

# San Onofre 3

## 4Q/2009 Plant Inspection Findings

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### Initiating Events

**Significance:**  Apr 16, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Assess and Manage Risk for Electrical Switchyard Impacting Maintenance**

The inspectors identified a noncited violation of 10 CFR 50.65(a)(4) for the failure of work control and operations personnel to include maintenance activities in or near the electrical switchyard and offsite power components in the on-line risk assessment. This finding was entered into the licensee's corrective action program as Nuclear Notification 200402733.

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. This finding is 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 reperform 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 1E-6 and 1E-7, respectively. This finding has a crosscutting aspect in the area of human performance associated with resources because the licensee did not ensure that procedures and processes were adequate to properly assess and manage the risk associated with on-line maintenance [H.2(c)]

Inspection Report# : [2009003](#) (*pdf*)

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### Mitigating Systems

**Significance:**  Jun 05, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Maintain Written Procedures Covered in Regulatory Guide 1.33**

The inspectors identified 54 examples of a noncited violation of Technical Specification 5.5.1, "Procedures," for the failure of operations and maintenance personnel to maintain written procedures covered in Regulatory Guide 1.33. Specifically, from plant startup to June 2009, no process requirement or procedure existed to suspend or put an administrative hold on a procedure or work order when a technical change is required for the procedure. This resulted in 54 uncontrolled procedures and work instructions available to use on safety related systems without flagging the required changes. This finding was entered into the licensee's corrective action program as Nuclear Notification 200453351.

The finding is greater than minor because, if left uncorrected, the failure to maintain and control operations and maintenance procedures could lead to a more significant safety concern by having technically inaccurate procedures being used on safety-related systems. 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 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 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# : [2009003](#) (pdf)

**Significance:**  Jun 02, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Evaluate the Impact of Temporary Scaffolding on Installed Fire Protection Systems**

The inspectors identified a noncited violation of License Condition 2.C.(14), "Fire Protection," for the failure of licensee personnel to evaluate scaffolding for its impact on fire protection systems. Specifically, the licensee failed either (1) to demonstrate that obstructed sprinkler heads in the Unit 2 emergency diesel generator building train B, the Unit 3 emergency diesel generator building train A, and the Unit 2 saltwater cooling pump room were operable; or (2) to generate a fire protection impairment and establish an hourly firewatch for inoperable sprinkler heads in the Unit 2 emergency diesel generator building train B, the Unit 3 emergency diesel generator building train A, and the Unit 2 saltwater cooling pump room. This finding was entered into the licensee's corrective action program as Nuclear Notification 200449046.

This finding is greater than minor because the identified programmatic deficiencies could lead to a more significant safety concern if left uncorrected. This finding is associated with the Mitigating Systems Cornerstone. Using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," Attachment 2, this finding was determined to have a LOW degradation rating because fewer than 10 percent of the sprinkler heads were nonfunctional, there was a functional sprinkler head within 10 feet of the combustibles of concern, and the system was nominally code compliant. Therefore, this finding was determined to be of very low safety significance. This finding has a crosscutting aspect in area of human performance associated with work practices because the licensee failed to ensure personnel work practices support human performance. Specifically, the licensee failed to effectively communicate human error prevention techniques such as proper documentation of activities and failed to ensure personnel do not proceed in the face of uncertainty [H.4(a)].

Inspection Report# : [2009003](#) (pdf)

**Significance:**  Jun 02, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Specify Appropriate Requirements in Procurement Documents**

A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion IV, "Procurement Document Control," was identified for the failure of procurement engineering personnel to include requirements necessary to assure adequate quality in a safety-related component. Specifically, on June 2, 2006, the procurement document did not specify limits on the amount of moisture allowed in the hydraulic fluid used during refurbishment of hydraulic dump valves at an off-site vendor, resulting in a main feedwater isolation valve and a main steam isolation valve being inoperable for greater than their technical specification allowed outage time. These occurrences were documented in Licensee Event Report 2007-004-00 and Unit 2 was shutdown in order to determine the extent of condition. The licensee determined these valve failures were caused by corrosion due to the introduction of moisture-contaminated Fyrquel® hydraulic fluid at the vendor facility. The procurement documents used to contract the replacement and refurbishment services did not include any moisture limits, nor did the vendor documents which were reviewed and approved by the licensee, although these limits were specified in both maintenance and operations procedures at the time. This finding was entered into the licensee's corrective action program as Action Request AR 071000901.

The failure to include moisture limits in the procurement documents in order to maintain the quality of a safety-related component was a performance deficiency. The finding is more than minor because it is associated with the equipment performance 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. The inspectors evaluated the issue using the Significance Determination Process Phase 1 Screening Worksheet for the Initiating Events, Mitigating Systems, and Barriers Cornerstones provided in Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors determined that this finding represented a loss of safety function of a single train for greater than the technical specification allowed outage time. This required that a Phase 2 estimation be completed. Because the Phase 2 risk-informed notebook did not include appropriate

targets for the equipment conditions at the time of discovery, the senior reactor analyst determined that a Phase 3 analysis was required. The analyst calculated a total ?CDF of  $1.5 \times 10^{-8}$ , therefore this finding is of very low safety significance. A crosscutting aspect is not assigned since the cause of the performance deficiency is not indicative of current performance (Section 4OA3).

Inspection Report# : [2009004](#) (pdf)

**Significance:**  May 14, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Follow Corrective Action Process for an Inadequate Postmaintenance Test**

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 follow corrective action program procedures to address deficiencies associated with postmaintenance testing. Specifically, between April 20 and May 14, 2009, the licensee failed to follow Procedure SO123 XX 1 ISS2, "Notification Initiation and Processing," Revision 23, to report a problem associated with the adequacy of postmaintenance testing until prompted by the inspectors. Emergency chiller ME336 was restored to operable on April 19, following a maintenance evolution, then declared inoperable on April 20, approximately 8 hours later when operations personnel identified an operability issue associated with the equipment configuration. However, licensee personnel failed to recognize that the postmaintenance testing may have been inadequate, in that, emergency chiller ME336 was returned to service in an inoperable condition, until prompted by the inspectors on several occasions between April 20 and May 13. This finding was entered into the licensee's corrective action program as Nuclear Notification NN 200427700.

The failure to follow corrective action program procedures to identify and correct a condition adverse to quality was a performance deficiency. The finding is greater than minor because the failure to identify and correct deficiencies associated with postmaintenance testing would have the potential to lead to a more significant safety concern if left uncorrected. The finding is associated with the mitigating systems cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding did not affect both trains of any single mitigating system or represent an actual loss of a safety function of a single train for greater than its technical specification allowed outage time. The finding has a crosscutting aspect in the area of problem identification and resolution associated with corrective action program because the licensee failed to identify and correct deficiencies associated with inadequate postmaintenance testing at a threshold commensurate with the safety significance [P.1(a)].

Inspection Report# : [2009004](#) (pdf)

**Significance:**  Apr 17, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Improper Controls for Electrical Test Equipment**

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of maintenance planning personnel to provide adequate work instructions to control the connection of electrical monitoring devices on operable plant equipment. Specifically, the work instructions failed to require verification and functional testing after installation and removal, compliance with seismic requirements, and controls to ensure removal within the allowed time limit for a temporary installation. This finding was entered into the licensee's corrective action program as Nuclear Notification 200396106.

The finding is greater than minor because the improper controls for installation of test equipment is associated with the design control attribute of the Mitigating Systems Cornerstone and adversely 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 affect both trains of any single mitigating system or represent an actual loss of a safety function. The finding has a crosscutting aspect in the area of human performance associated with work practices because maintenance planning personnel failed to follow procedures to develop adequate work instructions for safety-related maintenance [H.4(b)].

Inspection Report# : [2009003](#) (pdf)

**Significance:**  Apr 13, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**Risk Assessment Performed Using Risk Assessment Tools with Known Errors**

The inspectors identified a noncited violation of 10 CFR 50.65(a)(4) involving the failure of work control and operations personnel to assess and manage the increase in risk associated with planned maintenance activities. Specifically, the risk assessment for planned maintenance on emergency chiller ME336 was performed using risk assessment tools that had known errors that had the potential to change the outcome of the assessment. This finding was entered into the licensee's corrective action program as Nuclear Notification 200389219.

This finding is greater than minor because the risk assessment had known errors that had the potential to change the outcome of the assessment. This finding is associated with the Mitigating Systems 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 reperform 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 1E-6 and 1E-7, respectively. The finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program because engineering personnel failed to take appropriate corrective actions to address identified errors in the risk assessment tools in a timely manner [P.1(d)].

Inspection Report# : [2009003](#) (pdf)

**Significance:**  Mar 28, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Establish Adequate Scaffolding Erection Procedures**

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 establish adequate procedures for scaffolding erection in safety-related areas. Specifically, Procedure SO123-I-1.34 required a minimum separation distance of 1 inch from safety-related equipment which only considered the seismic displacements of scaffolding and not other movements, such as thermal expansion of piping, equipment vibrations, or component operation. Insufficient scaffolding to component separation could result in interactions that adversely affect the safety functions of safety-related equipment. This finding was entered into the licensee's corrective action program as Nuclear Notification 200366460.

The finding is greater than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. The inspectors concluded this finding was associated with the Mitigating Systems Cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding did not affect both trains of any single mitigating system or represent an actual loss of a safety function. A crosscutting aspect is not assigned since the cause of the performance deficiency is not indicative of current performance.

Inspection Report# : [2009003](#) (pdf)

**Significance:**  Mar 17, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Properly Inspect Scaffolding in Safety-Related Areas**

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure of maintenance personnel to properly install and inspect scaffolding in safety-related areas in accordance with written procedural requirements. Four instances were found where the minimum separation distance between a scaffold and safety-related components was less than the minimum allowed by procedure and an approved engineering evaluation to justify the deviation was not performed. The licensee evaluated the scaffolds and modified them as necessary. This finding was entered into the licensee's corrective action program as Nuclear Notification 200356209.

The finding is greater than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. The inspectors concluded this finding was associated with the Mitigation Systems Cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance because the finding did not affect both trains of any single mitigating system or represent an actual loss of a safety function. This finding has a crosscutting aspect in the area of human performance associated with work practices because the licensee did not utilize appropriate human performance techniques to ensure that scaffold construction was performed safely [H.4(a)] (Section 1R18).

Inspection Report# : [2009002](#) (*pdf*)

**Significance:**  Mar 11, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Implement Corrective Actions to Prevent Repeat Safety-Related 480V Breaker Failures**

A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to implement timely corrective actions to preclude repetition of a significant condition adverse to quality involving the failure of a safety-related 480 volt circuit breaker. Specifically, the licensee did not properly evaluate the extent of condition for other risk significant breakers and promptly implement corrective actions following a previous failure of a safety-related 480 volt circuit breaker in March 2005 to preclude repetition of another safety-related 480 volt circuit breaker failure on March 28, 2009. This finding was entered into the licensee's corrective action program as Nuclear Notification 200378783.

This 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 of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Significance Determination Process Phase 1 Screening Worksheet for the Initiating Events, Mitigating Systems, and Barriers Cornerstones provided in Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors determined that this finding represented a loss of safety function of a single train for greater than its technical specification allowed outage time. This required that a Phase 2 estimate be completed using Manual Chapter 0609, "Significance Determination Process," Appendix A, "Determining the Significance of Reactor Inspection Findings for At Power Situations," and the Phase 2 Worksheets for San Onofre Nuclear Generation Station. The inspectors assumed that the performance deficiency affected the risk of operating the plant from March 11, 2009, when the last successful surveillance was completed through April 1, 2009, when the breaker was restored to a functional status. As a result, in accordance with Appendix A, Attachment 1, step 2.1.2, "Determine the Appropriate Exposure Time," the inspectors selected an exposure period of 3-30 days. Using the Risk Informed Inspection Notebook for SONGS Units 2 and 3, Revision 2.1a, the inspectors selected "One Containment Fan Cooling Unit," as the appropriate target for the subject finding in the presolved table. Based on the results of the Phase 2 analysis, the finding is determined to have very low safety significance. This finding has a crosscutting aspect in the area of human performance associated with decision-making because safety-significant decisions were not reviewed to verify the validity of the underlying assumptions and identify possible unintended consequences [H.1(b)].

Inspection Report# : [2009003](#) (*pdf*)

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## **Barrier Integrity**

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## **Emergency Preparedness**

**Significance:** SL-IV Jul 13, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Notify the NRC within Required Timeframe**

A self-revealing noncited violation of 10 CFR 50.72 was identified for the failure to notify the NRC in the time

required after computer engineering personnel discovered an event requiring an eight hour notification. Specifically, on July 13, 2009, Nuclear Regulatory Affairs personnel failed to notify the NRC, within 8 hours after the discovery of a loss of the ability to activate 10 Community Alert Sirens located on the Camp Pendleton Marine Corp Base. The NRC was notified of the loss of the ability to activate the Community Alert Sirens, approximately 24 hours late, on July 14, 2009. This finding was entered in the licensee's corrective action program as Nuclear Notification NN 200501125.

The failure to notify the NRC of an event in the time required by 10 CFR 50.72 was a performance deficiency. The finding was determined to be applicable to traditional enforcement because the NRC's ability to perform its regulatory function was potentially impacted by the licensee's failure to report the event. The finding is associated with the emergency preparedness cornerstone. The finding was determined to be a Severity Level IV violation in accordance with Section D of Supplement I of the NRC Enforcement Policy. The finding is not suitable for evaluation using the significance determination process, but has been reviewed by NRC management and is determined to be a finding of very low safety significance. The finding has a crosscutting aspect in the area of problem identification and resolution associated with corrective action program because computer engineering personnel failed implement the corrective action program at an appropriate threshold for identified issues [P.1(a)].

Inspection Report# : [2009004](#) (*pdf*)

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## Occupational Radiation Safety

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## Public Radiation Safety

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## 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.

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## Miscellaneous

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