San Onofre 2
1Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Properly Store C-Panels in the Radwaste Building
The team identified a Green noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of plant personnel to follow site procedures that controlled equipment storage in the radwaste building. Specifically, on October 5, 2010, inspectors identified that plant personnel failed to follow Procedure SO23-XX-31, "Control of Work and Storage Areas within the Protected Area during Unit Outages at SONGS 2 and 3," Revision 0, by improperly storing portable electrical equipment panels outside an approved laydown area. The portable electrical equipment panels were tied-off near a hydrogen supply line which could have been damaged during a seismic event. Consequently, a hydrogen fire could have damaged trains A and B safety related equipment cables in the overhead, but sufficient train A cables were free of the area to permit a safe shutdown. A hydrogen fire was not analyzed in the San Onofre Units 2 and 3 "Fire Hazards Analysis Report," because the hydrogen line was designed to withstand a seismic event. The licensee captured this performance deficiency in their corrective action program as Nuclear Notifications NNs 201142972 and 201140052.

This performance deficiency is more than minor because it could adversely affect the protection against fires attribute of the initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and is therefore a finding. The inspectors performed the initial significance determination for the finding using the NRC Inspection Manual 0609, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors transitioned to NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." However, this guidance was not well suited for this finding. A Region IV senior reactor analyst completed a Phase 3 significance determination and found that the finding was of very low safety significance. The bounding change to core damage frequency was 4E-8/year. The dominant core damage sequence included a loss of offsite power initiating event and failure of a safety relief valve to seat. The relatively low frequency of a seismic induced loss of offsite power event coupled with the remaining available equipment helped to limit the finding's significance. The finding had a crosscutting aspect in the area of human performance associated with the work practices component and the self-checking theme, because personnel failed to properly check the procedural requirements prior to staging C-panels near the hydrogen line [H.4(a)] (Section 4OA5).

Inspection Report# : 2010005 *(pdf)*

Significance: G Jul 16, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Define Authorities and Responsibilities of Work Process Area Operator
Green. The inspectors identified a non-cited violation of Technical Specification 5.5.1.1 for failure to provide a written procedure to define authorities and responsibilities of all work process area operators. Specifically, on July 13, 2010, the work process area had an additional operator, identified on the watchbill as the "CRC" (Control Room Coordinator), who performed activities normally performed by the Work Process Supervisor, including providing oversight for pre-job briefs and authorizing start of tasks without receiving a turnover and formally accepting the position of Work Process Supervisor. The licensee documented this violation in Nuclear Notification 201014984, and its short term corrective actions included required reading and coaching to instruct Work Process Supervisors not to delegate their authority to authorize work without a formal turnover. Southern California Edison will also add guidance procedures SO123-0-A-1 and SO123-0-A-2 "Conduct of Operations".
The inspectors concluded that the finding was more than minor because it could be reasonably viewed as a precursor

to a significant event. Specifically, lack of a procedure to define the roles, responsibilities, and authorities of all personnel who may simultaneously hold work process area authority may lead to inadequate coordination of concurrent work and inadvertent authorization of multiple activities that could cause a plant transient or reactor trip. The finding is associated with the Initiating Events cornerstone. Using NRC Inspection Manual 0609, Attachment 0609.04, “Phase 1-Initial Screening and Characterization of Findings”, the inspectors determined the finding 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. The inspectors determined the finding has a crosscutting aspect in the area of human performance associated with decision-making because the licensee did not make safety-significant decisions using a systematic process, including formally defining the authority and roles for decisions affecting nuclear safety [H.1(a)]. (Section 4OA2)

Inspection Report# : 2010010 *(pdf)*

Significance: G Jun 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Improper Risk Assessment and Management for Emergent Work
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)].

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Define the Control Room as Required by Technical Specifications
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)].

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 23, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to Follow Station Procedures on Written Instruction Use and Adherence
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).

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 17, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to provide adequate procedure for boron dilution activities
The inspectors reviewed a self-revealing noncited violation of Technical Specification 5.5.1.1.a involving the failure to maintain adequate instructions in San Onofre Procedure SO23-3-2.4, “RCS Purification and De-borating Ion Exchanger Operation,” Revision 21 to control borating of ion exchangers. The failure to maintain an adequate procedure resulted in an unplanned power reduction by control room operators. This issue was entered into the licensee’s corrective action program as Nuclear Notification 200721702. Immediate corrective actions included revising the procedure and operator crew training.

The finding was more than minor because it was associated with the Initiating Events Cornerstone attribute of human performance, and it affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and that challenge critical safety functions during shutdown, as well as during power operations. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors concluded that the transient initiator did not contribute to both the likelihood of a reactor trip and to the likelihood that mitigation equipment or functions would not be available. As a result, the issue was of very low safety significance (Green). The finding has a crosscutting aspect in the area of human performance associated with the work practices because licensee supervisory personnel did not ensure activities associated with re-activity control were performed in a controlled manner such that nuclear safety was assured. [H.4(c)]

Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 17, 2010

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to secure loose items in the electrical switchyard
The inspectors identified a noncitied violation of Technical Specification 5.5.1.1.a involving the failure to follow procedural guidance of SO123 XX-11, “Switchyard Work Performance.” Specifically, the inspectors identified temporary equipment stored in the switchyard that was not tethered or otherwise secured in accordance with the procedure. The licensee entered a notification in its corrective action program as Nuclear Notification 200870138, and removed or secured the items.

This finding is more than minor because it impacts the protection against the external factors attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown and power operations. Using the Inspection Manual Chapter 0609 “Significance Determination Process,” Phase 1 Worksheet, the inspectors determined that the finding was of 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 also has a human performance crosscutting aspect associated with the work control component in that personnel failed to appropriately plan work activities involving job site conditions which may impact plant structures, systems and components. [H.3(a)]

Inspection Report# : 2010006 *(pdf)*

Significance: G Aug 25, 2009
Identified By: NRC
Item Type: VIO Violation
Failure to Assess and Manage Risk for Maintenance That Could Impact Offsite Power Components
The inspectors identified a cited violation of 10 CFR 50.65(a)(4) for the failure of work control and operations personnel to adequately assess and manage the increase in risk associated with maintenance activities. Specifically, on August 25-27, 2009, work control and operations personnel failed to adequately assess and manage the increase in risk associated with maintenance activities in or near the electrical switchyard and offsite power components. Due to the licensee’s failure to restore compliance from the previous NCV 05000361; 05000362/2009003-04 within a reasonable time after the violation was identified, this violation is being cited in a Notice of Violation consistent with Section VI.A of the NRC Enforcement Policy. This finding was entered into the licensee’s corrective action program as Nuclear Notifications NNs 200556120 and 200559128.
The failure to include maintenance activities in or near the electrical switchyard and offsite power components in the on-line risk assessment was a performance deficiency. This finding is greater than minor because the licensee’s risk assessment failed to consider maintenance activities that could increase the likelihood of initiating events such as work in or associated with offsite power sources and the electrical switchyard, associated with the initiating events cornerstone. In accordance with Inspection Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Step 4.1.1, the inspectors had the licensee re-perform the assessment, correcting the errors that rendered the original risk assessment inadequate. The finding is determined to have very low safety significance because the incremental core damage probability deficit and the incremental large early release probability deficit, used to evaluate the magnitude of the error in the licensee’s inadequate risk assessment, were less than 1 x 10-6 and 1 x 10 7, respectively. This finding has a crosscutting aspect in the area of problem identification and resolution associated with corrective action program because the licensee did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity [P.1(d)].
Inspection Report# : 2009004 *(pdf)*

Mitigating Systems

Significance: G Feb 23, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedures to Establish Compensatory Measures

The Inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instruction, Procedures, and Drawing,” for the failure of operations personnel to follow the requirements of station procedure to perform an adequate operability determination and establish compensatory measures associated with an emergency diesel generator. Specifically, on February 23, 2011, operations personnel failed to follow procedures to establish compensatory measures associated with an emergency diesel generator when an immersion heater was removed from service. On March 18, interim corrective actions were taken that included operator required reading (priority 2 reading) to ensure that on-shift licensed operators use conservative decision making regarding compensatory measures. Planned corrective actions will be part of a root cause evaluation. These issues have been entered into the licensee’s corrective action program as Nuclear Notifications NNs 201365616, 201348283 and 201378245.
The performance deficiency was determined to be more than minor and is therefore a finding because it was associated with the Mitigating Systems Cornerstone attribute of procedure quality and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the NRC Manual Chapter 0609, Attachment 4, “Phase 1 - Initial Screening and Characterization of Findings,” the finding is determined to have very low safety significance because it did not result in the loss of safety function of any technical specification required equipment. The finding was determined to have a crosscutting aspect in the area of human performance associated with the decision-making component because the licensee failed to verify the validity of underlying assumptions for operability decision-making.
Inspection Report# : 2011002 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Appropriately Classify Conditions Adverse to Quality for Significance
Between September 23 and November 15, 2010, the inspectors identified two examples of a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure of licensee personnel to follow the requirements of corrective action program procedures for nuclear notification significance screening. Specifically, licensee personnel failed to follow Procedure SO123-XV-50.CAP-2, “SONGS Nuclear Notification Screening,” Revision 7, to properly screen for significance, conditions that result in non-routine reporting to the NRC and Critical A component failures. In response to the inspectors’ question, the licensee initiated Nuclear Notifications NNs 201122165 and 201203374 to perform appropriate evaluations of the corrective action programmatic issues.

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

Inspection Report# : 2010005 *(pdf)*

Significance: G Dec 21, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to Follow Station Procedures for Seasonal Readiness
The inspectors identified a finding for the failure of license personnel to follow procedure SO23-XX-29.1, “Seasonal Readiness.” Specifically, licensee personnel failed to implement, as seasonal weather conditions dictated, the appropriate preventative maintenance program for roof drains associated with the emergency diesel generator

buildings. As a result of the recurring degraded and clogged roof drains, rainwater was allowed to accumulate on the roof which resulted in water intrusion into the Unit 2 building and over energized electrical equipment. A plastic tent was installed by maintenance personnel to protect the electrical equipment. Based on the inspectors' concerns, licensee personnel completed a walkdown of the other emergency diesel building to identify whether similar rainwater intrusion was occurring. Maintenance personnel corrected the condition by removing debris which had clogged the Unit 2 roof drains. This issue was entered into the licensee's corrective action program as Nuclear Notifications NN 201393414 and NN 201174566.

The performance deficiency is more than minor and is therefore a finding because it is associated with the protection against external events 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. Using the NRC Manual Chapter 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance because it did not represent a loss of system safety function, nor actual loss of safety function of a single train, and it did not screen as potentially risk significant due to flooding or severe weather because the potentially degraded equipment was not specifically designed to mitigate flooding or severe weather nor would it contribute to external event initiated accident sequences. The finding was determined to have a crosscutting aspect in the area of human performance associated with the component of work control because the licensee did not plan and coordinate work activities consistent with nuclear safety. Specifically, the licensee did not plan or implement preventative maintenance for roof drains to support long-term equipment reliability by limiting reliance on manual actions, such as plastic tents to protect plant equipment during the winter rainy season. Maintenance scheduling was more reactive than preventative [H.3(b)]
Inspection Report# : 2011002 *(pdf)*

Significance: G Oct 08, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Comply with Technical Specifications
The inspectors identified a noncited violation of Technical Specification 3.5.4, "Refueling Water Storage Tank," for the failure of licensee personnel to enter the technical specification or complete the associated required action prior to the appropriate completion time when the refueling water storage tank (RWST) was inoperable. Specifically, the licensee did not enter the appropriate technical specification for an inoperable RWST when it was potentially not capable of performing its specified safety function while aligned to non-seismic spent fuel pool cooling and purification system for cleanup. On October 8, 2010, operations personnel placed administrative controls on system isolation valves to prevent the RWST from being aligned to non-seismic systems. This issue was entered into the licensee's corrective action program as Nuclear Notifications NNs 201133936 and NN 201135761.
The performance deficiency was determined to be more than minor and is therefore a finding because it is associated with the design control attribute of the Mitigating Systems Cornerstone and affects the associated cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the NRC Inspection Manual 0609, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors determined that a Phase 2 evaluation was required because the finding involved the potential loss of safety function. A Phase 2 significance determination was performed using the pre-solved worksheet from the "Risk Informed Inspection Notebook for the San Onofre Nuclear Generating Station," Revision 2.01a. Assuming both trains of high pressure injection were inoperable, the finding was Yellow, which warranted further review. Therefore, the analyst performed a bounding Phase 3 significance determination. Based on the licensee's PRA calculation, consultation with licensee PRA personnel, and an understanding of the bounding and conservative assumptions incorporated in the analysis, the analyst determined that the licensee's delta-CDF result of 7.6E-7/yr was clearly bounding, that the large early release frequency was negligible, and that the significance of the issue was very low. Since the apparent root cause determined the cause was due to weaknesses in the design change processes early in plant operations (between 1982 and 1995), and the licensee's program has improved with respect to performing design changes, the inspectors determined that this finding was not reflective of current performance and therefore did not have a crosscutting aspect associated with it.
Inspection Report# : 2011002 *(pdf)*

Significance: G Aug 16, 2010
Identified By: NRC

Item Type: VIO Violation
Failure to Ensure At Least One Train of Equipment Necessary to Achieve Hot Shutdown Conditions Is Free of Fire Damage
Green. The team identified a cited violation of License Condition 2.C(14), “Fire Protection,” for failure to correct a noncompliance. Specifically, Inspection Report 05000361;362/2007008 documented a noncompliance involving the failure to ensure that at least one train of safe shutdown equipment would remain free from fire damage in each fire area. The NRC exercised discretion not to cite this violation at that time because the licensee met the criteria described in Enforcement Guidance Memorandum 98 002, Revision 2, and Supplement 2 to that revision. Enforcement Guidance Memorandum 07-004 superseded Enforcement Guidance Memorandum 98-002 and required licensees to complete corrective actions for noncompliances related to post-fire operator manual actions by March 6, 2009. This violation is being cited due to the failure to complete corrective actions and restore compliance within the required time. This finding was entered into the licensee’s corrective action program as Notification NN 200940265.

The failure to promptly restore adequate fire protection and/or separation of required safe shutdown systems was a performance deficiency. This performance deficiency was more than minor because it was associated with the protection against external factors (fire) attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events in order to prevent undesirable consequences. Because the violation involved multiple fire areas, the team could not evaluate this issue using Phase 2 of Inspection Manual Chapter 0609, Appendix F, and a Phase 3 significance determination process risk assessment was performed by a senior reactor analyst. The finding was determined to have very low risk significance (Green), with a delta-CDF of 3.2E-8/yr, because of a combination of the availability of long recovery times for feasible operator manual actions and low-probability fire damage scenarios in the nine fire areas with fire sources which could potentially damage cables of required safe shutdown components. This finding involved a cross-cutting aspect in the decision-making component in the human performance area because the licensee failed to make a risk-significant decision using a systematic process when considering the scheduling of corrective actions [H.1 (a)]

Inspection Report# : 2010007 *(pdf)*

Significance: G Jul 12, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Promptly Identify and Correct a Condition Adverse to Quality Associated with Safety-related Emergency Ventilation Fans
A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” was identified for the licensee’s failure to promptly identify and correct a condition adverse to quality associated with safety-related emergency ventilation fans. Specifically, the licensee did not adequately identify a degrading material condition on the emergency ventilation fan nose cones that resulted in failure of the emergency diesel generator train B vaneaxial fan on July 12, 2010. The licensee’s apparent cause evaluation developed corrective actions to periodically replace safety-related emergency ventilation fans at a 12 year interval. This issue was entered into the licensee’s corrective action program as Nuclear Notifications NNs 201009885 and 201088409.
The performance deficiency is more than minor and is therefore a finding because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather imitating event. Since the inadequate corrective actions were developed in 2003 and the licensee’s corrective action program has improved with respect to extent of condition reviews, the inspectors determined that this finding was not reflective of current performance, and therefore, did not have a crosscutting aspect associated with it (Section 1R15).
Inspection Report# : 2010004 *(pdf)*

Significance: G Jun 25, 2010

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide Training Mandated by a Root Cause Evaluation
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for failure of electrical maintenance management personnel to adequately ensure that training was provided to electrical maintenance workers on techniques to prevent loose electrical connections. This training was a required action as described in root cause evaluation RCE 050601315 written in response to a June 2005 failure of an emergency diesel generator surveillance test due to a loose electrical connection in an emergency supply fan for the Unit 3 train B emergency diesel generator. The licensee entered this finding into their corrective action program as Nuclear Notifications NNs 200986184 and 200992291.
The failure of electrical maintenance management personnel to adequately implement corrective actions as prescribed by a root cause evaluation was a performance deficiency. The performance deficiency is more than minor and is therefore a finding because it is associated with the human performance attribute of the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding: (1) was not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Since this finding is associated with a 2005 root cause evaluation, that required training as part of the corrective action followup and there have been changes to the licensee’s corrective action program, the inspectors determined that this was not reflective of current performance and therefore did not have a crosscutting aspect associated with it (Section 4OA2).
Inspection Report# : 2010004 *(pdf)*

Significance: G Jun 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Assess and Manage Risk for Maintenance on Emergency Diesel Generators
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)].

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 23, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Work Control Procedures
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)].

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Operability Determination for Safety-Related Concrete Cracks
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)].
Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inappropriate Control of Operator Aids
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)].

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 23, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure of Schedule 10S Piping
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.

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 23, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Appropriately Identify and Classify Degraded Voltage on a Class 1E Battery
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)].

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 23, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Assure Circuit Breakers Were Qualified for Installation
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.

Inspection Report# : 2010003 *(pdf)*

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate operability determination of the turbine driven auxiliary feed water pump steam admission valves.
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," involving the failure to follow procedural requirements for performing operability determinations. Specifically, the licensee's operability evaluation for a degraded turbine-driven auxiliary feedwater pump steam admission valve failed to address all the specified safety functions of the affected component as described in the Final Safety Analysis Report and design basis documents. For example, the operability determination incorrectly stated that manual closure of the valves was not a credited safety function and incorrectly assumed nonsafety-related instrument air would always be available to close the valves. This finding was entered into the licensee's corrective action program as Nuclear Notifications 200869281 and 200887620. The licensee's corrective actions included re-performing the evaluation and emphasizing with licensee staff the importance of ensuring all design basis information is considered in operability evaluations.

The finding was more than minor because it impacted the Mitigating Systems Cornerstones and its objective to ensure the availability and reliability of equipment that responds to initiating events. Using Inspection Manual Chapter 0609 the issue screened to a Phase 3 analysis because it represented a loss of safety function for greater than the allowed technical specification allowed outage time and it screened to greater than Green using the Phase 2 pre-solved worksheet. The senior reactor analyst determined that this finding was of very low safety significance (Green) based on a bounding calculation which assumed inoperability of the component for a year. The senior reactor analyst determined that the combined significance of these scenarios was a delta-core damage frequency of 1.3E-7/yr and a delta-large early release frequency of 4.2E-8/yr. Therefore the violation was determined to be of very low safety significance (Green). The analyst determined that the cause of the finding has a crosscutting aspect in the area of human performance associated with decision making. Specifically, the licensee utilized unsupportable assumptions in its evaluation that were not consistent with the Final Safety Analysis Report or the valve vendor manual. [H.1.b] (Section 40A2.5a)

Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to translate design basis information into procedures for the turbine-driven auxiliary feed water pump steam admission valves
The team identified an NON-CITED VIOLATION of 10 CFR 50, Appendix B, Criterion III, "Design Control" in that the licensee failed to translate design basis information into procedures for the turbine-driven auxiliary feedwater pump steam admission valves. Specifically, the licensee did not translate into procedures the design requirements to manually close and gag the valves within 30 minutes in response to high energy line breaks or fire in the auxiliary feed water pump room, or in the event of a steam generator tube rupture. In addition, the licensee failed to determine the forces required to manually close the valves. As a result of the team's questioning, the licensee found that a person could not manually close the valve against the spring and system pressures. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 200887620.

The finding is more than minor because it impacted the Mitigating Systems Cornerstones and its objective to ensure the availability and reliability of equipment that responds to initiating events. The inspectors screened the issue to more than one cornerstone due to its effect on early release (steam generator tube rupture), fire protection, and mitigating systems (high energy line break). A senior reactor analyst performed a Phase 3 analysis to determine the risk significance of the degraded turbine-driven auxiliary feedwater steam admission valve. The analysis considered the effects of a high energy line break in the pump room, a steam generator tube rupture, and fires in the pump room and auxiliary feedwater pipe tunnel. The analyst determined that the combined significance of these scenarios was a

delta-CDF of 1.3E-7/yr and a delta-LERF of 4.2E-8/yr. Therefore the violation was determined to be of very low safety significance (Green). [Troy's comments are that we need more explanation what makes it green.] The team determined that cause of the finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program. Specifically, the licensee had multiple opportunities to evaluate this problem when the licensee removed the valve from the inservice testing program in 2004-2005, and in evaluating external operating experience in November 2009. [P.1(a)]

Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Lack of preventive maintenance results in valve failure and inoperable condensate storage tank.
The inspectors identified a noncited violation of Technical Specification 3.7.6, which requires, in part, that Condensate Storage Tank T-120 be operable. Specifically, the tank isolation valve 2HV5715 had been inoperable for a period greater than the allowed outage time of seven days while Unit 2 was in Modes 1, 2, and 3. The valve isolates nonseismic piping from the tank and is required to be manually closed within 90 minutes following a seismic event. The licensee had not performed preventive maintenance on the valve resulting in the valve failing to close during an in-service test on January 26, 2010. This finding was entered into the licensee's corrective action program as Nuclear Notification 200765235. The licensee's corrective actions included repairing the isolation valve.

This finding is more than minor because it impacted the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Phase 1, "Initial Screening and Characterization of Findings," a Phase 2 analysis was performed because the condensate storage, Tank T-120, was inoperable greater than that allowed in technical specifications. Phase 2 analysis resulted in a potential greater than Green issue therefore, a Phase 3 was performed.

The analyst performed a Phase 3 using San Onofre seismic information and fragility data associated with the piping that could not be isolated because of the failed condition of valve 2HV5715. The frequency of a seismic event that would cause a pipe break and drain tank T-120 was estimated to be 2.7E-5/yr. Given a seismic event that causes a loss of offsite power (nearly 100 percent of seismic events that rupture the piping would also cause a loss of offsite power), operators are compelled by procedure to cool down and initiate shutdown cooling. The amount of water that is protected with valve 2HV5715 failed to open, which includes inventory from tank T-121 and water below the break line in tank T-120, given that operators close the working manual isolation valve within 30 minutes, is more than what is needed to get to shutdown cooling in natural circulation with only 1 of 2 steam generator atmospheric dump valves in operation, even if there is a 4-hour hold time at hot standby. The analyst estimated that the failure probability of operators to cool down and initiate shutdown cooling is 1.0E-2. Therefore, assuming a zero base case, the estimated delta- core damage frequency of the finding is 2.7E-5/yr. (1.0E-2) = 2.7E-7/yr.

The inspectors also determined that the cause of the finding has a crosscutting aspect in the area of human performance associated with resources in that the licensee did not ensure that equipment was available and adequate to assure nuclear safety by minimization of long standing equipment issues in that the valve was not being maintained through a preventive maintenance program. [H.2(a)]

Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: VIO Violation
Failure to maintain written procedures covered in Regulatory Guide 1.33
The inspectors identified a cited violation of Technical Specification 5.5.1.1.a, involving the failure to maintain adequate written procedures. Specifically, as of April 23, 2010, the licensee's controls over its backlog of procedure change requests associated with plant modifications were inadequate to prevent licensee personnel from using outdated procedures with known technical errors in the plant. The performance deficiency of failing to control the

backlog of procedure changes, such that procedures with known technical errors were in use in the plant were previously identified by the NRC on two occasions and were documented as noncited violations 05000361; 05000362/2009003 09 and 2009009-02. Because the licensee failed to restore compliance within a reasonable time after the previous noncited violations were identified, this violation is being cited in a Notice of Violation in accordance with Section VI.a.1 of the NRC's Enforcement Policy. This finding was entered into the licensee's corrective action program as Nuclear Notification 200888919. The licensee's corrective action included immediate actions to administratively suspend these procedures until they could be revised and to evaluate changes needed to its program to prevent recurrence.

The failure to maintain procedures covered by Regulatory Guide 1.33 is a performance deficiency. The finding is of more than minor significance because, if left uncorrected, the failure to maintain and control procedures would have the potential to lead to a more significant safety concern. Using Inspection Manual Chapter 0609, Phase 1,"Initial Screening and Characterization of Findings," the finding was determined to have a very low safety significance because the finding did not result in a loss of system safety function, an actual loss of safety function of a single train for greater than its technical specification allowed outage time, or screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component, because problems were not thoroughly evaluated, such that the resolutions addressed the causes and extents of condition. This includes properly classifying and prioritizing conditions adverse to quality. [P.1(c)]

Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish goals and monitor for Auxiliary Feedwater trains
Two examples of a noncited violation of 10 CFR 50.65(a)(1) were identified involving the failure to monitor the unavailability time associated with equipment failures which were maintenance induced. The first example involved maintenance inadvertently bending the fuse holder contacts such that there was a loose connection on the power supply on the turbine-driven auxiliary feedwater pump resulting in its failure. The second example involved the failure to perform maintenance associated with a condensate storage tank isolation valve resulting in its failure during in-service testing. In both cases, if the licensee had assessed the unavailability time due to the maintenance induced failures, the systems would have exceeded the 10 CFR 50.65(a)(2) monitoring criteria, necessitating the systems to be placed in 10 CFR 50.65(a)(1) goal setting. The licensee's corrective actions included evaluating its procedures to prevent recurrence, and re-evaluating these systems to determine the impact of accounting for unavailable time.

This finding is more than minor because it affects the equipment performance attribute of the Mitigating Systems Cornerstone per Inspection Manual Chapter 612, Appendix B. Using Inspection Manual Chapter 0609, Phase 1, "Initial Screening and Characterization of Findings," the inspectors determined the finding to be of very low safety significance (Green) because they did not represent the loss of a system safety function and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The cause of the finding was determined to have a crosscutting aspect in the area of human performance. Specifically, personnel failed to use a formal decision making process to determine how to count unavailable hours for the maintenance rule. [H.1(a)]

Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to identify and correct the use of deficient relays.
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," in that, from October 2008 to April 2010, the licensee failed to promptly identify and correct potentially degraded motor-driven relays in safety-related systems and components. Specifically, after identifying a degraded relay affecting an emergency diesel generator, the licensee replaced all similar relays in the other diesel generators but failed to evaluate the use of these potentially degraded relays in other safety-related systems. The licensee entered this issue into the

corrective action program as Nuclear Notification 200146292, and developed a plan to replace the 62 degraded relays that were installed in other safety-related equipment.

This finding was more than minor because it impacted 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. Using Inspection Manual Chapter 0609.04, Phase 1, “Initial Screening and Characterization of Findings,” the inspectors determined the finding to be of very low safety significance (Green) because it did not represent the loss of a system safety function and 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 decision-making component, in that the licensee did not use conservative assumptions in making decisions about the extent of condition [H.1(b)]

Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to maintain design basis information
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” involving the failure to translate nonconservative errors in calculations and procedures identified during review of external operating experiences. The first example involved the sizing calculation for the condensate storage tank failing to account for effects of auxiliary feedwater pump heat during recirculation. The second example involved the failure to update procedural guidance concerning the adverse effects of placing the low pressure safety injection system into operation following use of the residual heat removal system in the shutdown cooling mode of operation above 200?F. This issue was entered into the licensee’s corrective action program as Nuclear Notification 200886265. The licensee initiated actions to correct its procedure and calculation for each instance.
The finding is of more than minor significance because it adversely affects the design control attribute of the mitigating systems cornerstone objective. Using Inspection Manual Chapter 0609.04, Phase 1, “Initial Screening and Characterization of Findings,” the finding was determined to have a very low safety significance (Green) because the finding did not result in a loss of system safety function, an actual loss of safety function of a single train for greater than its technical specification allowed outage time, or screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding has a crosscutting aspect in the area of problem identification and resolution associated with the operating experience component because the licensee failed to implement and institutionalize operating experience information, including vendor recommendations, through changes to plant processes, procedures, equipment, and training programs. [P.2(b)]

Inspection Report# : 2010006 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to establish component cooling water radiation monitoring procedures.
The inspectors identified a noncited violation of Technical Specification 5.5.1.1.a, "Scope," involving the failure to establish procedures for component cooling water system alignments such that leakage of radionuclides to the environment would be monitored during all operational alignments of component cooling water. Specifically, radiation monitors could be aligned to only one train of component cooling water at a time and the licensee's procedures had no provision for monitoring the second train when both trains were in-service. This finding was entered into the licensee's corrective action program as Nuclear Notification 200871387, and actions were implemented to require periodic grab sampling of the train which was not being monitored.

The inspectors determined that this finding was more than minor because this issue impacted the Public Radiation Protection Cornerstone and its objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. Specifically, the radiation monitors for component cooling water were not sufficient to ensure adequate release measurements. The inspectors evaluated the significance of this finding using Phase 1 of Inspection Manual Chapter 0609.04 and determined that the finding screened to Inspection Manual Chapter 0609, Appendix D, "Public Radiation Safety Significance Determination Process." The inspectors evaluated the significance of this finding using Inspection Manual Chapter 0609, Appendix D, and determined that the finding was of very low safety significance (Green) because dose did not exceed Appendix I criteria. This finding was determined to have a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program in that the plant operators did not have a low threshold for identifying deficiencies in procedures. [P.1(a)]

Inspection Report# : 2010006 *(pdf)*

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Jun 17, 2010
Identified By: NRC
Item Type: FIN Finding
San Onofre Nuclear Generating Station Biennial PI&R Inspection Summary.
The inspectors reviewed approximately 300 condition reports, work orders, engineering evaluations, root and apparent cause evaluations, and other supporting documentation to determine if problems were being properly identified, characterized, and entered into the corrective action program for evaluation and resolution. The inspectors reviewed a sample of system health reports, self-assessments, trending reports and metrics, and various other documents related to the corrective action program.

When compared with the findings from the previous inspection conducted in September 2008, the findings from this inspection indicate that the corrective action program effectiveness has declined. As previously discussed in the past five NRC assessment letters, the licensee's ability to thoroughly evaluate problems such that the resolutions effectively address the causes and extent of conditions is of concern. The licensee's efforts to reverse the trend of substantive crosscutting issues in both the human performance and problem identification and resolution areas have not shown to be effective.

Additionally, the inspection identified a number of issues that the licensee's staff had previous opportunities to identify. The inspectors noted that even after issues were discussed with the licensees' staff, thorough evaluations were not consistently completed. We noted examples were the evaluations for deficient components failed to fully address the component safety functions for all applicable design basis accident scenarios.

The inspectors determined that the licensee adequately evaluated industry operating experience for relevance to the facility, and entered applicable items in the corrective action program. The inspectors noted that operating experience was considered in cause evaluations. The inspectors noted that following the review of operating experience the licensee failed to consistently incorporate the knowledge into procedural guidance and design calculations.

In February 2010, the inspectors found that several work groups at San Onofre did not feel free to raise safety concerns

without fear of retaliation. This was documented in NRC Inspection Report 050000361; 05000362/2009009 dated March 2, 2010, and in the NRC's Chilling Effect Letter dated March 2, 2010.

Inspection Report# : 2010006 *(pdf)*

Significance: G Jun 17, 2010
Identified By: NRC
Item Type: FIN Finding
Failure to meet action plan for substantive crosscutting issues
The inspectors identified a Green finding associated with the licensee's failure to meet the actions described to the NRC in letters dated April 21, 2009, and October 29 and 30, 2009, addressing corrective actions to improve site performance in the areas of human performance and problem identification and resolution. Specifically, 16 actions were not implemented on time and a number of actions were modified from what was previously described, all prior to informing the NRC. These findings were documented in Nuclear Notification 200848923.

The inspectors determined that the licensee's failure to perform actions as documented in its plan to the NRC was more than minor because if left uncorrected could result in a more significant safety concern. Using Inspection Manual Chapter 0609, Appendix M, this finding was reviewed by NRC management and was determined to be of very low safety significance (Green). This finding has a crosscutting aspect in the area of human performance in the work practices component because the licensee did not ensure management oversight of work activities. [H.4(c)] (Section 4OA2.5m)
Inspection Report# : 2010006 *(pdf)*

Last modified : June 07, 2011