



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

August 4, 2010

Mr. Ross T. Ridenoure
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 05000361/2010003 and 05000362/2010003

Dear Mr. Ridenoure:

On June 23, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your San Onofre Nuclear Generating Station, Units 2 and 3 facility. The enclosed integrated inspection report documents the inspection findings, which were discussed on June 30, 2010, with you, and other members of your staff.

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

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

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

Sincerely,

/RA/

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

Docket Nos. 50-361, 50-362

License Nos. NPF-10, NPF-15

Enclosure:

NRC Inspection Report 05000361/2010003 and 05000362/2010003
w/Attachment: Supplemental Information

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See next page

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 50-361, 50-362

License: NPF-10, NPF-15

Report: 05000361/2010003 and 05000362/2010003

Licensee: Southern California Edison Company

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

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

Dates: March 25 through June 23, 2010

Inspectors: I. Anchondo, Reactor Inspector
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Approved By: Ryan E. Lantz
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Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000361/2010003, 05000362/2010003; 03/25/2010 – 06/23/2010; San Onofre Nuclear Generating Station, Units 2 and 3; Integ Resid & Regional Report; Maint. Effect., Maint. Risk & Emerg Work, Op Eval, Ident & Resolution of Problems, Event Followup

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by region-based inspectors. Ten Green noncited violations and one 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." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a noncited violation of 10 CFR 50.65(a)(4) for the failure of operations and planning personnel to appropriately characterize the potential impact of work activities on plant systems and to implement appropriate risk mitigating actions. Specifically, on April 28, 2010, operations personnel failed to identify mussel mitigation in the Unit 2 intake structure as having high nuclear risk in the associated work instruction, resulting in inadequate risk management actions being performed by operations personnel. The licensee's immediate corrective actions included ensuring appropriate actions were taken and adequate communications were in place to mitigate the risk during future mussel mitigation efforts. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 200937859.

The performance deficiency is more than minor because it affected the protection against external factors attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability during power operations, and is therefore a finding. Using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," the finding is determined to have very low safety significance because the performance deficiency involved only inadequate risk management actions and not failure to assess risk, incremental core damage probability resulting from this work activity was less than 1E-6, and the incremental large early release probability was less than 1E-7. This finding has a crosscutting aspect in the area of human performance associated with the component of resources because the licensee failed to ensure that procedures were adequate to support nuclear safety, including complete, accurate, and up-to-date work packages [H.2(c)] (Section 1R13).

- Green. The inspectors identified a noncited violation of Technical Specification 5.1.3 for the failure of licensee management to appropriately define the Control Room Area as depicted in the Licensee Controlled Specifications. Specifically, prior to June 2010, licensee personnel were not specific in the definition of the control room in work instructions and procedures such that, when personnel were directed by procedure to contact the control room, the

expectation of station management in most cases was that workers would instead contact the work process area, which is outside the boundaries of the control room as defined in the Licensee Controlled Specifications and other plant procedures. The licensee initiated Nuclear Notification NN 200972596 to evaluate this issue and identify corrective actions.

The performance deficiency is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern, and is therefore a finding. Specifically, changes to critical plant parameters monitored in the control room may not be appropriately anticipated by control room operators; this may lead to misdiagnosis of plant conditions by control room operators. The finding is associated with the Initiating Events Cornerstone. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because the licensee failed to define and effectively communicate expectations regarding procedural compliance such that personnel follow procedures [H.4(b)] (Section 1R13).

- Green. The inspectors identified a finding for the failure of the licensee to follow its procedures for written instruction use and adherence during a test to determine the impact on main condenser vacuum of a damaged feedwater heater. Specifically, on May 5, 2010, while performing a vacuum test on a sixth point feedwater heater, an operator failed to stop the activity, as required by Procedure SO123-XV-HU-3, "Written Instruction Use and Adherence," Revision 3, when he encountered unclear and conflicting work instructions. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 200909706.

The performance deficiency is more than minor because it affected the human performance attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability during power operations, and is therefore a finding. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because the licensee failed to communicate human error prevention techniques such that work activities were performed safely [H.4(a)] (Section 4OA3).

Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR 50.65(a)(1) and 50.65(a)(2) for the failure of engineering personnel to demonstrate that the performance or condition of the Unit 3 component cooling water system had been effectively controlled through the performance of appropriate preventive maintenance and did not monitor against licensee-established goals. Specifically, as of May 31, 2010, engineering personnel failed to identify and

properly account for at least 47 hours of component cooling water heat exchanger unavailability when considering whether the performance of the Unit 3 component cooling water train A had been effectively controlled through maintenance. These 47 hours of unavailability, when combined with other train unavailability over the previous 12 months, demonstrate that the performance or condition of this structure, system, or component was not being effectively controlled through the performance of appropriate preventive maintenance and, as a result, that goal setting and monitoring was required. Licensee personnel initiated a notification to evaluate how component cooling water train unavailability is counted. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 200961310.

The performance deficiency is more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding: (1) is not a design or qualification deficiency confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of non-technical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of human performance associated with the component of decision making because the engineering personnel failed to demonstrate that nuclear safety was an overriding priority through the use of conservative assumptions in decision making and adopting a requirement to demonstrate that a proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action [H.1(b)] (Section 1R12).

- Green. The inspectors identified a noncited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," involving multiple instances where operations and work planning personnel failed to adequately assess and implement appropriate risk management activities. Specifically, between November 20, 2009, and March 17, 2010, operations and work planning personnel failed to adequately assess and manage the increase in risk for maintenance activities associated with the station's emergency diesel generators. Following the inspectors' identification of the finding, the licensee adequately assessed and managed the increase in risk for maintenance activities associated with emergency diesel generators. This issue was entered into the licensee's corrective action program as Nuclear Notifications NNs 200810952, and 200818599.

The performance deficiency is more than minor because it affected the configuration control attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. The examples of this finding were associated with both at-power and shutdown plant operations. For the examples associated with the at-power operations, using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and

Risk Management Significance Determination Process,” Flowcharts 1 and 2, the finding was determined to have very low safety significance because this finding dealt with the licensee’s failure to implement procedurally required risk management actions and the incremental core damage probability deficit was less than 1E-6. Since the licensee does not maintain a shutdown probabilistic risk analysis model, an incremental core damage probability cannot be estimated for the plant conditions that existed for the examples associated with shutdown operations. For this reason, the inspectors determined that Manual Chapter 0609, Appendix K, “Maintenance Risk Assessment and Risk Management Significance Determination Process,” Flowchart 2, could not be used. Using Manual Chapter 0609, Appendix M, “Significance Determination Process Using Qualitative Criteria,” the finding is determined to have very low safety significance because the finding did not result in any additional loss of defense in depth systems. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because the licensee failed to define and effectively communicate expectations regarding procedural compliance which resulted in a failure to follow procedures by workers [H.4(b)] (Section 1R13).

- Green. A self-revealing noncited violation of Technical Specification 5.5.1.1 was identified for the failure of maintenance and construction services personnel to follow procedures for performing work on safety-related components. Specifically, between November 12, 2009, and March 30, 2010, maintenance personnel failed to implement the requirements of Procedure SO123-MA-1, “Maintenance and Construction Division,” Revision 7, Section 4.14, and Procedure SO123-I-1.7, “Work Order Preparation and Processing,” Revision 36, Section 6.4.10, to ensure that work on safety-related components had an approved work order to direct the activity. On March 31, 2010, the licensee restored drain valves MR042 and MR264 using approved work orders to direct the valve reassembly. This issue was entered into the licensee’s corrective action program as Nuclear Notification NN 200856112.

This performance deficiency is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern, and is therefore a finding. Specifically, the continued failure of the licensee to follow authorized work orders when performing work on safety-related components could impact structure, system, or component operability. The finding is associated with the Mitigating Systems Cornerstone. Manual Chapter 0609, Appendix M, “Significance Determination Process Using Qualitative Criteria,” was used since Manual Chapter 0609, Appendix G, “Shutdown Operations Significance Determination Process,” does not specifically address the particular condition of hot shutdown (Mode 4), in which time to boil is greater than 2 hours. The NRC management review was performed using the Manual Chapter 0609, Appendix G, Attachment 1, Phase 1 guidance, to establish a bounding analysis. Using the bounding analysis, the finding is determined to have very low safety significance because the finding did not represent a loss of any shutdown safety functions. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because the licensee failed to define and effectively communicate expectations regarding procedure compliance for work on safety-related equipment such that personnel follow work order procedures [H.4(b)] (Section 1R15).

- Green. The inspectors identified a noncited violation of 10 CFR Part 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of operations and engineering personnel to follow station procedures to determine the operability of a degraded structure, system, or component. Specifically, on May 19, 2010, the operability determination performed to determine the operability of degraded safety-related concrete in the Unit 3 intake structure was not accomplished in accordance with Procedure SO123-XV-52, "Functionality Assessments and Operability Determinations," Revision 17. After the inadequate operability determination was identified by the inspectors, operations and engineering personnel re-evaluated the conditions. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 200957926.

The performance deficiency is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern, and is therefore a finding. Specifically, the continued failure of operations personnel to perform adequate operability determinations could result in an inoperable structure, system, or component not being recognized and addressed in a timely manner. The finding is associated with the Mitigating Systems Cornerstone. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of non-technical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of human performance associated with the component of decision making because the licensee failed to demonstrate that nuclear safety was an overriding priority through the use of conservative assumptions in decision making and adopting a requirement to demonstrate that a proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action [H.1(b)] (Section 1R15).

- Green. The inspectors identified a noncited violation of Technical Specification 5.5.1.1 for the failure of operations personnel to follow Procedure SO123-0-A1, "Conduct of Operations," Revision 27, to appropriately control operator aids. Specifically, between March 30 and May 18, 2010, the inspectors identified several operator aids that were not controlled per the requirements of Procedure SO123-0-A1, Section 6.10, "Operator Aids." Operations personnel implemented the controls required by Procedure SO123-0-A1 for the operator aids identified by the inspectors, and performed an extent of condition review to identify and correct additional operator aids. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 200856079.

The performance deficiency is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, 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: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the component of corrective action program because operations personnel failed to implement a corrective action program with a low threshold for identifying issues [P.1(a)] (Section 4OA2).

- Green. A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Actions,” was identified for the licensee’s failure to determine the cause and take corrective actions to preclude repetition of a significant condition adverse to quality associated with repeated leakage of safety-related piping. Specifically, from 1985 through June 2008, the licensee failed to determine the cause of the numerous failures of the Schedule 10S piping and did not take corrective actions to preclude repetition of additional piping leaks. In January 2010, the licensee initiated a root cause evaluation and developed an extensive inspection and repair plan. This issue was entered into the licensee’s corrective action program as Nuclear Notification NN 200753741.

The performance deficiency is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Since the most recent opportunity to identify and correct this condition was in June 2008, and the licensee has instituted numerous corrective actions to address this issue, the inspectors determined that this was not reflective of current performance and therefore did not have a crosscutting aspect associated with it (Section 4OA2).

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure of engineering personnel to fully evaluate a degraded condition in accordance with its corrective action program procedures. Specifically, on March 20, 2010, after identifying that there was not a reasonable expectation that a degraded safety-related battery was operable, operations and engineering personnel failed to initiate a nuclear notification in accordance with corrective action procedures. In response to the inspectors’ question, the licensee initiated Nuclear Notification NN 200973110 to perform appropriate evaluations of the degraded battery cell. This issue was entered into the licensee’s corrective action program as Nuclear Notification NN 200973110.

The performance deficiency is more than minor because it is associated with the equipment reliability attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of non-technical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because licensee management failed to define and effectively communicate expectations regarding procedural compliance such that personnel follow procedures [H.4(b)] (Section 4OA3).

- Green. A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion VII, "Control of Purchased Material, Equipment, and Services," was identified for the failure of engineering personnel to assure that 4 kV vacuum circuit breakers supplied by NLI/Square D conformed to the procurement documents prior to installation in Unit 2 bus 2A06 train B. Specifically, on December 18, 2009, 4 kV bus 2A06 was restored to operable status following installation of 4 kV vacuum circuit breakers supplied by NLI/Square D that did not conform to the design requirements specified in the procurement documents. Engineering personnel failed to assure that 4 kV vacuum circuit breakers conformed to the requirements of Specification SO23-302-02A, "4kV Roll-in Replacement Circuit Breakers," Revision 1, and failed to identify that the vendor completed seismic qualification test deviated from the procurement specifications prior to installation in the plant. On March 18, 2010, an unexpected trip of component cooling water pump circuit breaker 2A0605 prompted an investigation that identified the design inadequacies. Operations personnel declared the associated circuit breakers inoperable following identification of the design inadequacies. Immediate actions to eliminate the design inadequacies were completed to return 4 kV bus 2A06 to operable on March 25, 2010. Apparent Cause Evaluation ACE 200845084 was initiated to identify additional corrective actions. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 200842716.

The performance deficiency is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using the Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," Phase 1 guidance, the finding is determined to have very low safety significance because the finding did not result in an increase in the likelihood of a loss of reactor coolant system inventory, degrade the ability to add reactor coolant system inventory, or degrade the ability to recover decay heat removal. Since the lack of questioning attitude that contributed to an overreliance on the specifications occurred in 2005, and Procurement Specification Training was conducted in 2008 to close an identified

gap in specification review and implementation, the inspectors determined that this was not reflective of current performance and therefore did not have a crosscutting aspect associated with it (Section 4OA3).

B. Licensee-Identified Violations

A Severity Level IV violation was identified by the licensee and has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and associated corrective action tracking numbers are listed in Section 4OA7.

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period shutdown for a scheduled refueling outage (U2C16) and steam generator replacement, which was completed on April 11, 2010. The unit returned to full power on April 17, 2010. On April 28, 2010, the unit reduced power to 85 percent as a result of a maintenance activity involving debris mitigation of the intake structure that resulted in an unexpected heavy influx of mussel shells into the unit main condenser. After cleaning of the main condenser was completed, the unit returned to full power on May 5, 2010, and remained there for the duration of the inspection period.

Unit 3 began the inspection period at 50 percent power for fuel conservation and returned to essentially full power on May 1, 2010, and remained there for the duration of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Summer Readiness for Offsite and Alternate-ac Power

a. Inspection Scope

The inspectors performed a review of the licensee's preparations for summer weather for selected systems, including conditions that could lead to loss-of-offsite power and conditions that could result from high temperatures. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator and the plant to verify that the appropriate information was being exchanged when issues arose that could affect the offsite power system. Examples of aspects considered in the inspectors' review included:

- The coordination between the transmission system operator and the plant during off-normal or emergency events
- The explanations for the events
- The estimates of when the offsite power system would be returned to a normal state
- The notifications from the transmission system operator to the plant when the offsite power system was returned to normal

During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also

reviewed corrective action program items to verify that the licensee was 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:

- June 7, 2010, Units 2 and 3, offsite and onsite ac power systems

These activities constitute completion of one readiness for summer weather affect on offsite and alternate ac power 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

The inspectors performed a detailed review of the licensee's procedures and preparations for operating the facility during an extended period when ambient outside temperature was high and the ultimate heat sink was experiencing elevated temperatures, seasonal tide extremes, and seasonal influx of sea grass and other marine life. The inspectors focused on plant-specific design features and implementation of the procedures for responding to or mitigating the effects of these conditions on the operation of the facility's saltwater cooling and component cooling water systems. Inspection activities included a review of the licensee's adverse weather procedures, daily monitoring of the off-normal environmental conditions, and that operator actions specified by plant-specific procedures were appropriate to ensure operability of the facility's normal and emergency cooling systems. 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)

Partial Walkdowns

a. Inspection Scope

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

- April 20, 2010, Unit 2, component cooling water system train A
- May 4, 2010, Unit 2, emergency diesel generator train B
- May 18, 2010, Unit 3, emergency diesel generator train A following an extended maintenance outage

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

These activities constitute completion of three partial system walkdown samples as defined by 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:

- April 3, 2010, Unit 2, containment building
- April 29, 2010, Unit 2, emergency diesel generator building
- April 29, 2010, Unit 3, emergency diesel generator building
- May 5, 2010, Units 2 and 3, auxiliary control building, 9 foot and 50 foot elevations
- May 13, 2010, Units 2 and 3, auxiliary control building, 30 foot elevation
- May 20, 2010, Units 2 and 3, auxiliary control building, 70 foot and 85 foot elevations

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained

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

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

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, the flooding analysis, and plant procedures to assess cables located in underground bunkers and manholes; reviewed the Updated Final Safety Analysis Report and 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; verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and walked down the three 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.

- March 31, 2010, Unit 3, emergency diesel generator cable tunnel underground vault flood detection repairs
- May 3, 2010, Unit 3, cable tunnel inspection, 9 foot elevation
- May 12, 2009, Unit 3, electrical manhole A 318 vault inspection

These activities constitute completion of one annual flood protection measure inspection sample of cables located in underground bunkers and manholes as defined by 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 by Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On May 24, 2010, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

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

These activities constitute completion of one quarterly licensed operator requalification program sample as defined in 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:

- May 4-6, 2010, Units 2 and 3, reactor protection system including excore nuclear instrumentation
- May 25-26, 2010, Unit 3, component cooling water system trains A and B

The inspectors reviewed events caused by ineffective equipment maintenance that 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 two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

Introduction. The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(1) and 50.65(a)(2) for the failure of engineering personnel to appropriately consider all unavailability time for the saltwater cooling/component cooling water heat exchangers when determining whether their performance was being effectively controlled through preventative maintenance.

Description. On May 18, 2010, the licensee removed the Unit 3 train A component cooling water heat exchanger 3ME001 from service to repair tube leaks. The heat exchanger was returned to service on May 20, 2010. The inspectors noted that while this heat exchanger was included in the maintenance rule functional scope for both saltwater cooling train A and component cooling water train A, the licensee only counted unavailability time against the saltwater cooling train; the component cooling water train was credited as being available during the repairs.

The inspectors reviewed the operator logs and noted that heat exchanger 3ME001 had been removed from service for tube plugging on two other occasions between May 2009 and April 2010. On the first of these occasions, on June 7-8, 2009, the associated component cooling water train had been counted as unavailable in the licensee's maintenance rule program. For the second maintenance period, on March 23-24, 2010, no maintenance unavailability time had been counted. The inspectors determined that if the March and May 2010 maintenance periods had been counted as unavailability time for component cooling water train A, the total maintenance unavailability time would have exceeded the 1.3 percent unavailability limit set by the licensee and would have required evaluation for goal-setting.

When questioned by the inspectors, engineering personnel explained that because only the saltwater side of the heat exchanger was drained, the component cooling water system remained able to perform its maintenance rule function and was therefore available. The inspectors noted that this was contrary to guidance contained in NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2. Specifically, the NUMARC 93-01 definition of unavailability for purposes of availability or reliability calculation states, "An SSC (structure, system, or component) that is required to be available for automatic operation must be available and respond without human action." In the licensee's maintenance rule scoping documents, maintenance rule function MR-CCW-01 is defined as "Remove component and decay heat via Train A for reactor auxiliaries and components modeled in the PRA during accident conditions, normal power generation, startup, cooldown, and shutdown to the ultimate heat sink." Based on these definitions, the inspectors determined that the heat exchanger was unavailable for maintenance rule purposes because (1) draining the saltwater side of the component cooling water heat exchanger prevented the component cooling water train from communicating with the ultimate heat sink and (2) human action would be required to fill the saltwater side of the component cooling water heat exchanger in order to allow the heat exchanger to perform its function to "remove component and decay heat . . . to the ultimate heat sink."

The inspectors determined that as of May 31, 2010, engineering personnel failed to demonstrate that the performance or condition of the Unit 3 component cooling water system had been effectively controlled through the performance of appropriate preventive maintenance and did not monitor against licensee-established goals. Specifically, engineering personnel failed to identify and properly account for at least 47 hours of component cooling water heat exchanger unavailability when considering whether the performance of the Unit 3 component cooling water train A had been effectively controlled through maintenance. These 47 hours of unavailability, when combined with other train unavailability over the previous 12 months, demonstrated that the performance or condition of this structure, system, or component was not being effectively controlled through the performance of appropriate preventive maintenance and, as a result, that goal setting and monitoring was required.

Analysis. The failure of the licensee to consider heat exchanger unavailability time when evaluating maintenance effectiveness of the component cooling water system was a performance deficiency. The performance deficiency is more than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because the finding: (1) is not a design or qualification deficiency confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of non-technical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of human performance associated with the component of decision making because the engineering personnel failed to demonstrate that nuclear safety was an overriding priority through the use of conservative assumptions in decision making and adopting a requirement to demonstrate that a proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action [H.1(b)].

Enforcement. Title 10 CFR 50.65(a)(1) requires, in part, that the holders of an operating license shall monitor the performance or condition of structures, systems, or components within the scope of the rule as defined by 10 CFR 50.65(b) against licensee-established goals in a manner sufficient to provide reasonable assurance that such structures, systems, and components are capable of fulfilling their intended functions. Title 10 CFR 50.65(a)(2) requires, in part, that monitoring as specified in 10 CFR 50.65(a)(1) is not required where it has been demonstrated that the performance or condition of a structure, system, or component is being effectively controlled through the performance of appropriate preventive maintenance, such that the structure, system, or component remains capable of performing its intended function. Contrary to the above, as of May 31, 2010, engineering personnel failed to demonstrate that the performance or condition of the Unit 3 component cooling water system had been effectively controlled through the performance of appropriate preventive maintenance and did not monitor against licensee-established goals. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NN 200961310, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement

Policy: NCV 05000362/2010003-01, "Unavailability Time for Component Cooling Water Incorrectly Counted."

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

a. Inspection Scope

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

- March 25, 2010, Units 2 and 3, crediting the use of beyond licensing bases actions as risk management actions
- April 4-5, 2010, Unit 2, pressurizer auxiliary valve 2HV9201 rework
- April 13 through May 13, 2010, Unit 2, fourth and sixth point feedwater heater leak repairs
- April 16, 2010, Unit 3, loss of control element drive mechanism cooling fans 3ME403 and 3ME404
- April 20, 2010, Unit 2, emergency diesel generator planned maintenance outage
- April 28, 2010, Unit 2, remediation of biofouling in the Unit 2 intake structure

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 six maintenance risk assessments and emergent work control inspection samples as defined by Inspection Procedure 71111.13-05.

b. Findings

(1) Use of Beyond Licensing Bases Actions

Introduction. The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," involving multiple instances where operations and work planning personnel failed to adequately assess and implement appropriate risk management activities.

Description. While reviewing the licensee's probabilistic risk assessment model, the inspectors noted that when an emergency diesel generator was taken out of service, the model would credit the ability to cross-tie the output of the opposite unit's same train emergency diesel generator to the affected unit to lower the overall projected risk profile for the unit that had the emergency diesel generator out of service. The inspectors questioned the risk assessments that had been performed using this assumption relative to the risk management actions that had been implemented as a result of the assessments. Specifically, the inspectors questioned whether the opposite unit's same train emergency diesel generator would become a more risk significant piece of equipment than was recognized by the licensee; and if crediting the diesel cross-tie capability for maintenance windows in the outage defense in depth strategy without assessing the potential risk impact to the operating unit was appropriate.

The inspectors engaged the licensee about their practice of crediting the unaffected unit's emergency diesel generator during maintenance, and how they had evaluated the potential elevation of risk importance while it was being credited for both units. During these discussions the inspectors were informed that the licensee based their risk management actions on the projected change in risk predicted by the sites probabilistic risk assessment model. Since the output of the probabilistic risk assessment was in the acceptable band, the licensee had not been implementing any other risk management actions, other than the risk assessment, to protect the unaffected unit's emergency diesel generator. The licensee initiated Nuclear Notification NN 200810952 to capture this concern. The inspectors also questioned the practice of crediting of the cross-tie in the shutdown unit's defense in depth strategy without evaluating the potential risk introduced to the operating unit. The licensee initiated Nuclear Notification NN 200818599 to capture this concern.

As the inspectors continued to review this issue, they noted that Procedure SO23-2-13, "Diesel Generator Operation," Revision 42, Section 6.3.1 stated, "If the planned Diesel work window is >72 hours, then implement the restrictions of Section 6.3.4." Step 6.3.4.11 directed that, among other equipment, the opposite unit's same train emergency diesel generator be treated as protected equipment to minimize the possibility of challenging probabilistic risk assessment allowed outage time credit provided by the 4 kV cross-tie feature. The inspectors determined that the licensee had been entering Technical Specification 3.8.1(b), 14 day allowed outage time, for all emergency diesel generator maintenance activities which made a diesel inoperable. Through further review, the inspectors determined that between November 20 and December 20, 2009, there were three instances where the licensee had an emergency diesel generator out of service for maintenance for greater than 72 hours without implementing the risk management actions required by procedures.

Subsequently, the inspectors noted that while evaluating Nuclear Notification NN 200818599, the licensee had determined that the crediting of the cross-tie in the shutdown unit's defense in depth strategy would impact the operating unit's risk, and therefore risk assessments for the operating unit needed to be performed for this configuration. The inspectors determined that between November 20, 2009, and March 17, 2010, the licensee had failed to perform adequate risk assessments for the operating unit, and the requirements of Procedure SO23-2-13, Section 6.3, had not been implemented with respect to implementing required risk management actions for emergency diesel generator work that was expected to last longer than 72 hours.

Analysis. The failure to perform an adequate risk assessment and implement appropriate risk management actions was a performance deficiency. The performance deficiency is more than minor because it affected the configuration control attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. The examples of this finding were associated with both at-power and shutdown plant operations. For the examples associated with the at-power operations, using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowcharts 1 and 2, the finding was determined to have very low safety significance (Green) because this finding dealt with the licensee's failure to implement procedurally required risk management actions and the incremental core damage probability deficit was less than 1E-6. Since the licensee does not maintain a shutdown probabilistic risk analysis model, an incremental core damage probability cannot be estimated for the plant conditions that existed for the examples associated with shutdown operations. For this reason, the inspectors determined that Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 2, could not be used. Using Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," the finding is determined to have very low safety significance (Green) because the finding did not result in any additional loss of defense in depth systems. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because the licensee failed to define and effectively communicate expectations regarding procedural compliance which resulted in a failure to follow procedure by workers [H.4(b)].

Enforcement. Title 10 CFR 50.65(a)(4), states in part, that before performing maintenance activities (including but not limited to surveillance, postmaintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, between November 20, 2009, and March 17, 2010, operations and work planning personnel failed to adequately assess and manage the increase in risk for maintenance activities associated with the station's emergency diesel generators. Following the inspectors' identification of the finding, the licensee adequately assessed and managed the increase in risk for maintenance activities associated with emergency diesel generators. Because this finding was of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notifications NNs 200810952 and 200818599, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361; 05000362/2010003-02, "Failure to Assess and Manage Risk for Maintenance on Emergency Diesel Generators."

(2) Biofouling Remediation in Intake Structure

Introduction. The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(4) for the failure of operations and planning personnel to appropriately characterize the potential impact of work activities on plant systems and to implement appropriate risk mitigating actions.

Description. On April 28, 2010, a Unit 2 control room operator noted an unexpected increase in differential pressure across one of the main condenser waterboxes. Upon

investigation, the operator determined that the increase was due to fouling of condenser tubes as a result of mussel mitigation activities which were in progress in the Unit 2 intake structure. The inspectors noted that the work instructions controlling these mitigation activities classified the work as medium nuclear risk while the risk assessment performed by the work week manager classified the activity as high nuclear risk. This conflicting risk information resulted in control room operators not being aware that a high-risk activity was in progress. Therefore, the control room operators were unable to take effective risk mitigation actions during the high-risk activity.

Further, a note in the work instruction controlling the mitigation activities stated "Operations will be present and in radio contact with the control room to monitor the delta-P in waterboxes 2WB116/2WB117." An NRC inspector in the control room observed that at the time the increased differential pressure was noted, the control room was not in contact with workers performing the mitigation. Additionally, the licensee later determined that there was no equipment operator present at the Unit 2 intake structure where the mitigation was being performed. Through interviews with work planners, the inspectors determined that the note in the work instruction requiring communication with the control room had been added as a risk-mitigating action. The failure of workers to follow the work instruction as written resulted in inadequate risk mitigation actions being taken during a high-risk activity.

This finding is applicable to both units because the work was performed in the Unit 2 intake structure, which contains both Unit 2 and Unit 3 saltwater cooling pumps.

Analysis. The failure of the licensee to assess and manage risk associated with maintenance activities was a performance deficiency. The performance deficiency is more than minor because it affected the protection against external factors attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability during power operations, and is therefore a finding. Using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," the finding is determined to have very low safety significance (Green) because the performance deficiency involved only inadequate risk management actions and not failure to assess risk, incremental core damage probability resulting from this work activity was less than 1E-6, and the incremental large early release probability was less than 1E-7. This finding has a crosscutting aspect in the area of human performance associated with the component of resources because the licensee failed to ensure that procedures were adequate to support nuclear safety, including complete, accurate, and up-to-date work packages [H.2(c)].

Enforcement. Title 10 CFR 50.65(a)(4) requires, in part, that before performing maintenance activities, licensees assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, on April 26, 2010, operations personnel failed to assess and manage the increase in risk that resulted from proposed maintenance activities. Specifically, operations personnel failed to identify mussel mitigation in the Unit 2 intake structure as having high nuclear risk in the associated work instruction, resulting in inadequate risk management actions being performed by operations personnel. The licensee's immediate corrective actions included ensuring appropriate actions were taken and adequate communications were in place to mitigate the risk during future mussel mitigation efforts. Because this violation is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NN 200937859, this violation is being treated as a

noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361; 05000362/2010003-03, "Improper Risk Assessment and Management for Work Activities."

(3) Control Room Definition Inconsistencies

Introduction. The inspectors identified a Green noncited violation of Technical Specification 5.1.3 for the failure of licensee management to appropriately define the control room. Specifically, the term "control room" is used in plant procedures and instructions to mean both the work process area (or "51 Desk") and the "Control Room" as defined by operations procedures and technical specifications.

Description. On April 28, 2010, control room operators noted an increasing differential pressure across one of the Unit 2 main condenser water boxes. Upon investigation, operations personnel discovered that this changing indication was due to tube plugging which occurred as a result of intake bay inspection and mussel mitigation in the Unit 2 intake structure. An inspector, who was present in the control room observing control room activities, questioned why the reactor operator was unaware of work in progress which had the potential to impact control room indications. The inspectors reviewed the work instructions under which the mussel mitigation was performed (Maintenance Order MO 800339516) and noted that this maintenance order contained a note in the "Mitigation of Debris" section stating "Operations will be present and in radio contact with the control room to monitor the delta-P in waterboxes 2WB116/2WB117." The inspector in the control room noted that no control room personnel were in contact with the workers performing the mitigation work, as required by the work instruction. When questioned, licensee personnel told the inspectors that this requirement was satisfied because personnel in the field were in contact with the "51 Desk" and that the "51 Desk" was part of the control room. The licensee later determined that operations personnel were not present at the Unit 2 intake structure where the mitigation was being performed.

Technical Specification 5.1.3 addresses the command and control functions of the licensed operators standing watch in the control room. This specification states that "the confines of the control room shall be defined as depicted in the Licensee Controlled Specifications." Figure 5.0.100-1 of the Licensee Controlled Specifications clearly defined the control room as the area containing the control boards, the Shift Manager's Office, and the Operations Support Office; the work process area ("51 Desk") was not included.

Procedure SO123-0-A1, "Conduct of Operations," Revision 27, stated "The term 'Control Room' is the area within the Control Room Boundary as defined by areas A, B, and C of Attachment 1. The term 'Control Room Area' is also depicted in Attachment 1." Attachment 1, "Control Room Area Definitions," showed areas A, B, and C to encompass the areas immediately surrounding the Unit 2 and Unit 3 control boards and the common area in between. This same attachment defined the "Control Room Area" as that area defined in Figure 5.0.100-1 of the Licensee Controlled Specifications.

Based on these definitions, the inspectors questioned the licensee's assertion that the "51 Desk" was part of the control room. Operations personnel at various organizational levels, including upper management, indicated that the "51 Desk" was part of the control room for the purposes of communications from the field; that maintenance workers and plant equipment operators "understood" that when their work instructions directed them

to contact the control room, that the expectation of station management was that they instead contact the "51 Desk."

The inspectors determined that this management expectation was contrary to the technical specification requirements to ensure that command and control of plant operations was maintained in the control room. The inspectors acknowledged that on many occasions, it may be appropriate for workers in the field to contact the work control area to coordinate work, such that control room operators are not distracted from their duties. However, the inspectors determined that the licensee's failure to clearly differentiate the work process area from the "Control Room," as defined by technical specifications and plant procedure, could lead to control room operators not being informed during work steps which could cause changes in critical plant parameters. Control room operators being unaware of anticipated changes in alarms and indications could lead to a misdiagnosis of actual plant conditions, resulting in inappropriate actions.

Analysis. The failure to provide appropriate procedural guidance to ensure that workers in the field knew when it was appropriate to contact control room operators and when it was appropriate to contact the work process control operator was a performance deficiency. The performance deficiency is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern, and is therefore a finding. Specifically, changes to critical plant parameters monitored in the control room may not be appropriately anticipated by control room operators; this may lead to misdiagnosis of plant conditions by control room operators. The finding is associated with the Initiating Events Cornerstone. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because the licensee failed to define and effectively communicate expectations regarding procedural compliance such that personnel follow procedures [H.4(b)].

Enforcement. Technical Specification 5.1.3 requires, in part, that the confines of the Control Room Area shall be defined as depicted in the Licensee Controlled Specifications. Contrary to the above, prior to June 2010, licensee management failed to define the Control Room Area as depicted in the Licensee Controlled Specifications. Specifically, licensee personnel were not specific in the definition of the control room in work instructions and procedures such that, when personnel were directed by procedure to contact the control room, the expectation of station management in most cases was that workers would instead contact the work process area, which is outside the boundaries of the control room as defined in the Licensee Controlled Specifications and other plant procedures. The licensee initiated Nuclear Notification NN 200972596 to evaluate this issue and identify corrective actions. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NN 200972596, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361; 05000362/2010003-04, "Failure to Define the Control Room as Required by Technical Specifications."

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- March 31, 2010, Unit 2, penetration drain leaking with isolation valves missing hand wheels and packing studs removed
- April 15, 2010, Unit 2, safety injection tank nitrogen supply valve spring installed incorrectly
- April 27, 2010, Unit 2, seismic interaction with valve tubing on auxiliary feedwater discharge valve
- May 3, 2010, Unit 3, component cooling water heat exchanger trains A and B tube leaks
- May 12-13, 2010, Unit 2, saltwater cooling common header with white substance found on piping support
- May 12-14, 2010, Units 2 and 3, design basis accident evaluation of epoxy coating relative to emergency containment sump
- May 19, 2010, Units 2 and 3, concrete cracking in Unit 3 intake structure
- June 3-16, 2010, Unit 2, multiple failures of reactor trip circuit breakers
- June 9, 2010, Unit 2, plant protection system channel D bistable for high steam generator differential pressure intermittent failure
- June 11, 2010, Unit 2, emergency diesel generator train B, pinhole leak in the elbow weld supplying the immersion heater coolant line to the lube oil cooler

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and Updated Safety Analysis Report to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. 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 ten operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

(1) Valves Partially Disassembled

Introduction. A self-revealing Green noncited violation of Technical Specification 5.5.1.1 was identified for the failure of maintenance and construction services personnel to follow procedures for performing work on safety-related components.

Description. During the Unit 2 refueling outage between November 12, 2009, and March 30, 2010, Unit 2 low pressure safety injection loop 2B drain isolation valves, MR042 and MR264, were partially disassembled without authorization or an approved work order. The inspectors questioned if tampering with the valves was suspected since this condition was found in a remote area of containment. The licensee determined there was no evidence that other components had been disassembled or of other unauthorized activities in containment. This condition was discovered after the plant had entered Mode 4 from Mode 5, when personnel noted water leaking from a crack in the piping weld downstream of the drain isolation valves.

The inspectors reviewed the licensee's prompt investigation of the event documented in Nuclear Notification NN 200856112, and Procedures SO123-MA-1, "Maintenance and Construction Division," Revision 7, and SO123-I-1.7, "Work Order Preparation and Processing," Revision 36. During this review the inspectors noted Procedure SO123-MA-1, Section 4.14, stated, in part, "Work orders are required for all work activities," and Procedure SO123-I-1.7, Section 6.4.10, required detailed work plans to ensure that tasks were completed to the required quality. As such, the inspectors determined that the partial disassembly of the drain valves was an activity in which the relevant maintenance procedures had not been properly followed.

Apparent Cause Evaluation ACE 200887763 determined the cause as "inadequate procedure use by an unknown worker." The evaluation also determined that, on November 12, 2009, maintenance personnel completed replacement of a check valve on the loop 2B low pressure safety injection line, and the system, including the drain valves, had been restored to operable prior to the plant entry into Mode 4.

Analysis. The failure to follow procedures for performing work on safety-related components was a performance deficiency. This performance deficiency is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern, and is therefore a finding. Specifically, the continued failure of the licensee to follow authorized work orders when performing work on safety-related components could impact structure, system, or component operability. The finding is associated with the Mitigating Systems Cornerstone. Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," was used since Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," does not specifically address the particular condition of hot shutdown (Mode 4), in which time to boil is greater than 2 hours. The NRC management review was performed using the Manual Chapter 0609, Appendix G, Attachment 1, Phase 1 guidance, to establish a bounding analysis. Using the bounding analysis, the finding is determined to have very low safety significance (Green) because the finding did not represent a loss of any shutdown safety functions. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because the licensee failed to define and effectively communicate

expectations regarding procedure compliance for work on safety-related equipment such that personnel follow work order procedures [H.4(b)].

Enforcement. Technical Specification 5.5.1.1 requires, in part, that procedures be established, implemented, and maintained covering the activities specified in Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," of Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operations)," Dated February 1978. Appendix A, Item 9.c, requires that procedures for the repair or replacement of equipment be prepared prior to beginning work. Procedure SO123-MA-1, "Maintenance and Construction Division," Revision 7, and Procedure SO123-I-1.7, "Work Order Preparation and Processing," Revision 36, required work orders for all work activities on safety-related equipment. Contrary to the above, between November 12, 2009 and March 30, 2010, maintenance personnel failed to implement the requirements of Procedure SO123-MA-1, Section 4.14, and Procedure SO123-I-1.7, Section 6.4.10. Specifically, maintenance personnel failed to ensure that work on safety-related components had an approved work order to direct the activity. On March 31, 2010, the licensee restored drain valves MR042 and MR264 using approved work orders to direct the valve reassembly. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NN 200856112, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361/2010003-05, "Failure to Follow Work Control Procedures."

(2) Evaluation of Concrete Cracking

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of operations and engineering personnel to follow station procedures to determine the operability of a degraded structure, system, or component. Specifically, after identifying cracking in safety-related concrete in the Unit 3 intake structure, operations and engineering personnel performed an operability determination which did not evaluate the most severe concrete crack which had been identified.

Description. On May 18 and 19, 2010, the licensee initiated four nuclear notifications to evaluate concrete cracking in the Unit 3 saltwater cooling pump room:

- Nuclear Notification NN 200927625 identified that concrete supporting the grating above saltwater cooling pump 2P307 was damaged and the concrete and/or grating could potentially fall onto pipes or personnel,
- Nuclear Notification NN 200929687 identified four areas of concrete spalling on the north wall of the room,
- Nuclear Notification NN 200929692 identified cracked concrete surrounding an opening in the floor above saltwater cooling pump 2P307, and
- Nuclear Notification NN 200929757 identified damaged concrete supporting the grating above saltwater cooling pump 2P114.

The inspectors reviewed these nuclear notifications and noted that Nuclear Notification NN 200929757, which described the most severe cracking, referred to Nuclear

Notification NN 200927625 for the initial and prompt operability determinations. However, because the cracking identified in Nuclear Notification NN 200927625 was significantly less severe than that identified in Nuclear Notification NN 200929757, the inspectors noted that the operability determination for Nuclear Notification NN 200927625 did not bound the cracking identified in Nuclear Notification NN 200929757.

After the inspectors questioned the adequacy of the licensee's operability determinations, on May 20, 2010, engineering personnel added a discussion to the body of Nuclear Notification NN 200929757 addressing the severity of the cracking and the functionality of the concrete structure and saltwater cooling pump 2P114. However, contrary to Procedure SO123-XV-52, "Functionality Assessments and Operability Determinations," Revision 17, these evaluations were not contained in separate "IOD" or "POD" tasks. Additionally, the inspectors noted that the evaluation was inadequate in that it did not address the most severe cracking. The inspectors further noted that the cracks were up to 3 mm in width. Based on criteria in Calculation S-02-C-001, "Maintenance Rule Concrete Crack Inspection and Evaluation," cracking of this size is unexpected and required repair. The inspectors brought this to the attention of the Shift Technical Advisor.

On May 21, 2010, engineering reevaluated the cracking under a new "POD" task generated under Nuclear Notification NN 200929757. Engineering personnel correctly identified the size and severity of the cracking. Engineering personnel further identified that this cracking had been previously identified during maintenance rule concrete inspections in November 2006 and December 2007, and that the condition had degraded since that time. Engineering personnel appropriately noted that the severity of the cracking now met repair criteria from Calculation S-02-C-001 and initiated an extent of condition evaluation.

On June 8, 2010, the licensee initiated Nuclear Notification NN 200957926 to evaluate why the operability process was not followed and why a nuclear notification was not written after the issue was identified by the inspectors on May 20 and 21, 2010.

This finding is applicable to both units because the cracking was in the Unit 3 intake structure above a Unit 2 safety-related saltwater cooling pump.

Analysis. The failure of the operations and engineering personnel to adequately evaluate the operability of a safety-related structure, system, or component was a performance deficiency. The performance deficiency is more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern, and is therefore a finding. Specifically, the continued failure of operations personnel to perform adequate operability determinations could result in an inoperable structure, system, or component not being recognized and addressed in a timely manner. The finding is associated with the Mitigating Systems Cornerstone. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of non-technical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the

area of human performance associated with the component of decision making because the licensee failed to demonstrate that nuclear safety was an overriding priority through the use of conservative assumptions in decision making and adopting a requirement to demonstrate that a proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action [H.1(b)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and be accomplished in accordance with these instructions, procedures, or drawings. Procedure SO123-XV-52, "Functionality Assessments and Operability Determinations," Revision 17, provided guidelines and instructions for evaluating the operability of safety-related structures, systems, or components, when degraded conditions were identified. Contrary to the above, on May 19, 2010, operations and engineering personnel failed to accomplish an activity affecting quality in accordance with the prescribed instructions, procedures, and drawings. Specifically, the operability determination performed to determine the operability of degraded safety-related concrete in the Unit 3 intake structure was not accomplished in accordance with Procedure SO123-XV-52. After the inadequate operability determination was identified by the inspectors, operations and engineering personnel re-evaluated the conditions. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NN 200957926, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361; 05000362/2010003-06, "Inadequate Operability Determination for Safety-Related Concrete Cracks."

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 identified as Engineering Change Package 800299376, "Auxiliary Feedwater Building Trench Sump Pump."

The inspectors reviewed the temporary modification and the associated safety-evaluation screening against the system design bases documentation, including the Updated Final Safety Analysis Report 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. Specific documents reviewed during this inspection are listed in the attachment.

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:

- April 2, 2010, Unit 2, auxiliary feedwater pump P140
- April 21, 2010, Unit 2, component cooling water heat exchanger train B postmaintenance testing following tube repair
- April 24-25, 2010, Unit 2, emergency diesel generator loaded run postmaintenance testing following modifications
- May 14, 2010, Unit 2, auxiliary feedwater turbine-driven pump 2P140 output card replacement due to manufacturing defect
- June 8, 2010, Unit 2, feedwater isolation valve HV4051 troubleshooting and testing

Five samples that were charged to this report were documented in NRC Inspection Report 05000361/2010008.

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:

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

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

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

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors completed a review of the outage related activities for the Unit 2 refueling outage (U2C16) and steam generator replacement. The outage was completed on April 11, 2010. The inspectors performed the review to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the refueling outage, the inspectors monitored licensee controls over the outage activities listed below. Portions of this inspection that were charged to this inspection report were documented in NRC Inspection Report 05000361/2010008.

- Configuration management, including maintenance of defense-in-depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service
- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error.
- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met, and controls over switchyard activities
- Monitoring of decay heat removal processes, systems, and components
- Verification that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system
- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss
- Controls over activities that could affect reactivity
- Maintenance of secondary containment as required by the technical specifications
- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing
- Licensee identification and resolution of problems related to refueling outage activities

Specific documents reviewed during this inspection are listed in the attachment

These activities constitute completion of one refueling outage and other outage inspection sample as defined in Inspection Procedure 71111.20-05. Partial completion of these activities was documented in Section 1R20 of NRC Inspection Reports 05000361; 05000362/2009005 and 05000361; 05000362/2010002.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, procedure requirements, and technical specifications to ensure that the two 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.

- April 13-14, 2010, Unit 2, safety injection charged piping monthly venting surveillance
- May 21, 2010, Unit 3, saltwater cooling pump P112 surveillance testing following impeller lift

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors performed an in-office review of emergency plan implementing Procedure SO123-VIII-1, "Recognition and Classification of Emergencies," Revision 30, submitted April 21, 2010. This revision:

- Added two security conditions to emergency action level F1.1(c) and to Attachment 4, "Index D, Security Event Cross Reference"
- Added two security conditions to emergency action level F3.1(a) and to Attachment 4, "Index D, Security Event Cross Reference"
- Renumbered the list of security conditions in emergency action levels F.1(a) and F.1(c)
- Made minor editorial corrections

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

These activities constitute completion of 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 June 2, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the technical support center and emergency operating facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

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

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index - Emergency ac Power System (MS06)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - emergency ac power system performance indicator for Units 2 and 3 for the period from the second quarter 2009 through the first quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors

used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, mitigating systems performance index derivation reports, issue reports, event reports, and NRC integrated inspection reports for the period of March 25, 2009 through March 24, 2010, to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified.

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

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - High Pressure Injection Systems (MS07)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - high pressure injection systems performance indicator for Units 2 and 3 for the period from the second quarter 2009 through the first quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of March 25, 2009 through March 24, 2010, to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified.

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

b. Findings

No findings were identified.

.4 Mitigating Systems Performance Index - Heat Removal System (MS08)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - heat removal system performance indicator for Units 2 and 3 for the period from

the second quarter 2009 through the first quarter 2010. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, mitigating systems performance index derivation reports, and NRC integrated inspection reports for the period of March 25, 2009 through March 24, 2010, to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified.

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

b. Findings

No findings were identified.

40A2 Identification and Resolution of Problems (71152)

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

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

Introduction. The inspectors identified a Green noncited violation of Technical Specification 5.5.1.1 for the failure of operations personnel to follow Procedure SO123-0-A1, "Conduct of Operations," Revision 27, to appropriately control operator aids.

Description. On March 30, 2010, the inspectors performed a tour of the Unit 2 main steam isolation valve area to monitor plant status. The inspectors noted that placards were on each of the Unit 2 atmospheric dump valves to provide instructions for local/manual valve operations. The inspectors also noted that the placards did not have an index number to approve the instructions as operator aids. The inspectors observed that similar placards existed on the Unit 3 atmospheric dump valves. The inspectors confirmed that the placards observed at the atmospheric dump valves were not being tracked in the Unit 2 and 3 operator aids book in the control room and informed operations personnel of the observations. Operations personnel initiated Nuclear Notification NN 200856079 to evaluate this issue of concern. Operations personnel determined that the operations procedure group used a hidden comment tool in Word Perfect for Procedure SO23-13-2, "Shutdown from Outside the Control Room," to track the placards at the atmospheric dump valves. However, the tool used by the operations procedure group failed to keep the placards updated to the current revision of Procedure SO23-13-2 and failed to formally track the placards as operator aids in the Unit 2 and 3 operator aids book.

On April 1, 2010, during a Unit 2 control room board walkdown, the inspectors observed a graph with information installed on the control board CR050A that did not have an index number. The information came from Procedure SO23-5-1.7, "Power Operations," and provided a graph of reactor coolant system cold leg temperature versus reactor power. The inspectors informed operations personnel of their observation and Nuclear Notification NN 200859154 was initiated. Operations personnel determined that the graph had previously been identified as an operator aid. However, a new graph had inappropriately been installed without the index number following steam generator replacement to provide revised information per Procedure SO23-5-1.7.

On May 18, 2010, the inspectors observed an equipment operator measure emergency diesel generator lube oil using the local dipstick. During the evolution, the inspectors observed the equipment operator wait 10 seconds prior reading the dipstick. When asked why he was waiting, the equipment operator indicated that a placard on the emergency diesel generator near the lube oil dipstick directed him to wait the 10 seconds. The inspectors noted that the placard did not have an index number to track the placard as an operator aid. Further, the inspectors determined that the requirement to wait prior to reading the dipstick came from Procedure SO23-I-8.5, "Diesel Generator Engine Lube Oil Inspection and Addition." Specifically, Procedure SO23-I-8.5 required that the equipment operator leave the dipstick in for at least 10 seconds after adding oil or when the engine was running to obtain an accurate oil reading. The procedure further cautioned that the reading should be repeated due to agitation of the oil when the engine was running to assure a representative reading. The inspectors concluded that the placard did not have all relevant information from Procedure SO23-I-8.5 used to assure that accurate oil readings were obtained. Operations personnel initiated Nuclear Notification NN 200856079 to document this issue.

As a result of the inspectors' observations related to operator aids, the licensee performed an extent of condition review per Orders 800538905 and 800538906 to review program adherence and identify additional discrepancies. The extent of condition review identified additional examples where operator aids were not appropriately controlled.

The inspectors reviewed the requirements of Procedure SO123-0-A1, "Conduct of Operations," Revision 27, for the control of operator aids. Procedure SO123-0-A1, Step 6.10.1, stated that, "Informal aids may not represent accurate information and shall not be used in the conduct of operations." The inspectors concluded that their observations of the uncontrolled operator aids constituted informal aids that should not have been used by operations personnel in the conduct of operations. The inspectors also noted that Step 6.10.5, stated that, "Unapproved Operator Aids (i.e.; ones that do not have an index number) should be reported to Operations Supervision, who should either have it removed or approved as an Operator Aid." Operations personnel failed to identify for correction missing index numbers on the operator aids observed by the inspectors and those subsequently identified by the licensee during the extent of condition review.

Analysis. The failure of operations personnel to follow the procedure to programmatically control operator aids was a performance deficiency. The performance deficiency is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, 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 (Green) because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the component of corrective action program because the operations personnel failed to implement a corrective action program with a low threshold for identifying issues [P.1(a)].

Enforcement. Technical Specification 5.5.1.1 requires, in part, that procedures be established, implemented, and maintained covering the activities specified in Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," of Regulatory Guide 1.33, "Quality Assurance Program Requirements," dated February 1978. Appendix A, Item 2, requires procedures for general plant operations. Procedure SO123-0-A1, "Conduct of Operations," Revision 27, provided the guidance for general plant operations, including the program requirements to appropriately control operator aids. Contrary to the above, between March 30 and May 18, 2010, operations personnel failed to follow Procedure SO123-0-A1 to appropriately control operator aids. Specifically, the inspectors identified several operator aids that were not controlled per the requirements of Procedure SO123-0-A1, Section 6.10, "Operator Aids." Operations personnel implemented the controls required by Procedure SO123-0-A1 for the operator aids identified by the inspectors and performed an extent of condition review to identify and correct additional improperly controlled operator aids. Because this finding is of very low safety significance and has been entered into the licensee's corrective action

program as Nuclear Notification NN 200856079, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361; 05000362/2010003-07, "Inappropriate Control of Operator Aids."

.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'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 repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of September 2009 through February 2010, although some examples expanded beyond those dates where the scope of the trend warranted.

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

Introduction. A Green self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for the licensee's failure to determine the cause and take corrective actions to preclude repetition of a significant condition adverse to quality associated with repeated leakage of safety-related piping.

Description. On November 20, 2009, engineering personnel observed a white deposit on Unit 2 pipe S21219ML057, "T006 Refueling Water Storage Tank Gravity Feed Outlet," during an inspection of the auxiliary feedwater line tunnel. During extent of condition walkdowns, six additional leaks were identified in the emergency core cooling system in both Units 2 and 3. Following identification of these leaks, the licensee determined that this issue reached the threshold of a significant condition adverse to quality in that these leaks from safety related piping constituted a moderate risk to the reliable operation of the plant such that recurrence is unacceptable, in accordance with SO123-XV-50.CAP-2, "SONGS Nuclear Notification Screening." The licensee initiated a root cause evaluation on January 21, 2010. In March and April 2010, the licensee identified two additional leaks which were included in the scope of the root cause evaluation.

During the licensee's root cause evaluation, the licensee determined that there had been fourteen previous leaks identified in Schedule 10S piping in safety-related systems, starting in December 1985 and continuing through June 2008. Of these, seven were determined to have been caused by stress corrosion cracking. The other seven leaks were caused by fatigue failures, of which no known failures have occurred since 2006. The licensee determined that each of these leaks was a missed opportunity to determine the cause of the condition and take the corrective actions necessary to preclude repetition of through-wall leakage that was caused by the use of thin-walled, high carbon content stainless steel piping. In each case, the licensee replaced the leaking section of pipe, but did not determine the root cause or take action to correct the underlying degradation of the piping prior to initiation of additional leakage. The licensee's process was to replace leaking sections of pipe as those leaks were discovered, although there was no systematic process in use to inspect for leaks. These leaks from prior to November 2009 were caused by the same mechanisms as the more recently identified leaks, and therefore, also constituted a moderate risk to the reliable operation of the plant, and as such were a significant condition adverse to quality.

As specified in the Updated Final Safety Analysis Report, this piping was originally intended to be low carbon content stainless steel piping; instead the licensee utilized a high carbon content stainless steel (see Section 4OA7 for details). The combination of high carbon content and thin pipe wall makes Schedule 10S piping susceptible to stress corrosion cracking. There are numerous industry experiences and past history at all three of the units that illustrate this phenomenon. At Unit 1, approximately one thousand feet of piping in the chemical and volume control system were replaced due to this condition.

In 1985 and 1986, cracks were identified in the refueling water storage tank gravity feed line for Unit 2 and the boric acid system for Unit 3. Both of these cracks were repaired with no cause evaluation completed. In 1991, one leak was identified on the Unit 3 emergency core cooling minimum flow line. This leak was repaired with no cause evaluation completed. In 1995, one leak was identified on the Unit 2 spent fuel pool minimum flow line. The licensee initiated an apparent cause for this failure and developed an inspection and repair plan (Document 90463) that was not commenced until 1998. Document 90463 stated that the causes of the previous failures were due to cyclic fatigue and/or stress corrosion cracking in the heat affected zone of the piping welds. The licensee instituted this inspection and repair plan to inspect safety significant Schedule 10S piping and to replace or repair any welds that were determined to be suspect. No definition or description of what constituted a suspect weld was included in

this document. The document specified that the inspections should be repeated on a refueling periodicity; however, no additional inspections were performed after the initial inspection was completed in 2000. Additional leaks attributed to stress corrosion cracking occurred on the Unit 3 auxiliary feedwater suction line in 1999, the Unit 3 primary makeup water line to the spent fuel pool in 2002, and the Unit 2 spent fuel pool makeup pump suction line in 2008. In each case, the licensee replaced the leaking section of pipe, but did not identify the cause nor take corrective actions to preclude repetition of this through-wall leakage. In January 2010, the licensee identified this failure in Nuclear Notification NN 200753741, initiated a root cause evaluation and implemented an extensive inspection and repair plan to repair or replace based on risk ranking of the susceptible piping.

Analysis. The failure to determine the cause and preclude repetition of a significant condition adverse to quality was a performance deficiency. The performance deficiency is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that since the most recent opportunity to identify and correct this condition was in June 2008, and the licensee has instituted numerous corrective actions to address this issue, that this deficiency is not indicative of current performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," requires that in the case of significant conditions adverse to quality, measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. Contrary to the above, from 1985 through June 2008, the licensee failed to determine the cause of the numerous failures of the Schedule 10S piping and did not take corrective actions to preclude repetition of additional piping leaks. In January 2010, the licensee initiated a root cause evaluation and developed an extensive inspection and repair plan. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NN 200753741, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361; 05000362/2010003-08, "Failure of Schedule 10S Piping."

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting the issues listed below. The inspectors considered the following during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition,

generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

- March 15, 2010, Unit 2, degrading pilot cell voltage identified on Class 1E battery 2B008 as documented in Nuclear Notification NN 200834923
- May 18, 2010, Unit 2, incorrect dipsticks in emergency diesel generator lube oil sumps as documented in Nuclear Notification NN 200706227

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

b. Findings

Failure to Appropriately Identify and Classify Degraded Voltage on a Class 1E Battery

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of engineering personnel to fully evaluate a degraded condition in accordance with its corrective action program procedures. Specifically, after identifying that a degraded 1E battery cell constituted a failure, the licensee failed to initiate a new nuclear notification and take appropriate actions commensurate with the safety significance of the failure.

Description. On March 15, 2010, while performing routine monthly surveillance on Class 1E battery 2B008, the licensee identified that pilot cell 13 individual cell voltage was 2.1323 V and degrading. This was below the licensee's administrative limit of 2.14 V, but above the voltage required by Technical Specification Surveillance Requirement 3.8.6.6. Nuclear Notification NN 200834923 was generated to evaluate this condition. The licensee's Action Review Committee classified Nuclear Notification NN 200834923 as a significance level 4; the inspectors determined that this was appropriate based on the information available at the time the classification was made. The initial operability determination and subsequent prompt operability determination performed under this nuclear notification determined the battery to be operable based on the lowest individual cell voltage being above the technical specification limit of 2.07 V.

On March 18, 2010, an equalizing charge was performed on battery 2B008 to restore the voltage of degraded cell 13. Following the equalizing charge, hourly readings taken by operations of cell 13 voltage indicated continuing degradation. Based on this, operations personnel determined on March 20, 2010, that there was not reasonable assurance that the battery would perform its safety function. A new "IOD" task was generated and the battery was declared inoperable. The affected cell was removed from service and replaced with the spare cell. As of June 17, 2010, the failed cell remained installed in the spare position on the 2B008 battery rack.

Procedure SO123-XV-52, "Functionality Assessments and Operability Determinations," Revision 14, Step 6.5.3, stated "If the status is INOPERABLE, perform Section 6.10 for the Extent of Condition (EOC) evaluation." After the battery was declared inoperable, no task was generated to determine extent of condition; no extent of condition evaluation was performed.

Procedure SO123-XV-3.3, Revision 15 EC 15-1, Step 6.1 stated, in part, that SONGS employees, upon becoming aware of an existing or potential condition that could require a report under 10 CFR or technical specifications, should prepare a nuclear notification describing the event or condition and “Create a Reportability Assignment (RPT) to document whether the event or condition is reportable to the NRC.” Step 6.5.1.1 lists as a typical condition requiring an RPT assignment, “Equipment unknowingly inoperable or non-functional. These occurrences may result in a Tech Spec violation . . . , or result in a loss of safety function . . . : Tech Spec component failed its inservice test, fixed and returned to service . . . Tech Spec component found non-functional, cause unknown, investigation in progress.” On March 20, 2010, battery 2B008 was declared inoperable based on the determination that “there is not a reasonable expectation that the battery will perform its specified safety function.” No new nuclear notification was created and no reportability assignment was generated.

Procedure SO123-XV-52, Revision 14, Step 6.11.5, stated “If, while awaiting corrective action completion, the degraded condition becomes worse . . . The Responsible Engineer should submit a new Notification to initiate a new IOD assessment of the most recent change in conditions when conditions in the POD are challenged.” After battery 2B008 cell 13 continued to show signs of degradation following the equalizing charge, no new nuclear notification was generated.

Procedure SO123-XV-50.CAP-2, “SONGS Nuclear Notification Screening,” Revision 5, lists as examples of Level 2 problems, “An unplanned Limiting Condition of Operation (LCO) entry of 72 hours or less, unless immediate operator action can be taken to exit the LCO” and “Critical ‘A’ Component Failures.” The inspectors determined that the continued degradation of battery 2B008 cell 13 following the equalizing charge and the resulting inoperability declaration by operations personnel met these criteria for Level 2 significance. However, because no new nuclear notification was generated, the new condition was not reviewed for significance by the action review committee. Therefore, significance level was not appropriately assigned and actions commensurate with the safety significance of the problem were not taken.

Analysis. The failure of the licensee to evaluate a degraded condition and to take appropriate corrective actions in accordance with its corrective action program procedures was a performance deficiency. The performance deficiency is more than minor because it is associated with the equipment reliability attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of non-technical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because licensee management failed to define and effectively communicate expectations regarding procedural compliance such that personnel follow procedures [H.4(b)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, on March 20, 2010, operations and engineering personnel failed to accomplish an activity affecting quality in accordance with prescribed instructions, procedures, or drawings. Specifically, after identifying that there was not a reasonable expectation that a degraded safety-related battery was operable, operations and engineering personnel failed to initiate a nuclear notification in accordance with corrective action procedures. In response to the inspectors' question, the licensee initiated Nuclear Notification NN 200973110 to perform appropriate evaluations of the degraded battery cell. Because this violation is of very low safety significance and has been entered into the licensee's corrective action program as Nuclear Notification NN 200973110, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361/2010003-09, "Failure to Appropriately Identify and Classify Degraded Voltage on a Class 1E battery."

.5 Crosscutting Issues Followup Inspections

a. Inspection Scope

The inspectors conducted periodic discussions with licensee management to monitor their progress in addressing the substantive crosscutting concerns and the Site Integrated Improvement Plan implementation. The substantive crosscutting issues in the areas of human performance and problem identification and resolution have not seen the level of performance improvement expected. Further, the inspectors performed a focused review of the substantive crosscutting issue in the area of human performance associated with the component of resources. Specifically, the inspectors reviewed the following items and associated corrective actions:

1. Reviewed applicable administrative procedures for the following attributes:
 - Guidance for preparation of revisions to procedures
 - Direction for reviews; who or what organizations should review, level of detail in reviews, number of reviewers, are reviews mandatory or optional, how to incorporate reviewer's comments
 - Directions for approval of procedures and revisions; who approves, responsibility of the approval authority for ensuring the adequacy of the procedure or revision
 - Guidance for the use of associated tools; i.e., word processing, SAP, commitment tracking tools, research applications, etc.
 - Adequacy of periodic procedure reviews
2. Reviewed training and qualifications of procedure writers, authors, reviewers, and approvers.

3. Evaluated the quality of procedures to determine whether approved procedures complied with required format and content, clarity of directions, place-keeping tools, and contained sufficient detail for the user.
4. Reviewed the process to identify procedures which require revision prior to use and evaluated whether the process was adequate to prevent the use of 'out-of-date' or technically incorrect procedures.
5. Evaluated whether the periodic reviews were performed at the required periodicity, and whether these reviews were sufficiently thorough to maintain the procedures up to date.
6. Reviewed the feedback process for end-users to identify problems or recommendations back to the authors/writers, evaluated whether the process was being used, and reviewed how the feedback was tracked.
7. Reviewed corrective action documents and other tracking systems for instances of inadequate procedures, and whether these items were documented, evaluated, and corrected appropriately.

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

b. Findings

The NRC has identified violations associated with procedure control adequacy which were previously documented as NCV 05000361; 05000362/2009003-09, "Failure to Maintain Written Procedures Covered in Regulatory Guide 1.33," NCV 05000361; 05000362/2009009-02, "Failure to Maintain Written Procedures Covered in Regulatory Guide 1.33," and VIO 05000361; 05000362/2010006-08, "Failure to Maintain Written Procedures Covered in Regulatory Guide 1.33." No additional findings were identified during this review.

40A3 Event Follow-up (71153)

.1 Event Follow Up

a. Inspection Scope

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

- March 31, 2010, Unit 2, Management Directive 8.3 review for Class 1E 4.16 kV Square D breaker design problems
- April 4, 2010, Units 2 and 3, declaration of a notice of unusual event due to earthquake

- April 10, 2010, Unit 2, unexpected trip on high volts to hertz prior to closing breaker during main generator startup
- May 5, 2010, Unit 2, test to determine whether repairs could be made to the sixth point feedwater heater without impacting condenser vacuum
- May 14, 2010, Unit 2, turbine-driven auxiliary feedwater pump 2P140, governor output circuit card manufacturing defect
- May 15, 2010, Unit 2, unexpected power transient during high pressure governor and stop valve testing
- June 14, 2010, Units 2 and 3, ground motion detected on site requiring entry into abnormal operating instruction SO23-13-3, "Earthquake," Revision 13

Documents reviewed by the inspectors are listed in the attachment.

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

b. Findings

(1) 4.16 kV Breaker Design Deficiencies

Introduction. A Green self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion VII, "Control of Purchased Material, Equipment, and Services," was identified for the failure of engineering personnel to assure that 4 kV vacuum circuit breakers supplied by NLI/Square D conformed to the procurement documents prior to installation in Unit 2 bus 2A06 train B.

Description. On December 18, 2009, 4 kV bus 2A06 was restored to operable following installation of replacement 4 kV vacuum circuit breakers supplied by NLI/Square D. The new Square D replacement breaker's design requirements were developed in 2005 as documented in Specification SO23-302-02A, "4kV Roll-in Replacement Circuit Breakers," Revision 1. Specification SO23-302-02A required that the new Square D breakers be like-for-like replacements and interchangeable with the existing ABB air circuit breakers.

On March 18, 2010, component cooling water pump breaker 2A0605 unexpectedly tripped immediately after operating. Investigation determined that the unexpected breaker trip was caused by a failed resistor internal to the red status light in the control circuit. It was also noted that the new Square D breaker's trip coil was rated at a lower voltage than the previously installed ABB air circuit breaker's trip coil, and that the red status lights may impact the trip coil function. Engineering personnel questioned this cause of failure since the red status lights in the control circuit should not have impacted the trip coil function, provided the new Square D replacement breakers were interchangeable with the ABB air circuit breakers. Further investigation identified that the new breakers were not like-for-like replacements as specified in procurement documents since the red closure lights were wired to the trip coil. The investigation also identified that the vendor completed seismic qualification test was conducted without the red lights connected to the trip coil, therefore, deviating from the purchase specification. Accordingly, operations personnel declared 4 kV bus 2A06 inoperable since the

qualification documentation was not adequate to ensure that the new Square D breakers would perform their required safety function. Additional testing determined that the breakers were functional when all red status lights were wired to the trip coil, however, the design margins for trip coil voltage were unacceptable for installation in safety-related applications.

The licensee's cause evaluation identified that human error due to a lack of questioning attitude contributed to this issue. Specifically, in 2005, during selection of Square D circuit breakers as a replacement for the ABB breaker the analysis and documentation of the differences between the two breakers' trip coil was not adequate to address the trip coil voltage requirements. The inspectors concluded that this lack of questioning attitude contributed to an overreliance on the specifications developed in 2005, which reduced the necessary level of rigor to assure that the new Square D circuit breakers conformed to the procurement documents.

Analysis. The failure to assure that safety-related circuit breakers conformed to the specifications of the procurement documents prior to installation in the plant was a performance deficiency. The performance deficiency is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using the Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," Phase 1 guidance, the finding is determined to have very low safety significance (Green) because the finding did not result in an increase in the likelihood of a loss of reactor coolant system inventory, degrade the ability to add reactor coolant system inventory, or degrade the ability to recover decay heat removal. Since the lack of questioning attitude that contributed to an overreliance on the specifications occurred in 2005, and procurement specification training was conducted in 2008 to close an identified gap in specification review and implementation, the inspectors determined that this was not reflective of current performance and therefore did not have a crosscutting aspect associated with it.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion VII, "Control of Purchased Material, Equipment, and Services," states, in part, that measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents. Contrary to the above, on December 18, 2009, 4 kV bus 2A06 was restored to operable following installation of 4 kV vacuum circuit breakers supplied by NLI/Square D that did not conform to the design requirements specified in the procurement documents. Specifically, engineering personnel failed to assure that 4 kV vacuum circuit breakers conformed to the requirements of Specification SO23-302-02A, "4kV Roll-in Replacement Circuit Breakers," Revision 1, and failed to identify that the vendor completed seismic qualification test deviated from the procurement specifications. Consequently, the new circuit breakers were installed in 4 kV bus 2A06 and placed in operation with design inadequacies. On March 18, 2010, an unexpected trip of component cooling water pump circuit breaker 2A0605 prompted an investigation that identified the design inadequacies. Operations personnel declared the associated circuit breakers inoperable following identification of the design inadequacies. Immediate actions to eliminate the design inadequacies were completed to return 4 kV bus 2A06 to operable on March 25, 2010. Apparent Cause Evaluation ACE 200845084 was initiated to identify additional corrective actions. Because the finding is of very low safety

significance, and has been entered into the licensee's corrective action program as Nuclear Notification NN 200842716, this violation is being treated as a noncited violation consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361/2010003-10, "Failure to Assure Circuit Breakers Were Qualified for Installation."

(2) Vacuum Test Abnormal Evolution

Introduction. The inspectors identified a Green finding for the failure of the licensee to follow its procedures for written instruction use and adherence during a test to determine the impact on main condenser vacuum of a damaged feedwater heater.

Description. On April 27, 2010, licensee operations and engineering personnel developed a procedure in accordance with Procedure SO123-0-A3, "Procedure Use," Revision 9, Step 6.32, "Abnormal Evolutions, Form OP(123) 29," to test whether repairs could be made to a damaged sixth point feedwater heater without adverse impact to the plant. On May 5, 2010, during performance of this test, the SRO-licensed operator implementing this procedure incorrectly interpreted a procedural step, concluding that the criteria for terminating the procedure had not yet been satisfied and intending to continue in the procedure. When questioned by the inspectors who were observing the evolution, the operator determined that termination criteria had in fact been met. The operator took appropriate actions to terminate the procedure.

Based on interviews immediately following the evolution, the inspectors determined that the operator's confusion was the result of an unclear procedure step in the abnormal evolution procedure. This step required evaluation of the statement "2ME-047 channel head pressure is within 3 inches of atmospheric pressure (13.23 lbs)." If this statement was true, the test was complete; if false, the test would continue. When the operator reached this step in the procedure, channel head pressure was approximately 2 inches of mercury (in Hg) vacuum, relative to atmosphere. The operator failed to recognize that the termination criteria had been met.

The inspectors determined that the statement "2ME-047 channel head pressure is within 3 inches of atmospheric pressure (13.23 lbs)," was unclear because neither inches nor pounds are units of pressure. The compound pressure gauge being monitored during the evolution indicated atmospheric pressure at zero. Vacuum relative to atmospheric pressure was indicated in in Hg and positive pressure was indicated in pounds per square inch gage (psig). While 13.23 pounds per square inch absolute (psia) would correspond to 3 in Hg vacuum relative to normal atmospheric pressure, the conflicting information based on the unclear pressure units led the operator to incorrectly interpret this step; he indicated he was looking for the gauge to read 13.23 psig, a condition that could not be met.

SONGS Procedure SO123-XV-HU-3, "Written Instruction Use and Adherence," Revision 3, defined error traps to include "Vague Terms or Misleading Information," and "Conflicting Information." Step 6.5.1 to this procedure stated, "When error traps are encountered, then STOP the activity and contact supervision." Procedure SO123-0-A3, "Procedure Use," Revision 9, Section 6.5, "Written Instruction Error Traps," stated that there were "[n]o exceptions to SO123-XV-HU-3." The inspectors determined that the unclear units of pressure used in the abnormal evolution instruction met the licensee's definition of error traps in that they were vague. Further, the abnormal evolution

instruction contained conflicting information as to the channel head pressure/vacuum criterion for a decision point in the procedure.

Analysis. The failure of an operator to adhere to station procedures regarding the use of written instructions was a performance deficiency. The performance deficiency is more than minor because it affected the human performance attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability during power operations, and is therefore a finding. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a crosscutting aspect in the area of human performance associated with the component of work practices because the licensee failed to communicate human error prevention techniques such that work activities were performed safely [H.4(a)].

Enforcement. No violation of regulatory requirements occurred. The licensee entered the finding into the corrective action program as Nuclear Notification NN 200909706 to evaluate the issue and identify corrective actions. Because this finding does not involve a violation of regulatory requirements and has very low safety significance, it is identified as FIN 05000361/2010003-11 "Failure to Follow Station Procedures on Written Instruction Use and Adherence."

.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 05000362/2009-002, Emergency Diesel Start Failure Results in Unusual Event

This issue was reviewed by the inspectors and results of the review are documented in Section 4OA3 of NRC Inspection Report 05000361; 05000362/2009005. Two noncited violations were identified and are documented in Section 1R12 of NRC Inspection Report 05000361; 05000362/2009005 as NCV 05000362/2009005-03, "Failure to Correct Problems with Emergency Diesel Generator Train B," and NCV 05000362/2009005-04, "Failure to Correct Problems with Emergency Diesel Generator Train A." No additional findings were identified during the review of this event as documented in the licensee event report. This licensee event report is closed.

4OA6 Meetings

Exit Meeting Summary

On May 11, 2010, the inspectors conducted a telephonic exit meeting to present the results of the in-office inspection of changes to the licensee's emergency plan implementing procedure to

Ms. K. Gallion, Manager, Onsite Emergency Planning. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On June 30, 2010, the inspectors presented the inspection results to Mr. R. Ridenoure, 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.

40A7 Licensee-Identified Violations

The following Severity Level IV violation was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a noncited violation.

Title 10 CFR 50.71(e) requires that the licensee periodically update the Final Safety Analysis Report, as provided in subsequent paragraphs. Subparagraph 50.71(e)(4) requires subsequent revisions must be filed annually or 6 months after each refueling outage provided the interval between successive updates does not exceed 24 months and these revisions must reflect all changes up to a maximum of 6 months prior to date of filing. Contrary to the above, on March 30, 2010, the licensee identified that they had failed to update their Updated Final Safety Analysis Report to maintain consistency with their design documentation. Specifically, the licensee determined that the piping material used in construction of portions of the emergency core cooling system and the auxiliary feedwater system and the associated piping maintenance was not consistent with Updated Final Safety Analysis Report Appendix 3A (3A.1.44). The Updated Final Safety Analysis Report specified that the systems would be constructed using low carbon content stainless steel piping; however, the licensee used high carbon content stainless steel piping. The inspectors determined that this finding was not suitable for evaluation using the significance determination process, and as such, was evaluated in accordance with the NRC Enforcement Policy. The finding was reviewed by NRC management and because the violation was determined to be of very low safety significance, was not repetitive or willful and was entered into the corrective action program, this violation is being treated as a Severity Level IV noncited violation consistent with the NRC Enforcement Policy. The issue was entered into the licensee's corrective action program as Nuclear Notification NN 200856130.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Adler, Manager, Maintenance/Systems Engineering
B. Arbour, Operator Continuing Training Supervisor
J. Armas, Supervisor, Maintenance Engineering Fluid Process
S. Giannell, Supervisor, Emergency Planning
D. Axline, Technical Specialist, Nuclear Regulatory Affairs
D. Bauder, Vice President and Station Manager
B. Corbett, Manger, Performance Improvement
G. Cook, Manager, Compliance, Nuclear Regulatory Affairs
R. Davis, Manager, Health Physics
K. Gallion, Manager, Onsite Emergency Planning
S. Gardner, Electrical/System Engineering Manager
M. Graham, Manager, Plant Operations
A. Hochevar, Station Manager, Plant Operations
E. Hubley, Director, Maintenance & Construction Services
G. Johnson, Jr., Senior Nuclear Engineer, Maintenance/Systems Engineering
K. Johnson, Manager, Design Engineering
L. Kelly, Engineer, Nuclear Regulatory Affairs
D. Spires, Director, Work Control
J. Madigan, Director Site Recovery
A. Meichler, Mechanical/System Engineering Supervisor
B. MacKissock, Director, Plant Operations
N. Quigley, Manager, Maintenance/System Engineering
R. Ridenoure, Senior Vice President and Chief Nuclear Officer
C. Ryan, Manager, Maintenance & Construction Services
R. St. Onge, Director, Nuclear Regulatory Affairs
J. Todd, Manager, Security

NRC Personnel

M. Runyan, Senior Reactor Analyst

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000362/2010003-01	NCV	Unavailability Time for Component Cooling Water Incorrectly Counted (Section 1R12)
05000361/2010003-02 05000362/2010003-02	NCV	Failure to Assess and Manage Risk for Maintenance on Emergency Diesel Generators (Section 1R13)
05000361/2010003-03 05000362/2010003-03	NCV	Improper Risk Assessment and Management for Work Activities (Section 1R13)

Opened and Closed

05000361/2010003-04 05000362/2010003-04	NCV	Failure to Define the Control Room as Required by Technical Specifications (Section 1R13)
05000361/2010003-05	NCV	Failure to Follow Work Control Procedures (Section 1R15)
05000361/2010003-06 05000362/2010003-06	NCV	Inadequate Operability Determination for Safety-Related Concrete Cracks (Section 1R15)
05000361/2010003-07 05000362/2010003-07	NCV	Inappropriate Control of Operator Aids (Section 4OA2)
05000361/2010003-08 05000362/2010003-08	NCV	Failure of Schedule 10S Piping (Section 4OA2)
05000361/2010003-09	NCV	Failure to Appropriately Identify and Classify Degraded Voltage on a Class 1E Battery (Section 4OA2)
05000361/2010003-10	NCV	Failure to Assure Circuit Breakers Were Qualified for Installation (Section 4OA3)
05000361/2010003-11	FIN	Failure to Follow Station Procedures on Written Instruction Use and Adherence (Section 4OA3)

Closed

05000362/2009-002	LER	Emergency Diesel Start Failure Results in Unusual Event (Section 4OA3)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-XX-29.1	Seasonal Readiness	0

SO23-2-8	Saltwater Cooling System Operation	34
SO23-6-30	Switchyard Inspection and Operation	29

NUCLEAR NOTIFICATIONS

NUMBER

200486325	200006369	200959825	200959711
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MAINTENANCE ORDERS

NUMBER

800339516	800260394	800119155
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Section 1R04: Equipment Alignment

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-3-3.23	Diesel Generator Monthly and Semi-Annual Testing	47
SO23-I-8.5	Diesel Generator Engine Lube Oil Inspection and Addition	7

NUCLEAR NOTIFICATIONS

NUMBER

200886377	200886393	200706227
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DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-403-12-302	Diesel Engine Replacement Parts Catalog	1

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
J-KJA-012	Diesel Generator Low Lube Oil Level Alarm Setpoint	1

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
TE-93-0233	Unit 2/3 Dipstick Level Gauge for Emergency Diesel Generator Lube Oil System	0

Section 1R05: Fire Protection

NUCLEAR NOTIFICATIONS

<u>NUMBER</u>		
200816454	200779227	200808191

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
2-001A	SONGS Pre-Fire Plans	6
2-001	SONGS Pre-Fire Plans	4
2-013	SONGS Pre-Fire Plans	7
3-045	SONGS Pre-Fire Plans	7
2/3-021	SONGS Pre-Fire Plans	7
2/3-020	SONGS Pre-Fire Plans	7
2/3-023	SONGS Pre-Fire Plans	7
2/3-024	SONGS Pre-Fire Plans	7
2/3-025	SONGS Pre-Fire Plans	5

Section 1R06: Flood Protection Measures

NUCLEAR NOTIFICATIONS

<u>NUMBER</u>			
200866391	200869984	200904514	200920827

MAINTENANCE ORDERS

NUMBER

800082533 8000072641

DRAWINGS

NUMBER

TITLE

REVISION

21050, sheet 1 Electric Manhole 16

Section 1R07: Heat Sink Performance

PROCEDURES

NUMBER

TITLE

REVISION

SO23-2-8.1	Saltwater Cooling System Removal/Return to Service Evolutions (Online or Outage)	9 EC 9-1
SO23-2-17.2	Component Cooling Water System Removal/Return to Service Evolutions (Online or Outage)	10
SO23-I-8.94	Component Cooling Water Heat Exchanger Cleaning and Inspection	10
SO23-V-3.25	Component Cooling Water Heat Exchanger Testing	10
SO23-V-3.25	Component Cooling Water Heat Exchanger Testing	11
SO23-2-8	Saltwater Cooling System Operation	34
SO23-12-3	Loss of Coolant Accident	21

NUCLEAR NOTIFICATIONS

NUMBER

200006369 200265047 200941155

MAINTENANCE ORDERS

NUMBER

800490993 800074173

DRAWINGS

TITLE

REVISION

Tube Plug Map for Component Cooling Water Heat Exchanger
S31203ME001

7

CALCULATIONS

NUMBER

TITLE

REVISION

M-0027-029 CC/SWC Heat Exchanger Performance Tests

0

M-0027-029 CC/SWC Heat Exchanger Performance Tests

0 CCN-5

M-0027-023 CCW/SCW Heat Exchanger Operability

0 CCN-10

Section 1R11: Licensed Operator Requalification Program

MISCELLANEOUS

NUMBER

TITLE

REVISION

Scenario As Found 2010 Cycle 3
RZ1034

1

Section 1R12: Maintenance Effectiveness

PROCEDURES

NUMBER

TITLE

REVISION

SO23-3-2.13 Core Protection Operations

15

SO23-XV-5.3 Maintenance Rule Program

12

SO123-XV-5.3 Maintenance Rule Program

12

NUCLEAR NOTIFICATIONS

NUMBER

200897833 200911250 200915334 200770458 200961310

MAINTENANCE ORDERS

NUMBER

800502852 800450350

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
System Health Report	Excore Nuclear Instrumentation – EXCR	1 st quarter 2010
MR-CCW-01	Maintenance Rule Function Report: Component Cooling Water	May 20, 2010
MR-SWC-01	Maintenance Rule Function Report: Salt Water Cooling	May 26, 2010
	SONGS System Health Report	1 st quarter 2010
	Maintenance Rule Monthly Unavailability Report	May 26, 2010

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-XX-8	Integrated Risk Management	5
SO23-3-3.1	Boric Acid Flow path Verification	16
SO23-13-14	Reactor Coolant Leak- AOI	14

SO23-XX-8	Integrated Risk Management	3
SO23-XX-8	Integrated Risk Management	6
SO23-XX-10	Maintenance Rule Risk Management Program Implementation	3
SO23-XV-2	Troubleshooting Program	6
SO123-XX-19	Operational Decision Making Process	4
SO23-15-60.A1	Annunciator Panel 60A, Emergency HVAC, Windows 1-30	11

NUCLEAR NOTIFICATIONS

NUMBER

200859096	200863033	AR 040300517	200885881	200486325
200006369	200882009	200881214		

MAINTENANCE ORDERS

NUMBER

800339516	800074173	800119155	800260394
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MISCELLANEOUS

	<u>TITLE</u>	<u>DATE</u>
	IT-1 Evaluation for the Unit 3 E048 Leak Repair	June 29, 1998

Section 1R15: Operability Evaluations

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-3-3.31.9	RCS Pressure Isolation Valve Testing Hydro Pump Method-Offline	13
SO123-XV-52	Functional Assessments And Operability Determinations	16
SO23-3-3.51	Containment Penetration Leak Rate Testing	7
SO23-3-2.12	Reactor Protective System Operation	15
SO123-XV-50.CAP-2	SONGS Nuclear Notification Screening	5
SO123-XV-52	Functionality Assessments and Operability Determinations	17 EC 17-1
SO23-XV-2	Troubleshooting Plant Equipment and Systems	7
SO123-XV-52	Functional Assessments And Operability Determinations	16

NUCLEAR NOTIFICATIONS

<u>NUMBER</u>				
200859528	200856883	200856112	200858177	200880417
200867272	200863132	200887212	200889040	200918766
200957584	200493705	200950887	200957926	200950754
200950757	200936210	200929687	200927625	200929692
200957289	200682982	200690597		

MAINTENANCE ORDERS

NUMBER

800264342 800525183 800528969

DRAWINGS

NUMBER

TITLE

REVISION

214FAB1-002 2"-600 lift check valve A

S2-2417-ML-298 Line 020 and System 2417 for Valve 2HV-4762 2

SO23-944-600 Sheet 2 Plant Protection System Simplified Functional Diagram 4

CALCULATIONS

NUMBER

TITLE

REVISION

S-02-C-001 Maintenance Rule Concrete Crack Inspection and Evaluation 0

MISCELLANEOUS

NUMBER

TITLE

REVISION / DATE

ECP 020900117-3

Test Report 54626R07 SONGS Test Procedure-Wyle lab September 18, 2007

PVAR 3311997

2-10-24 Abnormal Evolution: Monitor Unit 2 Reactor Trip Circuit Breakers while performing Trip Test of TCB-2 and TCB-6 June 16, 2010

SO23-302-03B Unit 2 & 3 Reactor Trip Replacement Breakers 1

Section 1R18: Plant Modifications

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-0-A4	Configuration Control	13
SO123-XXIV-10.1	Preparation, Review, Approval, Issuance, Implementation, and Closure of Engineering Change Packages(NECP0	21
SO123-XV-5.1	Temporary Modification Control	10
SO123-XV-1.20	Seismic Controls	0

NUCLEAR NOTIFICATIONS

NUMBER

200909717 200911597

MAINTENANCE ORDERS

NUMBER

800299817 800299376 800299376 800446113

DRAWINGS

NUMBER

TITLE

REVISION

40160B Auxiliary Feedwater Steam Supply P&I Diagram 24

Section 1R19: Postmaintenance Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-XV-HU-2	Human Performance Tools	2

SO23-2-4	Auxiliary Feedwater System Operation	27
SO23-3-3.60.6	Auxiliary Feedwater Pump And Valve Testing	16
SO2-XXVI- 9.8000.71289.1	Auxiliary Feedpump MP140 Controls Upgrade Preoperational Test	0
SO123-I-9.5	Electrical Inspection of Limitorque Actuators	11
SO123-I-9.30	Motor Operated Valve Analysis And Test System	5
SO123-I-1.18	Foreign Material Exclusion	14
SO23-1-8.94	Component Cooling Water Heat Exchanger Clean and Inspection	10
SO23-2-13	Emergency Diesel Generator Operations	44
SO123-II-11.152	Circuit Device Tests and Overall Functional Test	14
SO23-3-3.25.1	Once a Shift Surveillance	34
SO123-I-1.3	Work Activity Guidelines	26
SO23-XV-2	Troubleshooting Program	7
SO23-I-1.25	Post Maintenance Testing	0

NUCLEAR NOTIFICATIONS

NUMBER

200863558	200823240	200918633	200773569	200861083
200870136	200729012	200848431	200867229	200735074

200773569	200359897	200956656	200955732	200944535
200891074				

MAINTENANCE ORDERS

NUMBER

800473050	800401872	800404057	800442657	800327928
800400008	800293256	70007001	800509532	800229428
800355978	800259587	800233962	800432675	800187271
800072649	800072650	800229428	200773569	80030264
800071702	800175663	800522113	800521468	800522351
30009820	800522480	WCA 70008258	WCD 30009819	800425531
800404057	800403996	800404057	800424101	800422126
800075970	800442657	800420804	800429752	800260924
800071683				

DRAWINGS

NUMBER

TITLE

REVISION

SO23-405-7-018	Turbine Control Panel Layout	1
SO23-405-7-D18	Turbine Control Schematic	1

MISCELLANEOUS

NUMBER

TITLE

REVISION /
DATE

NECP 800071702	Replacement Steam Generator	0
SO23-617-01	Steam Generator Replacement Conformed Specification	4

WO 3174313	Certificate of Tank tightness Testing	April 21, 2010
SO23-3-3.23 (A)1	Monthly Surveillance Test Results 2G003	April 27, 2010
SO23-3-3.23 (A) 2	Diesel Generator Standby Verification	April 25, 2010
SO123-O-A4 (A) 9	Emergency Diesel Generator Start Verification 2G003	April 26, 2010
VT-2	S22421MY379 Fuel Oil Day Tank Flexible Hose Inspection 2G003	April 24, 2010

Section 1R20: Refueling and Other Outage Activities

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-3-1.1	Reactor Startup	32
SO23-XXXVII-13	Reactor Engineering Procedure on Physics Data Controls	7
SO23-XXXVII-1	Low Power Physics Testing	1

NUCLEAR NOTIFICATIONS

<u>NUMBER</u>		
200871982	200872603	200872717

Section 1R22: Surveillance Testing

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-3-3.8	Safety Injection System Monthly Verification of Charged Piping	25

SO23-V-16	Emergency Core Cooling System Void Calculation	2
SO23-3-3.60.4	Saltwater Cooling Pump Operations	12

NUCLEAR NOTIFICATIONS

NUMBER

200876389

MAINTENANCE ORDERS

NUMBER

8000454951 70006256

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
3P112	Saltwater Cooling Pump Inservice Testing Data	May 21, 2010

Section 1EP6: Drill Evaluation

NUCLEAR NOTIFICATIONS

NUMBER

200950710 200950741 200950657 200950571 20095051

Section 4OA2: Identification and Resolution of Problems

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO123-XV - 50.CAP-2	SONGS Nuclear Notification Screening	5
Document 90463	Unit 2 and 3 Schedule 10, Stainless Steel Piping Inspection and Repair Plan	0
204043-TR-001	WSI Repair Traveler ECCS Pipe Repair Common Prerequisites and Closure	0

204043-TR-002	WSI Repair Traveler ECCS Pipe Repair 24" Spool Piece (S2-1204-ML-001, Sheet 3)	0
SO123-XII-9.501	Ultrasonic Examination	4
SO123-XV-50.CAP-4	Implementing Corrective Actions	3
SO123-XV-50.CAP-2	SONGS Nuclear Notification Screening	5
SO23-XXI-1.11.1	Maintenance and Construction Services Procedure Writer Training Program Description	0
SO123-I-1.10	Developing M&CS Procedures	13
SO123-VI-0.9	Author's Guide for the Preparation of Orders, Procedures and Instructions	13
SO123-VI-1	Review/Approval Process for Order, Procedures and Instructions	25
SO123-VI-1	Review/Approval Process for Order, Procedures and Instructions	27 EC 27-2
SO123-VI-1.0.1	Temporary Change Notices (TCNs) Processing	21 EC 21-1
SO123-VI-1.0.2	Periodic Review of Orders, Procedures and Instructions	13
SO123-XV-20	Verification Practices	3
SO123-I-1.7	Work Order Preparation and Processing	33
SO123-I-1.10.1	Procedure Evaluation	4
SO23-2-13	Diesel Generator Operation	43
SO123-VI-1	Review/Approval Process for Order, Procedures and Instructions	28
SO123-XXIV-1.1	Document Review and Approval Control	13-2
SO123-XXIV-1.1	Document Review and Approval Control	13-3
SO123-XV-109.3	Procedure Evaluation Matrix	1
SO123-XV-109.1	Procedure Action Review Committee (PARC) Process	0
SO123-XV-109	Procedure and Instruction Format and Content	0
SO123-XV-109	Procedure and Instruction Format and Content	0 EC 3

NUCLEAR NOTIFICATIONSNUMBER

200857086	200766362	200856130	200760570	200755716
200682817	200822042	200687365	200054339	200683974
200039389	200766362	200714391	200753741	200683739
200715628	200843691	200870907	200834923	200836042
200836795	200973110	200729711	200533392	200855689
200213530	200486030	200898535	200929138	200923099
200431285	200655777	200800808	200751021	

ACTION REQUESTSNUMBER

920500056	950600074	911100069	990300665	980200264
020800129	060500131	920500056	011200984	

MAINTENANCE ORDERSNUMBER

800415935	800430813	800180140	800390386	800390384
800195258	800073533	800390380	800655777	800340387

MISCELLANEOUSNUMBERTITLEREVISION /
DATE

RCE 92-018	Corrosion of Stainless Steel Pip in the FFPCPD System sluice Water Inlet Line to the resin separation tank – SONGS 2	June 19, 1992
3UT-048 -09	S3-1204 -ML-001 Ultrasonic Calibration and Examination	December 23, 2009
3PT-019 -09	S3-1204 -ML-001A Penetrant Examination	December 23, 2009
WR2-09-153	Line No. S2-1204-ML-002 Spool No. 2-SI-002-15 Weld Record	1
WR2-09-154	Line No. S2104-ML-002, Spool No. 2 -SI -002-15 Weld Record	0
WR2-09-155	Line No. S2104-ML-002, Spool No. 2-SI-002-15 Weld Record	0
WR2-09-156	Support: S2-SI -002-H-022; Spool 2-SI-002-015 Weld Record	0

3UT - 002- 10- 1	S3- 1204- ML - 001&ML002 Ultrasonic Calibration and Examination	January 12, 2010
014- 09	Repair/Replacement Plan	0
	Operations Division Corrective Action Burndown Plan	November 6, 2009
0804000202	Directed Assessment Report – Procedure Quality and Use Assessment	
	Procedure Improvement Plan – David Linders, Absolute Consulting, Inc.	April 10, 2009
	EPRI Work Package Training and Certification, NEI Work Instruction Training	
	Training History	

Section 4OA3: Event Follow-Up

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO23-13-3	Earthquake	13
SO123-0-A3	Procedure Use	36
SO23-3-3.34	Turbine Overspeed Protection Valve Operability Test	26
SO23-I-8.5	Diesel Generator Engine Lube Oil Inspection and Addition	7

NUCLEAR NOTIFICATIONS

<u>NUMBER</u>				
200873031	200909706	200920254	200918633	200924037
200871982	200872603	200872717	200842716	200929482
200706227	200966640			

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
J-KJA-012	Diesel Generator Low Lube Oil Level Alarm Setpoint	1

DRAWINGS

SO23-403-12-302	Diesel Engine Replacement Parts Catalog	1 DCN 17
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MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
2-10-22	Form OP(123) 29	1
1-10-006	Priority 1 Reading	March 24, 2010
QR-1148091-1, Addendum II	HK Replacement Breakers	0
SO23-302-02A	4 kV Roll-In Replacement Circuit Breakers	1