

San Onofre 3

3Q/2010 Plant Inspection Findings

Initiating Events

Significance:  Jun 17, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Control room operators failure to adhere to conduct of operations procedural requirements

The inspectors identified a noncited violation of Technical Specification 5.5.1.1.a involving the failure of control room operators to follow San Onofre Procedure SO123-0-A1, "Conduct of Operations." These included failures to: implement alarm response procedure place-keeping, announce alarms to the control room supervisor, stop conversations when an alarm annunciated and cleared, perform three-way communication during pre-job briefing, review the summarize, anticipate, foresee, evaluate and review questions during a pre-job brief, review the prerequisites of a procedure prior to use, and remain cognitive of the re-activity change evolution by a control room supervisor. This issue was entered into the licensee's corrective action program as Nuclear Notification 200871332, and operations management immediately began actions to institute a recovery plan to improve operator performance.

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 the licensee did not ensure supervisory and management oversight of work activities. [H.4(c)]

Inspection Report# : [2010006](#) (*pdf*)

Significance:  Jun 17, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to secure loose items in the electrical switchyard

The inspectors identified a noncited 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:  Apr 28, 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:  Apr 28, 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:  Jan 22, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow a Level 1 Quality Assurance Program Affecting Human Performance Procedure

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of training personnel to ensure activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Specifically, between September 27, 2009 and November 17, 2009, training personnel failed to follow Level 1 Quality Assurance Program Affecting Procedure SO123 XXI-1.11.23, "Human Performance Training Program Description," Revision 0, to ensure workers received human performance training before hands-on work was performed in the plant, which resulted in over 80 employees not receiving human performance training and contributed to at least two human performance events. This finding was entered into the licensee's corrective action program as Nuclear Notification 200670169.

The finding is greater than minor because, if left uncorrected, the failure to follow procedures to provide human performance training, would have the potential to lead to more significant safety concerns as is evidenced by the two human performance events that occurred by untrained individuals. This finding is associated with the Initiating Events Cornerstone. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding is determined to have very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee failed to 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# : [2009009](#) (pdf)

Mitigating Systems

Significance:  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:  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 40A2).

Inspection Report# : [2010004](#) (pdf)

Significance:  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:  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:  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:  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)

Significance:  May 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Unavailability Time for Component Cooling Water Incorrectly Counted

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)].

Inspection Report# : [2010003](#) (pdf)

Significance:  May 19, 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:  May 18, 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:  Jan 22, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Written Procedures Covered in Regulatory Guide 1.33

The inspectors identified a non-cited violation of Technical Specification 5.5.1, "Procedures," for the failure of procedure writer personnel to maintain written procedures covered in Regulatory Guide 1.33. Specifically, from initial plant startup of Units 2 and 3 to November 2009, no process requirement or procedure existed to identify procedures that required technical changes so that those procedures could be suspended or put an administrative hold until the required changes were made. This resulted in a quality controlled procedure requiring technical changes available to use on a safety-related system without flagging the required changes. This finding was entered into the licensee’s

corrective action program as Nuclear Notification 200671179.

The finding is greater than minor because, if left uncorrected, the failure to maintain and control procedures would have the potential to lead to a more significant safety concern by having technically inaccurate procedures being used on safety-related systems. This finding is associated with the Mitigating Systems Cornerstone. Using Manual Chapter 0609.04, "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 a 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 cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program because problems were not thoroughly evaluated such that the resolutions addressed the causes and extent of conditions. This includes properly classifying and prioritizing conditions adverse to quality [P.1(c)].

Inspection Report# : [2009009](#) (*pdf*)

Significance:  Jan 21, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Appropriately Scope Auxiliary Feedwater Pump Trench Eductors in the Maintenance Rule Monitoring Program

The inspectors identified a noncited violation of 10 CFR 50.65(b)(2)(ii) for the licensee's failure to appropriately scope the steam driven auxiliary feedwater pump trench eductor in the maintenance rule monitoring program. Specifically, from the inception of the facilities monitoring program through March 2010, the licensee failed to properly scope the steam driven auxiliary feedwater pump trench educator. The eductors prevent water from accumulating in the trench because water in contact with the pump's steam supply piping would cause condensation of the steam in the pipe. Condensation would cause the turbine to over speed, which would render the pump incapable of performing its specified safety function. This issue was entered into the licensee's corrective action program as Nuclear Notification NN 200765185.

The finding is greater than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and directly affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding: (1) is not a design or qualification issue confirmed not to result in a loss of operability or functionality; (2) did not represent an actual loss of safety function of the system or train; (3) did not result in the loss of one or more trains of nontechnical specification equipment; and (4) did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that since the scoping of the systems had occurred more than 2 years in the past, and the opportunity to reevaluate system scoping had not occurred recently, that the finding did not represent current plant performance and therefore did not have a crosscutting aspect associated with it.

Inspection Report# : [2010002](#) (*pdf*)

Significance:  Jan 21, 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:  Jan 04, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Enter Conditions Adverse to Quality into the Corrective Action Program

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of licensee personnel to follow procedure SO123-XV-50.CAP-1, "Writing Nuclear Notifications for Problem Identification and Resolution," Revision 2, and enter conditions adverse to quality into the corrective action program. Specifically, between January 4 and March 14, 2010, the inspectors identified multiple instances, including two programs, where licensee personnel were aware of the existence of conditions adverse to quality, but failed to appropriately enter them into the corrective action program without being prompted by the inspectors. This issue was entered into the licensee's corrective action program as Nuclear Notifications NNs 200778816 and 200780926.

The finding is greater than minor because it was similar to more than minor example 3.j in NRC Manual Chapter 0612, Appendix E, "Examples of Minor Issues," in that programmatic deficiencies were identified associated with this issue that would have the potential to lead to more significant safety concerns if left uncorrected. Specifically, contractor and licensee personnel's failure to enter conditions adverse to quality into the station corrective action program could result in the licensee's failure to recognize that risk significant equipment is in a degraded or nonconforming condition, and as such, may not be able to perform its specified safety function. The finding is associated with the Mitigating Systems Cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding: (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 problem identification and resolution associated with the corrective action program because the licensee failed to implement a corrective action program with a low threshold for identifying issues. This also includes identifying such issues completely, accurately, and in a timely manner commensurate with their safety significance [P.1(a)].

Inspection Report# : [2010002](#) (*pdf*)

Significance:  Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Design Control for Safety-Related Electrical Connections

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," with thirteen examples that occurred between June 2005 and July 2008, for the failure of the licensee to ensure that appropriate measures were in place to assure that systems specified in the design basis were maintained in a configuration which provided a reasonable assurance of operability during design basis events. This finding was entered into the licensee's corrective action program as Action Requests ARs 050601315, 050601324, 060101159, 070200254, 200066209, and Nuclear Notifications NNs 200089167, 200058371, 200100730, and Corrective Action Order 800126624.

The finding is greater 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. In accordance with Manual Chapter 0609, Attachment 4, Table 4a, Question 5, a Phase 3 analysis was required because the finding

screened as potentially risk significant due to a seismic, flooding, or severe weather initiating event. In accordance with Inspection Manual Chapter 0609, Appendix A, the analyst determined that the conditions documented in Table 1 of this inspection report should be evaluated as a single inspection finding because they resulted from a common cause. As a combined result of the evaluations performed in the Phase 3 analysis, the analyst determined that this finding was of very low safety significance. The finding has a crosscutting aspect in the area of human performance associated with resources for the failure to maintain complete, accurate, and up-to-date design documentation, procedures, and work packages [H.2(c)] (Section 40A5).

Inspection Report# : [2009005](#) (*pdf*)

Significance:  Dec 20, 2009

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:  Dec 17, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Enter Operating Experience into Corrective Action Program for Timely Evaluation

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to properly implement procedure requirements to ensure that applicable risk significant operating experience was entered into the corrective action program for timely evaluation. Specifically, on December 17, 2009, the operating experience review committee failed to properly implement the requirements of procedure SO23-XV-40, "Sharing Industry Information," Revision 1. An industry operating experience report review determined the operating experience was not applicable and was distributed as information only; not requiring any action. The same industry operating experience was later determined to be applicable by the probabilistic risk assessment group, and interim compensatory measures were initiated on February 10, 2010, to address the issues. This issue was entered into the licensee's corrective action program as Nuclear Notifications NN 200805879.

The finding is greater 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. 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 human performance associated with decision-making because the operating experience review committee did not use a systematic process when making a safety significant decision, to ensure safety is maintained and obtaining interdisciplinary inputs and reviews on risk-significant decisions [H.1(a)].

Inspection Report# : [2010002](#) (pdf)

Significance:  Nov 25, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow the Operability Determination Process

The inspectors identified three examples of 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 procedures and adequately evaluate degraded conditions to support operability decision making. Specifically, on October 29, 2009, engineering personnel failed to adequately evaluate the operability of the Unit 3 containment emergency sump when an unanalyzed styrofoam material was identified, which had not been previously analyzed for impact to the containment emergency sump. Additionally, on November 17 and December 18, 2009, operations and engineering personnel failed to adequately evaluate the operability of emergency diesel generator train B when a lube oil leak was identified on a flexible hose for the dc auxiliary turbo pump. And finally, on December 19, 2009, operations and engineering personnel inappropriately applied Code Case N 513 2 to justify the operability of the emergency core cooling system train A, in that, the flaw geometry was only assumed and not characterized by volumetric inspection methods or by physical measurements. This finding was entered into the licensee's corrective action program as Nuclear Notifications NNs 200673198, 200699833, and 200718673.

The finding is greater than minor because the failure to perform timely and adequate evaluations of degraded, nonconforming, and unanalyzed conditions for operability, if left uncorrected, would have the potential to lead to a more significant safety concern. The finding 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. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding did not result in a loss of safety function for greater than the technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of problem identification and resolution associated with corrective action program because operations and engineering personnel failed to thoroughly evaluate problems such that the resolutions addressed the cause and extent of condition. This includes properly classifying, prioritizing, and evaluating for operability conditions adverse to quality [P.1(c)] (Section 1R15).

Inspection Report# : [2009005](#) (pdf)

Significance:  Oct 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Correct Problems with Emergency Diesel Generator Train A

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to take adequate corrective actions for conditions adverse to quality associated with Unit 3 emergency diesel generator train A. Specifically, on June 13, 2009, following an emergency diesel generator failure on June 6, 2009, immediate corrective actions were inadequately implemented when improperly configured annunciator power supplies were installed in the emergency diesel generator train A annunciator system. This configuration problem contributed to rapid capacitor degradation as a result of the increased heat from a resistor, which ultimately caused the emergency diesel generator failure to start on December 12, 2009. This finding was entered into the licensee's corrective action program as Nuclear Notification NN 200756001.

The finding is greater than minor because the failure to correct conditions adverse to quality for the emergency diesel generators 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. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the inspectors determined that this finding represented an actual loss of safety function of emergency diesel generator train for greater than the technical specification allowed outage time. This required that a Phase 2 estimation be completed. Because the Phase 2 analysis concluded that the finding was potentially greater than green, a Phase 3 analysis was completed by a regional senior reactor analyst. The San Onofre SPAR model indicated that the delta core damage frequency for emergency diesel generator train A being non-functional was 2.0E 6/yr. For an exposure time of 7 days, this resulted in an incremental core damage frequency of 3.8E-8 for this finding, considering internal events only. The dominant sequence was a station blackout sequence with failure of the diesels, failure to cross-tie power from the other unit, failure to recover either onsite or offsite power, failure of batteries at 4 hours, and a failure to manually control the turbine-driven auxiliary feedwater pump after battery depletion. The senior reactor analyst determined qualitatively that the contribution of external events would not significantly add to this result; therefore, the finding is determined to be of very low safety significance. This finding has a crosscutting aspect in the area of human performance associated with resources because the licensee failed to provide adequate instructions to perform activities affecting quality [H.2(c)] (Section 1R12).

Inspection Report# : [2009005](#) (pdf)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance:  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(c)]

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: SL-IV Jun 17, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to report conditions that could have prevented fulfillment of safety function.

The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.73, "Licensee Event Report System," in which the licensee failed to submit a licensee event report within 60 days following discovery of an event meeting the reportability criteria. On January 26, 2010, the valve which isolates non-seismic piping from Condensate Storage Tank T-120 (isolation valve 2HV5715) failed its in-service stroke test when the hand wheel stem snapped after a leveraging device was used in an attempt to close the valve during its two year inservice test. This isolation valve 2HV5715 must be closed within 90 minutes of an Operating Basis Earthquake in order to prevent the loss of condensate storage tank T-120 water inventory from a line break in the non-seismic portion of the condensate system. Without the ability to close 2HV5715, tank T-120 was not be operable because the tank inventory is needed for all three AFW pumps to complete their mission time. The licensee did not report an event or condition that could have prevented the fulfillment of the safety function of the auxiliary feed water system that is needed to shutdown the reactor and maintain it in a safe shutdown condition, remove residual heat, or mitigate the consequences of an accident. In addition, this was a condition prohibited by Technical Specification 3.7.6. This finding was entered into the licensee's corrective action program as Nuclear Notification NN 200888616, and the licensee was taking actions to send an LER to the NRC for this event.

The inspectors reviewed this issue in accordance with Inspection Manual Chapter 0612 and the NRC Enforcement Manual. Through this review, the inspectors determined that traditional enforcement was applicable to this issue because the NRC's regulatory ability was affected. Specifically, the NRC relies on the licensee to identify and report conditions or events meeting the criteria specified in regulations in order to perform its regulatory function, and when this is not done, the regulatory function is impacted. 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 non-cited violation consistent with the NRC Enforcement Policy. 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 licensee failed to appropriately evaluate corrective maintenance as a basis for past operability [P.1(c)]

Inspection Report# : [2010006](#) (pdf)

Significance:  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 areas of human performance. [H.4 (c)]

Inspection Report# : [2010006](#) (pdf)

Significance: SL-IV Dec 23, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Obtain a License Amendment for a Technical Specification Bases Change

The inspectors identified a noncited violation of 10 CFR 50.59, "Changes, Test, and Experiments," for the failure of licensing personnel to obtain a technical specification license amendment for a change made to the technical

specification bases concerning the emergency chilled water system. Specifically, in 1996, licensing personnel implemented a technical specification bases change for Limiting Condition for Operation 3.7.10, "Emergency Chilled Water," which changed the intent and application of the technical specification, and added wording which allowed a period of time for required support systems to be inoperable without declaring the emergency chillers inoperable. This issue was entered into the licensee's corrective action program as Nuclear Notifications NNs 200747320 and 200758329.

The finding is greater than minor because the failure to follow the requirements of 10 CFR 50.59 and receive prior NRC approval for changes in licensed actions impacted the NRC's regulatory ability. The inspectors reviewed this issue in accordance with Inspection Manual Chapter 0612 and the NRC Enforcement Manual. Through this review, the inspectors determined that traditional enforcement was applicable to this issue because the NRC's regulatory ability was affected. 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. Since the bases change was made in 1996, the inspectors determined that this was not reflective of current licensee performance and therefore did not have a crosscutting aspect associated with it.

Inspection Report# : [2010002](#) (*pdf*)

Last modified : November 29, 2010