifications limits when automatic make-up was isolated. Operations personnel took immediate actions to restore Condensate Storage tank 3T-120 level once the low level was identified. Because the finding is of very low safety significance and has been entered into licensee's corrective action program as Nuclear Notification NN 201644782, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000362/2011005-02, "Failure to Implement Required Compensatory Measures Resulted in Inoperable Condensate Storage Tank."

.2 ALERT Emergency Declaration

Introduction. A Green self-revealing finding was identified for the failure to take adequate corrective actions for degraded equipment associated with the Unit 3 full flow condensate polishing demineralizer (FFCPD) system. The degraded equipment resulted in an ammonia leak from the FFCPD ammonia day tank that caused areas of the turbine building to become inaccessible requiring an emergency declaration at the ALERT level.

Description. On October 27, 2011, operations personnel observed an unexpected rise in Unit 3 FFCPD ammonia day tank level and annunciation of an ammonia day tank high level alarm. Initial investigation did not identify a source for inleakage and considered other possible causes, such as thermal expansion. Subsequently, the tank high level alarm reset, and remained reset although the tank level remained above the high level alarm setpoint, and was above the local sight glass. Nuclear Notification NN 201706891 was initiated to document the issue and operations supervision was notified. However, due in part to miscommunications, the control room supervisor concluded the problem with rising tank level was not an urgent problem requiring immediate attention.

On November 1, 2011, due to continued ammonia inleakage, day tank level continued to rise to reach a vacuum breaker located at the top of the tank. The vacuum breaker valve failed at approximately 1430 hours which resulted in leakage out of the day tank into the ammonia day tank berm. Ammonia fumes entered the Unit 3 turbine building and resulted in restricted access to portions of the turbine building which satisfied the criteria for an ALERT declaration in accordance with Emergency Action Level Code HA3.1. Code HA3.1 criteria was satisfied when access to a Table H-1 Area, which included the turbine building, was prohibited due to toxic, corrosive, asphyxiant, or flammable gases which jeopardized operation of systems required to maintain safe operations or safely shut down the reactor.

The licensee's investigation and evaluation of the event per Nuclear Notification NN 201713841 determined that procedural deficiencies existed, in that, guidance was not provided to operations personnel to take appropriate corrective actions to lower the ammonia day tank level, and to close the isolation valves from the ammonia storage tank, when the rising level was identified. As a result of the procedure deficiencies and watchstanders' belief that the issue was being addressed, the condition was allowed to degrade to the point where an ALERT declaration was required.

Analysis. The failure to take adequate corrective actions for degraded plant equipment was a performance deficiency. The performance deficiency is more than minor because the performance deficiency was a precursor to a significant event (Emergency Declaration), and is therefore a finding. The finding is associated with the Mitigating Systems Cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding did not result in a loss of safety function for greater than the technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding has a cross-cutting aspect in the area of human performance associated with resources because the licensee failed to provide adequate procedural guidance to operations personnel for responding to FFCPD system degrading conditions [H.2(c)].

Enforcement. Procedure SO123-XV-50, "Corrective Action Program," Revision 25, required that problems were promptly identified, evaluated, and corrected. Contrary to this, on October 27, 2011, operations personnel failed to adequately identify, evaluate, and correct a problem associated with the Unit 3 FFCPD system. Specifically, operations personnel failed to take adequate corrective actions for an unexpected rise in ammonia day tank level and annunciation of an ammonia day tank high level. The lack of adequate corrective actions eventually resulted in an ammonia leak from the ammonia day tank on November 1, 2011, that caused areas of the turbine building to become inaccessible requiring an emergency declaration at the ALERT level. No violation of regulatory requirements occurred because the finding occurred on nonsafety secondary plant equipment. The licensee entered the finding into the licensee's corrective action program as Nuclear Notification NN 201713841: FIN 05000362/2011005-03, "Failure to Correct Degraded Plant Equipment Results in an Ammonia Spill."

.2 Event Report Review

a. Inspection Scope

The inspectors reviewed the below listed Licensee Event Report 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 Report 05000362/2011-001, "Missed Technical Specification (TS) Limiting Condition for Operation (LCO) Surveillance Requirement When One Source Range Monitor Removed From Service"

On January 25, 2011, with Unit 3 in Mode 5, control room personnel identified an administrative error that resulted in not tracking the entry into a technical specification limiting condition for operation when removing one of two source range monitor channels from service. Technical Specification 3.3.13 limiting condition for operation (LCO), Condition A.2, required, in part, when in Modes 3, 4, and 5, verification of shutdown margin within 4 hours of removing one channel from service, and once every 12 hours thereafter.

Contrary to this requirement, on January 24, 2011, with Unit 3 in Mode 5, the source range monitor channel 2 was removed from service, but the work control operator failed to initialize the LCO administrative tracking process and notify the control room to perform the required shutdown margin verification within 4 hours, and once every 12 hours thereafter. This error was identified during the turnover process by on-coming control room personnel.

Immediate actions were taken to complete the shutdown margin verification by performing the surveillance that confirmed adequate reactor coolant system boron concentration to ensure shutdown margin. An apparent cause evaluation was completed and corrective actions implemented included changes to work control procedures such that technical specification entries received redundant reviews.

The failure to meet the requirements of Technical Specification 3.3.13, Condition A.2, did not impact safety equipment and caused no safety consequences since adequate shutdown margin was verified. This failure to comply with technical specifications constitutes a violation of minor significance that is not subject to enforcement action in accordance with the NRC's Enforcement Policy. This condition was entered into the corrective action program as Nuclear Notification NN 201299452. This licensee event report is closed.

4OA6 Meetings

Exit Meeting Summary

On November 4, 2011, the inspectors presented the results of the radiation safety inspections to T. McCool, Plant Manager, and other members of the licensee staff. The licensee acknowledged the issues presented.

On December 13, 2011, the inspector discussed the results of in-office inspection of changes to the licensee's emergency plan to Ms. K. Gallion, Manager, Onsite Emergency Preparedness, and other members of the licensee's staff. The licensee acknowledged the issues presented.

On December 13, 2011, the lead inspector obtained the final annual examination results and telephonically exited the results of the annual requalification inspection with Mr. Bill Arbour, Operations Training Manager. The inspector did not review any proprietary information during this inspection.

On December 22, 2011, the inspectors presented the problem identification and resolution focused baseline inspection results to Mr. P. Dietrich, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented.

On January 6, 2012, the inspectors presented the quarterly inspection results to Mr. P. Dietrich, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented.

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

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green and Severity Level IV respectively) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section 2.3.2 of the NRC Enforcement Policy for being dispositioned as non-cited violations.

1. Title 10 CFR 20.1802 states, "The licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage." On September 21, 2011, after the completion of the daily performance test of the whole body counter using a mixed gamma source, the check source was not returned to the locked storage location. Since the material was left in an uncontrolled location outside of the Restricted Area there were no barriers to prevent a member of the public from coming into contact with the source. The inspectors determined this finding to be of very low safety significance because the potential dose impact to a member of the public was less than 5 mrem. This issue was documented in the licensee's corrective action program as Nuclear Notification NN 201657977.

2. Unit 2, Technical Specification 5.5.1.1, "Procedures," states, in part, written procedures shall be established, implemented, and maintained covering the following activities:

(a) The applicable procedures recommended in [NRC] Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, Section 7.e(4), states, in part, that radiation protection procedures should be written for contamination control. Procedure SO123-VII-20, “Health Physics Program,” Revision 14, Section 6.10.6.5 requires, in part, individuals entering a radiologically controlled area sign-up on the appropriate radiation exposure permit acknowledging that they agree to comply with the radiological controls specified on the radiation exposure permit. Radiation Exposure Permit 200101, Revision 13, requires, in part, that paper coveralls be worn inside contamination areas. Procedure SO123-VII-20.10, “Radiological Work Planning and Control,” Revision 14, Section 6.9.3 states, in part, that the health physics technician in the field can authorize and implement a field change if the work can be safely controlled by increasing or decreasing the protective clothing requirements.

Contrary to the above, on December 31, 2009, a senior health physics technician failed to comply with the radiological controls specified in Radiation Exposure Permit 200101. Specifically, the technician was observed in a posted contamination area without paper coveralls or appropriate protective clothing. The technician instead wore rubber gloves and placed masslin cloth towels under his feet as he worked. The technician's non-compliance with the terms of the radiation exposure permit was not the result of any field change authorized under San Onofre Nuclear Generating Station procedures. Accordingly, the technician's non-compliance with the radiation exposure permit resulted in a violation of San Onofre Nuclear Generating Station procedures tied to Technical Specification 5.5.1.1.

This issue was entered into the licensee’s corrective action program as Nuclear Notification NN 200727341. The licensee observed the health physics technician actions on a video camera and licensee management immediately launched a review. This violation is being treated as a noncited violation in accordance with Section 2.3.2 of the NRC Enforcement Policy because the licensee identified the violation and promptly reported it to the NRC; it was an isolated action of an employee without management involvement; it was not caused by a lack of management oversight; and, the licensee took appropriate remedial action commensurate with the circumstances.

SUPPLEMENTAL INFORMATION
KEY POINTS OF CONTACT

Licensee Personnel

T. Adler, Manager, Maintenance/Systems Engineering
B. Arbour, Manager, Operations Training
J. Armas, Supervisor, Maintenance Engineering Fluid Process
D. Axline, Inspections Manager, Nuclear Regulatory Affairs
D. Bauder, Vice President, Station Manager
C. Cates, Manager, Recovery
B. Corbett, Director, Performance Improvement
J. Davis, Manager, Plant Operations
D. Dick, Supervisor, Chemistry
R. Elsasser, Manger, Training
G. Fausett, ALARA Coordinator, Health Physics
O. Flores, Director, Nuclear Oversight
T. Gallaher, Consultant, Performance Improvement
K. Gallion, Manager, Onsite Emergency Preparedness
S. Genschaw, Manager, Maintenance & Construction Services
S. Gianell, Supervisor, Emergency Preparedness
Z. Harvey, Health Physics
G. Johnson, Jr., Senior Nuclear Engineer, Maintenance/Systems Engineering
L. Kelly, Engineer, Senior Nuclear Engineer, Nuclear Regulatory Affairs
G. Kline, Senior Director Engineering and Technical Services
M. Lewis, Manager, Health Physics
J. Madigan, Director, Site Recovery
A. Mahindrakar, ISI Manager, Maintenance Engineering
T. McCool, Plant Manager
L. Pepple, ALARA General Foreman, Health Physics
T. Palmisano, Vice President, Engineering, Projects and Site Support
N. Quigley, Manager, Maintenance/System Engineering
R. Richter, Engineering Supervisor, Fire Protection
M. Russell, Health Physicist, Health Physics
S. Sewell, Health Physics
M. Stevens, Engineer, Nuclear Regulatory Affairs
R. St. Onge, Director, Nuclear Regulatory Affairs
R. Treadway, Manager, Nuclear Regulatory Affairs
S. Vaughan, ALARA Manager, Health Physics
D. Yarbrough, Director, Plant Operations
K. Yhip, Environmental Engineer, Nuclear Regulatory Affairs

NRC Personnel

M. Runyan, Senior Reactor Analyst

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000362/2011005-01	NCV	Failure to Control Work in a High Radiation Area (Section 2RS01)
05000362/2011005-02	NCV	Failure to Implement Required Compensatory Measures Resulted in Inoperable Condensate Storage Tank (Section 4OA3.1)
05000362/2011005-03	FIN	Failure to Correct Degraded Plant Equipment Results in an Ammonia Spill (Section 4OA3.2)

Closed

05000362/2011-001	LER	Missed Technical Specification (TS) Limiting Condition for Operation (LCO) Surveillance Requirement When One Source Range Monitor Removed From Service

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

PROCEDURES

NUMBER	TITLE	REVISION
SO23-XX-29.1	Seasonal Readiness	2
SO23-13-8 ISS2	Severe Weather	14

Section 1R04: Equipment Alignment

PROCEDURES

NUMBER	TITLE	REVISION
SO23-2-17.1	Component Cooling Water System Alignments	29
SO23-2-4	Auxiliary Feedwater System Operation	34
SO23-5-1.9	System Alignment Requirements for Plant Startup	6 EC 6-3
SO23-2-8.1	Saltwater Cooling Operation Alignment	14

NUCLEAR NOTIFICATIONS

NUMBER	
201715017	201750323

DRAWINGS

NUMBER	TITLE	REVISION
40127DS03	P&ID Component Cooling Water System	20
40127ES03	P&ID Component Cooling Water System	28
40127A	P&ID Component Cooling Water System	30
40127B	P&ID Component Cooling Water System	37
40127C	P&ID Component Cooling Water System	45
40160A	P&I Diagram Auxiliary Feedwater System	44
40126B	System No. 1203 Salt Water Pumps	27

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	Operations Logs	November 2, 2011
SD-SO23-780	Auxiliary Feedwater System Description	12
SD-SO23-410	System Description Salt Water Cooling	9

Section 1R05: Fire Protection

NUCLEAR NOTIFICATIONS

NUMBER
201715017

DRAWINGS

NUMBER	TITLE	REVISION
3-005	Pre-Fire Plans	16
3-037	Pre-Fire Plans	7
2/3-020	Pre-Fire Plans (-)5 ft to 9 ft	7
2/3-024	Pre-Fire Plans 70 ft	7
3-043	Pre-Fire Plan - U3 AFW Pump Room, AFW Pipe Tunnel, Refueling Water and Condensate Storage Tanks(-)2'-6" to 30'-6"	6

	Symbol Legend	1

MISCELLANEOUS

NUMBER	TITLE	DATE
11120016	Fire Impairment - Door TK3 102	December 4, 2011

Section 1R06: Flood Protection Measures

PROCEDURES

NUMBER	TITLE	REVISION
SO23-2-16	Operation of Waste Water Systems	23

DRAWINGS

NUMBER	TITLE	REVISION
40010	General Arrangement Plan El 30' – (-)15'-6"	17

MISCELLANEOUS

NUMBER	TITLE	DATE
AR 070200174	Hydrostatic Barriers OE	February 5, 2007

Section 1R07: Heat Sink Performance

PROCEDURES

NUMBER	TITLE	REVISION
SO23-V-3.25	Component Cooling Water Heat Exchanger Testing	11
SO23-2-8	Saltwater Cooling System Operations	37

NUCLEAR NOTIFICATIONS

NUMBER
2011488431

DRAWINGS

NUMBER	TITLE	REVISION
SO23-404-12-D120	CCW Heat Exchanger Specifications	0
SO23-404-12-C106	Unit 2/3 CCW Heat Exchanger Thermal-Hydraulic Calculations	1

CALCULATIONS

NUMBER	TITLE	DATE
M-0027-029	U3R16-CCW/SWC Heat Exchanger Performance Tests	February 23, 2011
M-0027-023	Marco-fouling CCW/SWC Heat Exchanger Operability	February 22, 2008

Section 1R11: Licensed Operator Requalification Program

PROCEDURES

NUMBER	TITLE	REVISION
OTIG-009	Operator Training Instructions Guidelines	23
SO23-13-18	Reactor Protection System Failure	13
SO23-13-28	Rapid Power Reduction	3
NTD 1.11.12-1	Nuclear Training Department STA Dynamic Simulator Examination	0

Section 1R12: Maintenance Effectiveness

PROCEDURES

NUMBER	TITLE	REVISION
SO123-XIII-4.600	Fire Protection Impairment	12
SO23-XIII-4.300	U2/3 Safe Shutdown Components Impairment Scope Identification	15
SO23-V-3.4	Engineering Review of Pump Inservice Test	17 TCN 17-3
SO23-V-3.4	Engineering Review of Pump Inservice Test	18
SO23-V-3.4	Engineering Review of Pump Inservice Test	19
SO23-V-3.4	Engineering Review of Pump Inservice Test	20

NUCLEAR NOTIFICATIONS

NUMBER	
201115647	201149505

CALCULATIONS

NUMBER	TITLE	REVISION
M-0078-001	HVAC Intake Structure- SWC rooms Heat Load	0

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
PC 96-005	Proposed LCS change	August 22, 1996
MR-LTNG-02	Maintenance Rule Function Essential Lighting	October 7, 2011
MR-LTNG-01	Maintenance Rule Function Battery Emergency Lighting	October 6, 2011
DBD-SO23-750	Design Bases Document	4
3P093-02-09	IST Record	February 24, 2009
3P093-05-09	IST Record	May 12, 2009
3P093-06-09	IST Record	June 20, 2009
3P093-08-09	IST Record	August 11, 2009
3P093-11-09	IST Record	November 3, 2009
3P093-04-10	IST Record	April 20, 2010
3P093-05-10	IST Record	May 17, 2010
3P093-08-10	IST Record	August 4, 2010
3P093-10-10	IST Record	October 25, 2010
3P093-12-10	IST Record	December 29, 2010

3P093-03-11	IST Record	March 15, 2011
3P093-06-11	IST Record	June 9, 2011
3P093-09-11	IST Record	September 12, 2011

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	REVISION / DATE
SO123-XV-109.1	Abnormal Procedure 2-11-12	September 23, 2011
SO23-XX-8	Integrated Risk Management	9
SO23-XX-8	Integrated Risk Management	10

NUCLEAR NOTIFICATIONS

NUMBER				
201452166	201623206	201658771	201661674	201773028

WORK ORDERS

NUMBER			
800607182	800364266	800724223	800728881

MISCELLANEOUS

NUMBER	TITLE	DATE
1-11-017	Priority 1 Reading	November 8, 2011
	Operations Challenge Review Meeting	November 2, 2011
	Risk Significant Activity for Week	November 7, 2011
2-11-203	Priority 2 Reading	

Section 1R15: Operability Evaluations

PROCEDURES

NUMBER	TITLE	REVISION
SO23-2-4	Auxiliary Feedwater Operations	34
OSM-5	Operator Support Manual on Operator Rounds	5

NUCLEAR NOTIFICATIONS

NUMBER				
200994852	201640587	201671249	201685464	

WORK ORDERS

NUMBER		
800768412	800344004	800794354

Section 1R18: Plant Modifications

PROCEDURES

NUMBER	TITLE	REVISION
SO123-XXIV-10.1	Engineering Design Change Process – NECPs	26 EC 1

MISCELLANEOUS

NUMBER	TITLE	REVISION
NECP 800612760	Unit 2 Console Replacement (2CR055 and 2CR065)	0

Section 1R19: Postmaintenance Testing

PROCEDURES

NUMBER	TITLE	REVISION
SO23-3-3.23	Diesel Generator Operations	53
SO123-II-11.152	Circuit Device Tests and Overall Functional Test	19
SO2-II-11.1B-2	Surveillance Requirement Unit 2 ESF Train B	12
SO23-3-3.52	2A06 LOVS Load Shedding Circuits Functional Test 2	6 EC 2
SO23-I-5.6	Auxiliary Feedwater Pump Maintenance	24
SO23-3-3.31.3	Component Cooling Water Operations	19

NUCLEAR NOTIFICATIONS

NUMBER				
201361884	201647600	201665224	201665296	201667279
201667294	201667295	201670215	201670222	201675835
201713723	201750969			

WORK ORDERS

NUMBER				
800328829	800797723	800797721	800794354	800794537
800773319	800800334			

DRAWINGS

NUMBER	TITLE	REVISION
SO 23 32701	Elementary Drawing Reactor Auxiliaries CCW MP024	25

Section 1R22: Surveillance Testing

PROCEDURES

NUMBER	TITLE	REVISION
SO23-3-3.60.1	High Pressure Safety Injection Pump Testing	10
SO23-I-5.8	High Pressure Safety Injection Pump Overhaul	10
SO23-3-2.7	Safety Injection System Operation	29
SO23-XV-1	Post-Maintenance Retest Guide	12

NUCLEAR NOTIFICATIONS

NUMBER
201744641

WORK ORDERS

NUMBER				
800410989	800369365	800269020	800410989	800331662
800359387				

Section 1EP6: Drill Evaluation

PROCEDURES

NUMBER	TITLE	REVISION
SO123-VIII-0.401	Emergency Preparedness Performance Indicators	2

NUCLEAR NOTIFICATIONS

NUMBER
201678608

Section 2RS01: Radiological Hazard Assessment and Exposure Controls

PROCEDURES

NUMBER	TITLE	REVISION
SO123-VII-8	Control of Radioactive Material	14
SO123-VII-20	Health Physics Program	17
SO123-VII-20.6	External Occupational Exposure Monitoring	11
SO123-20.9VII-	Radiological Surveys	13
SO123-VII-20.9.2	Material Release Surveys	11
SO123-VII-20.9.4	Survey and Release of Personnel	12
SO123-VII-20.10	Radiological Work Planning and Controls	20
SO123-VII-20.10.6	High Contamination Area Control	4
SO123-VII-20.10.9	Removal of Objects and Work Around Contaminated Pools	1
SO123-VII-20.11	Access Control Program	15
SO123-VII-20.11.1	Radiological Posting	13
SO123-VII-20.14.9.1	Receipt, Inventory and Leak Testing of Sealed Radioactive Sources	8

NUCLEAR NOTIFICATIONS

NUMBER				
201156137	201157941	201165136	201165467	201185840
201189829	201192432	201192879	201199682	201206324
201220432	201220440	201225122	201231293	201239161
201252327	201262763	201266107	2012275964	201228982
201276276	201276278	201372347	201419339	201440406
201464357	201620253	201657977		

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
SCES-002-011	Radiation Protection and Radioactive Material Control Audit	May 6, 2011
	4Q10 Health Physics Division Performance Assessment Report	January 31, 2011
	1Q11 Health Physics Division Performance Assessment Report	May 6, 2011
	2Q11 Health Physics Division Performance Assessment Report	July 31, 2011

MISCELLANEOUS

NUMBER	TITLE	DATE
	NSTS Confirmation of Annual Inventory Reconciliation	January 25, 2011
NN 201620253	Root Cause Evaluation	October 21, 2011
ACE 201657977	Apparent Cause Evaluation	September 29, 2011
	Source Verification/Inventory and Leak Test	September 15, 2011

Section 2RS02: Occupational ALARA Planning and Controls

PROCEDURES

NUMBER	TITLE	REVISION
SO123-VII-8	Control of Radioactive Material	14
SO123-VII-20	Health Physics Program	17
SO123-VII-20.6	External Occupational Exposure Monitoring	11
SO123-VII-20.9	Radiological Surveys	13
SO123-VII-20.9.2	Material Release Surveys	11
SO123-VII-20.9.4	Survey and Release of Personnel	12

SO123-VII-20.10	Radiological Work Planning and Controls	20
SO123-VII-20.10.6	High Contamination Area Control	4
SO123-VII-20.10.9	Removal of Objects and Work Around Contaminated Pools	1
SO123-VII-20.11	Access Control Program	15
SO123-VII-20.11.1	Radiological Posting	13
SO123-VII-20.14.9.1	Receipt, Inventory and Leak Testing of Sealed Radioactive Sources	8

NUCLEAR NOTIFICATIONS

NUMBER

201156137	201157941	201165136	201165467	201185840
201189829	201192432	201192879	201199682	201206324
201220432	201220440	201225122	201252327	201239161
201262763	201266107	2012275964	201228982	201276276
201276278	201372347	201419339	201440406	201464357
201620253	201657977			

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
SCES-002-011	Radiation Protection and Radioactive Material Control Audit	May 6, 2011
	4Q10 Health Physics Division Performance Assessment Report	January 31, 2011
	1Q11 Health Physics Division Performance Assessment Report	May 6, 2011
	2Q11 Health Physics Division Performance Assessment Report	July 31, 2011
	R3C16 SGRP Post-Outage ALARA Report	June 16, 2011

RADIATION WORK PERMITS

NUMBER	TITLE	REVISION
200163	Activity A0316100013	4
200128	Activity A0316100013	1
200130	Activity A0316100013	3
200163	Activity A0316100008	0
200117	Activity A0316100008	0
200118	Activity A0316100008	1
200163	Activity A0316100018	1
200117	Activity A0316100018	0
200117	Work Order 800313904	0
200163	Work Order 800313904	0
200114	Activity A0330100064	1
200163	Activity A0330100064	0
200159	Activity A0330100064	1

Section 2RS03: In-plant Airborne Radioactivity Control and Mitigation

PROCEDURES

NUMBER	TITLE	REVISION
SO123-VII-20.13.4	Bauer Inicus 17 High Pressure Compressor	4
SO123-VII-20.13.3	National Draeger Self-Contained Breathing Apparatus	7
SO123-VII-20.13.8	Respirator Inventory, Control, Issue	11
SO123-VII-20.13	Radiological Respiratory Protection Program	8

NUCLEAR NOTIFICATIONS

NUMBER

201218395	201240038	201321478	201502942	201508614
201552446	201564498	201605849	201646551	201632635

MISCELLANEOUS

NUMBER	TITLE	DATE
Various	CGA Grade-D Air Analysis	February 2011- September 2011
	Respirator Qualification of Emergency Response Personnel	September 14, 2011

Section 4OA1: Performance Indicator Verification

PROCEDURES

NUMBER	TITLE	REVISION / DATE
4Q10	CDE Data Entry Verification	January 12, 2011
4Q11	31 Day Dose Report/ ODCM Dose Performance Indicator	January 10, 2011
1Q11	CDE Data Entry Verification	April 8, 2011
1Q11	31 Day Dose Report/ ODCM Dose Performance Indicator	April 11, 2011
2Q11	CDE Data Entry Verification	July 7, 2011
2Q11	31 Day Dose Report/ ODCM Dose Performance Indicator	July 8, 2011
3Q11	CDE Data Entry Verification NRC Occupational Radiation Safety PI	October 11, 2011
3Q11	31 Day Dose Report/ ODCM Dose Performance Indicator	October 7, 2011
	3rd Quarter NRC Occupational Radiation Safety	October 13, 2011
SO23-XXXVI-2.6	Evaluation of Reactor Coolant System (RCS) Activity	11
SO23-XV-24	Quarterly NRC Performance Indicator (PI) Process	9

SO123-III-1.1.23	Units 2/3 Chemical Control of Primary Plant and Related Systems	58

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	SONGS SSFF PI Summary	4th quarter 2010 – 3rd quarter 2011
LER 05000362/2011-002-00	As Found Condition of LOVS Relays Not Within Technical Specifications Limits	June 3, 2011
LER 05000362/2011-003-00	Wiring Error in Charging Pump Motor Circuitry Results in Loss of Fire Isolation	August 5, 2011
LER 05000361; 362/2010-004-00	EDG Ventilation Fan Nose Cone Corrosion Results in Fan Damage	September 3, 2010
LER 05000361/2010-002-00	Non-qualified Part in Turbine Driven Auxiliary Feedwater Pump	June 30, 2010
LER 05000361/2010-005-00	RWST Alignment to Non-Seismic Piping	December 10, 2010

Section 4OA2: Identification and Resolution of Problems

PROCEDURES

NUMBER	TITLE	REVISION
MRS-GEN-1186	Fuel Reconstitution 16x16 CE Fuel Assemblies	10
SO23-XXVII-4.154	Fuel Reconstitution	6
SO23-I-7.110	Fuel Handling Roof Jib Crane Operations	0
SO123-XII-2.5	Conduct of Nuclear Oversight	1
SO123-XII-18.4	Audit Planning, Performance, and Documentation	13

NUCLEAR NOTIFICATIONS

NUMBER				
200146292	200258836	200289984	200481911	200694047
200743417	200890459	201001287	201026985	201205637
201217134	201267678	201272208	201448584	201462413

201475499 201606472 201690347 201719467 201752273
201783438

WORK ORDERS

NUMBER
800680633
800275473

MISCELLANEOUS

NUMBER	TITLE	DATE
SCES-014-11	Equipment Reliability Audit	November 11, 2011

Section 4OA3: Event Follow-Up

PROCEDURES

NUMBER	TITLE	REVISION
SO23-3-3-3.25	Once a Shift Surveillance	34
SO123-XX-5	Work Control and Clearances	42

DRAWINGS

NUMBER	TITLE	REVISION / DATE
U2 FFCPD Area – 30’	FFCPD – Ammonia System	
C-7126	Vacuum Relief Valve	June 27, 1973

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
SCE EP (123) 11	SONGS Verbal Notification Form	17
	SONGS Prompt Investigation Report	
SD-SO23-270	System Description – Ammonia System	15
	SONGS Unit 3 Alert Logs – Log Entries Report	November 1, 2011
PNO-IV-11-008	Preliminary Notification of Event or Unusual Occurrence	November 2, 2011
	4-Hour report to NRC – Notification of state and local government agencies	November 1, 2011

The following items are requested for the Occupational Radiation Safety Inspection at San Onofre Nuclear Generating Station (October 24, 2011- October 28, 2011) Integrated Report 2011005

Inspection areas are Radiological Hazard Assessment and Exposure Controls (71124.01), Occupational ALARA Planning and Controls (71124.02), and In-Plant Airborne Radioactivity Control and Mitigation (71124.03).

Please provide the requested information in Sections C, D, F, and the other selected sections of each program area have it available for Regional Inspector review by October 10, 2011; and the balance of the information by October 24, 2011. Thank you for your support.

If you have any questions or comments, please contact me at (817)276-6547 or e-mail me at casey.alldredge@nrc.gov.

1. Radiological Hazard Assessment and Exposure Controls (71124.01)
NOTE: Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for the above inspector should be in a file/folder titled 1- A, Applicable organization charts in file/folder 1- B, etc.

A. List of contacts and telephone numbers for the Radiation Protection Organization Staff and Technicians

B. Applicable organization charts

C. Audits, self assessments, and LERs written since November 7, 2010, related to this inspection area

D. Procedure indexes for the radiation protection procedures

E. Please provide specific procedures related to the following areas. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.

1. Radiation Protection Program Description
2. Radiation Protection Conduct of Operations
3. Personnel Dosimetry Program
4. Posting of Radiological Areas
5. High Radiation Area Controls
6. RCA Access Controls and Radworker Instructions
7. Conduct of Radiological Surveys
8. Radioactive Source Inventory and Control
9. Declared Pregnant Worker Program

F. List of corrective action documents (including corporate and subtiered systems) written since November 7, 2010, associated with Radiological hazard assessment including, but not limited to:

1. Control of access to radiologically controlled areas
2. Electronic dosimeter alarms
3. Locked high radiation area key control
4. Radiological area posting

NOTE; The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

If not covered above, a summary of corrective action documents since (date)involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with of IP 71151)

G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity.)

H. List of active radiation work permits

I. Radioactive source inventory list

2. Occupational ALARA Planning and Controls (71124.02)

NOTE: In an effort to keep the requested information organized, please submit this information to us using the same lettering system below. For example, all contacts and phone numbers for the above inspector should be in a file/folder titled 2- A, Applicable organization charts in file/folder 2- B, etc.

A. List of contacts and telephone numbers for ALARA program personnel, if not included in 1.A

B. Applicable organization charts, if different from that provided in 1.B

C. Copies of audits, self-assessments, and LERs, written since November 7, 2010, focusing on ALARA, if different from 1.C

D. Procedure index for ALARA Program, if different from that provided in 1.D

E. Please provide specific procedures related to the following areas. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.

1. ALARA Program

2. ALARA Committee
3. Radiation Work Permit Preparation

F. A summary list of corrective action documents (including corporate and subtiered systems) written since November 7, 2010, related to the ALARA program. In addition to ALARA, the summary should also address Radiation Work Permit violations, Electronic Dosimeter Alarms, and RWP Dose Estimates, if not addressed in 1.F

NOTE; The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

G. List of work activities greater than 1 rem since November 7, 2010.

Include original dose estimate and actual dose.

H. Site dose totals and 3-year rolling averages for the past 3 years (based on dose of record)

I Outline of source term reduction strategy

3. In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

NOTE: In an effort to keep the requested information organized, please submit this information to us using the same lettering system below. For example, all contacts and phone numbers for the above inspector should be in a file/folder titled 3- A, Applicable organization charts in file/folder 3- B, etc.

Please provide the requested information in Sections C, D, E, and F for Regional Inspector review by October 10, 2011 Other sections may be requested on a case-by-case basis. Please provide the balance of the information by October 24, 2011. Thank you for your support.

A. List of contacts and telephone numbers for the following areas:

1. Respiratory Protection Program
2. Self contained breathing apparatus

B. Applicable organization charts, if different from that provided in 1.B

C. Copies of audits, self-assessments, vendor or NUPIC audits for contractor support (SCBA), and LERs, written since November 7, 2010, related to:

1. Installed air filtration systems
2. Self contained breathing apparatuses

D. Procedure index (if different from that supplied in 1.D) for:

1. Use and operation of continuous air monitors
2. Use and operation of temporary air filtration units

3. Respiratory protection

E. Please provide specific procedures related to the following areas. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.

1. Respiratory protection program
2. Use of self contained breathing apparatuses
3. Air quality testing for SCBAs

F. A summary list of corrective action documents (including corporate and subtiered systems) written since November 7, 2010, related to the Airborne Monitoring program including:

1. Continuous air monitors
2. Self contained breathing apparatuses
3. Respiratory protection program

NOTE; The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

G. List of SCBA qualified personnel - reactor operators and emergency response personnel

H. Surveillance records for self contained breathing apparatuses (SCBAs) staged in the plant for use since November 7, 2010.

I. SCBA training and qualification records for control room operators, shift supervisors, STAs, and OSC personnel for the last year.

A selection of personnel may be asked to demonstrate proficiency in donning, doffing, and performance of functionality check for respiratory devices.