

# San Onofre 2

## 4Q/2008 Plant Inspection Findings

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### Initiating Events

**Significance:**  Dec 31, 2008

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Inadequate Inspection of Stator Water Discharge Check Valve**

A self-revealing finding was identified for the failure to perform an adequate inspection of a main generator stator water pump discharge check valve in accordance with maintenance procedures. The inadequate inspection allowed an unrecognized degraded condition to exist that resulted in the main generator tripping from a "Rectifier Low Flow," signal and a subsequent reactor trip. This finding was entered into the licensee's corrective action program as Nuclear Notification 200006446.

This finding is more than minor because it is associated with the human performance attribute of the initiating events cornerstone and affects the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Phase 1 of Manual Chapter 0609, Attachment 4, "Initial Screening and Characterization of Findings," the finding is determined to have very low safety significance because the issue 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 crosscutting aspect in the area of problem identification and resolution associated with corrective action program because maintenance personnel did not perform the required inspections with a low enough threshold for identifying issues. Consequently, the licensee did not identify a degraded condition completely, accurately, and in a timely manner commensurate with the safety significance of the issue [P.1(a)].

Inspection Report# : [2008005](#) (*pdf*)

**Significance:**  Sep 11, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Corrective Actions for Reactivity Events**

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure of operations management, operations training, and engineering to ensure that conditions adverse to quality are promptly identified and corrected. Specifically, multiple reactivity excursions occurred in the plant over the past two years, where corrective actions have been ineffective at addressing blended flow evolutions. The licensee has entered this into their corrective action program as Notifications NN 200062659 (addresses procedure change) and NN 200006366 (addresses common cause evaluation).

The finding is more than minor because it is associated with the initiating events cornerstone (human performance attribute) and affects the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge the critical safety functions during shutdown as well as power operations. If left uncorrected, the conditions would continue to contribute to additional operator errors or significantly impact the operator's ability to perform blended flow evolutions. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigating equipment or functions will not be available. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee did not thoroughly evaluate problems such that resolutions address causes and extent of condition [P.1(c)] (Section 4OA2).

Inspection Report# : [2008010](#) (*pdf*)

**G****Significance:** Aug 26, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Follow Procedure to Move Fuel in the Spent Fuel Pool**

Two examples of a self-revealing noncited violation of 10 CFR 50, Appendix B, Criterion V, were identified for the failure of engineering personnel to follow procedures for the movement of nuclear fuel in the spent fuel pool. Specifically, on July 3, 2008, and again on August 26, 2008, spent fuel assemblies were placed into storage locations that were different than the evaluated and approved locations specified on Procedure SO23-X-7.2, Attachment 4. This finding was entered into the licensee's corrective action program as Nuclear Notification 200116680.

The finding is greater than minor because it would become a more significant safety concern if left uncorrected in that nuclear fuel could be inadvertently placed in an unanalyzed location. Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," was used since the Significance Determination Process methods and tools were not adequate to determine the significance of the finding. This finding affects the initiating events cornerstone and is determined to have very low safety significance by NRC management review because the incorrect fuel storage locations were determined to be acceptable storage locations for the fuel assemblies in question. This finding has a crosscutting aspect in the area of human performance associated with work practices because engineering personnel failed to use human error prevention techniques commensurate with the risk of the assigned task, such that work activities were performed safely [H.4(a)].

Inspection Report# : [2008004](#) (*pdf*)**G****Significance:** Jun 03, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Properly Monitor and Execute a Unit 2 Reactivity Manipulation.**

A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V, (Procedures) was identified for the failure of operations personnel to understand, monitor and perform a Unit 2 reactivity manipulation in accordance with procedural requirements. This failure contributed to the overfeeding of both steam generators as well as the inadvertent addition of positive reactivity during a planned startup. Specifically, on June 3, 2008, operations personnel failed to follow Procedure SO123-0-A1, "Conduct of Operations," Revision 14, step 6.5.2.7, which requires, in part, that all reactivity manipulations are to be identified and fully understood and shall be closely monitored to verify the expected magnitude, direction, and effects are realized. This finding was entered into the licensee's corrective action program as Action Request 0080600073.

The finding is greater than minor because it is associated with the human performance attribute of the Initiating Events Cornerstone and affects the cornerstone objective to limit the likelihood of events that upset plant stability. Using the 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 mitigating equipment or functions would not be available. The finding has a crosscutting aspect in the area of human performance associated with work practices because operations personnel proceeded in the face of uncertainty or unexpected circumstances [H.4(a)].

Inspection Report# : [2008003](#) (*pdf*)**G****Significance:** Apr 10, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Implement Procedural Requirements for Planned Unit 2 Power Reduction.**

A self-revealing noncited violation of Technical Specification 5.5.1.1 was identified associated with the failure to implement procedural guidance to ensure a Unit 2 power reduction was properly performed. Lack of supervisory oversight resulted in an uncoordinated power reduction, resulting in a steam generator low pressure pre-trip annunciator. Specifically, on April 10, 2008, operations personnel failed to implement appropriate procedures to

properly perform a power reduction from full power to 65 percent in support of a planned repair of a main feedwater pump. This finding was entered into the licensee's corrective action program as Action Request 80400544.

The finding is greater than minor because it is associated with the human performance attribute of the Initiating Events Cornerstone and affects the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge the critical safety functions during shutdown as well as power operations. 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 mitigating equipment or functions would not be available. The finding has a crosscutting aspect in the area of human performance associated with work practices because supervisory operations personnel did not ensure that the work activity was properly supervised to ensure the support of nuclear safety [H.4(c)].

Inspection Report# : [2008003](#) (*pdf*)

**Significance:**  Mar 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Implementation of Risk Assessment and Risk Management Actions for Emergent Work Activities**

The team identified a Green noncited violation of 10 CFR Part 50.65(a)(4) involving the failure to adequately assess the increase in risk and effectively implement risk mitigation actions for emergent maintenance activities.

Specifically, on March 25 and March 26, 2008, the licensee failed to consider the risk associated with the increased likelihood of an initiating event during emergent work on energized safety-related 125 Vdc battery breakers. This issue was entered into the licensee's corrective action program as Nuclear Notification 200196248.

This finding is greater than minor because the licensee's risk assessment failed to consider that the maintenance activities on the 125 Vdc breakers could increase the likelihood of initiating events. The finding is of very low safety significance based on a senior reactor analyst bounding risk estimation that assuming the performance deficiency resulted in operating the plant in an elevated risk configuration during emergent maintenance activities for a 24-hour period. The finding has a crosscutting aspect in the area of human performance associated with resources for the failure to provide appropriate risk management tools by maintaining complete, accurate, and up-to-date procedures [H.2(c)] (Sections 2.1.4 and 3.4).

Inspection Report# : [2008013](#) (*pdf*)

**Significance:**  Mar 24, 2008

Identified By: Self-Revealing

Item Type: FIN Finding

### **Unit 2 Main Feedwater Pump Trip Results in Inadvertent Power Reduction**

The inspectors identified a Green self-revealing finding for the failure of maintenance personnel to adequately adjust bearing oil pressure to a Unit 2 main feedwater pump. This caused the main feedwater pump to trip, which subsequently caused an unplanned power reduction. The overhaul procedure used by the machinists, SO23-I-8.165, "Feed Pump Drive Turbine Internal, Bearing, and Valve Inspection," Revision 11, only stated to "adjust pressures as required." This finding was entered into the licensee's corrective action program as AR 080101431.

The finding was more than minor because it affects the Initiating Events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using Manual Chapter 609, Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance (Green) 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 had a crosscutting aspect in the area of human performance associated with the work practices (H.4(a)) in that human error prevention techniques, such as proper documentation, were not implemented, and that maintenance personnel proceeded with the work activity when faced with uncertainty.

Inspection Report# : [2008002](#) (*pdf*)

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## Mitigating Systems

**Significance:**  Oct 22, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Inadequate Maintenance Procedures Results in a Ground on the Safety-Related 125 VDC Distribution System**

A self-revealing noncited violation of Technical Specification 5.5.1, "Procedures," was identified for the failure of maintenance personnel to have adequate procedures. Specifically, on January 24, 2008, during maintenance on a flood detector switch, an inadequate procedure resulted in an inadvertent electrical ground on the safety-related Unit 2 electrical distribution Bus 2D2. This issue was entered into the licensee's corrective action program as Nuclear Notification 200177574. The licensee plans to revise the maintenance procedure and train maintenance personnel.

The performance deficiency associated with this finding involved the failure of maintenance personnel to ensure written guidance was provided in documented instructions to ensure nicked wires did not cause electrical grounds during maintenance activities. The finding was more than minor because it affected the procedure quality attribute of the mitigating systems cornerstone, and affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to have a very low safety significance because it did not result in an actual loss of system safety function, did not result in a loss of a single train of safety equipment for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating events. The finding had a cross-cutting aspect in the area of human performance associated with work control because the work instruction was not planned appropriately to address the human-system interface and ensure grounds were not caused by maintenance activities [H.3(a)].

Inspection Report# : [2008012](#) (*pdf*)

**Significance:**  Oct 22, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Auxiliary Feedwater Pump Room Heat Load Analysis**

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure of engineering personnel to ensure the auxiliary feedwater pump room heat load calculation was adequate. Specifically, since initial plant construction, engineering personnel failed to consider the impact to the auxiliary feedwater pump room's heat load design basis calculation for the most limiting scenario, in which all auxiliary feedwater pumps in the room have started and are running with only one emergency room cooler available. This issue was entered into the licensee's corrective action program as Nuclear Notification 200149442. The licensee plans to perform a revised auxiliary feedwater pump room heat load analysis.

The performance deficiency associated with this finding was the failure of engineering personnel to include the proper heat load scenarios and use of realistic assumptions for a design basis calculation. The finding was more than minor because it affected the design control attribute of the mitigating systems cornerstone and affected the objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have a very low safety significance because it did not result in an actual loss of system safety function, did not result in a loss of a single train of safety equipment for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating events. This finding was evaluated as not having a cross-cutting aspect because the performance deficiency was not indicative of current performance.

Inspection Report# : [2008012](#) (*pdf*)

**G****Significance:** Sep 11, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Follow Procedures During the Battery Performance Tests**

The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instruction, Procedures, and Drawings," for failure to follow procedures while performing the battery performance tests. Specifically, on four occasions, performance tests for Battery 2B008 were terminated early instead of continuing the tests until reaching one of the test termination criteria in the applicable test procedure. The licensee has entered this into their corrective action program as Notification NN 200060319.

This finding was more than minor because it was associated with the mitigating systems cornerstone (equipment performance attribute) and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not affect external event mitigation. This finding has a cross-cutting aspect in the area of human performance (Work Practices component) because the licensee did not ensure that appropriate error prevention techniques were used to avoid deviation from the test termination criteria provided in test procedures [H.4.(a)] (Section 1R21.2.14.3).

Inspection Report# : [2008010](#) (*pdf*)**G****Significance:** Sep 11, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Procedures for 480 VAC System Grounds**

The team identified a noncited violation of Technical Specification 5.5.1.a for inadequate procedures for 480 Volts Alternating Current system grounds. Specifically, the procedures do not identify the deleterious effects of 480 Volts Alternating Current system grounds on connected equipment, or the proper sense of urgency in removing grounds. Due to inadequate procedures for alarm response and abnormal operations, the licensee was slow in responding to a ground alarm on Bus 3B04 in March of 2008. It took 19 hours to identify and remove the ground. This indicated a routine, rather than a prompt response and may have exposed connected equipment to overvoltage for an unnecessarily long period of time. The licensee has entered this into their corrective action program as Notifications NN 200057494 (addresses trending of ground faults) and NN 200057495 (addresses procedure change).

This finding was more than minor because the procedure deficiency affected the mitigating system cornerstone objective (procedure quality attribute) of ensuring availability, reliability, and capability of systems needed to respond to initiating events to prevent undesired consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because the finding was not a design or qualification deficiency, did not result in a loss of safety function, and did not screen as potentially risk significant due to external events. This finding was reviewed for cross-cutting aspects and none were identified (Section 1R21.2.16.1).

Inspection Report# : [2008010](#) (*pdf*)**G****Significance:** Sep 11, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Corrective Actions for Battery Performance Test Issues**

The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to identify, evaluate, or correct conditions adverse to quality. Specifically, in 2007 the licensee failed to recognize, evaluate, or write an action request when the performance test for Station Battery 2B008 was terminated early due to test equipment issues. The licensee has entered this into their corrective action program as Notification NN

200060319.

This finding is more than minor because it is associated with the mitigating systems cornerstone objective (equipment performance attribute) of ensuring the availability and reliability of safety systems. Specifically, the failure to verify that battery testing anomalies are recognized, evaluated, and corrected is a condition adverse to quality with respect to ensuring that the battery would be capable of performing its design function. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not affect external event mitigation. This finding was reviewed for cross-cutting aspects and none were identified (Section 1R21.2.14.2).

Inspection Report# : [2008010](#) (pdf)

**Significance:**  Sep 03, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Design Control for Design Basis of Component Cooling Water Heat Exchangers**

The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," for failure to ensure that plant conditions were consistent with design calculation inputs and assumptions (rate of established component cooling water heat exchanger tube plugging). Specifically, there were no procedures to verify that the periodic heat treatments of the intake tunnel and intake structure were effective and that the population of shells available for plugging the component cooling water heat exchangers was consistent with the historical data used to develop the engineering calculation and operating instruction curves. As a result, the design basis calculation and operating instructions did not ensure the capability of the heat exchangers to perform their design function during anomalous conditions. The licensee has entered this into their corrective action program as Notification NN 200006369.

This finding is more than minor in that the performance of the component cooling water heat exchangers is essential in protecting the mitigating systems cornerstone objective (design control and equipment performance attributes) of ensuring the availability, reliability, and capability of systems needed to mitigate the consequences of an accident. Specifically, the existing design analyses did not adequately demonstrate that the component cooling water heat exchangers would perform adequately in the event of anomalous tube plugging events and plant procedures did not ensure that these anomalous events would be detected and mitigated prior to the heat exchangers being plugged. These deficiencies represented reasonable doubt regarding the operability of the component cooling water heat exchangers. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because the deficiency did not result in a loss of safety function of component cooling water Train A for greater than the Technical Specification allowed outage time. Train B was not adversely affected by this event. This finding was reviewed for cross-cutting aspects and none were identified since the performance deficiency is long standing and is not indicative of current licensee performance (Section 1R21.2.11)

Inspection Report# : [2008010](#) (pdf)

**Significance:**  Sep 03, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Design Control for 125VDC Control Circuits**

The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," for failure to properly analyze voltage drop in 125 Volts Direct Current control circuits. Specifically, the licensee failed to consider and analyze the voltage drop that occurs in control circuit elements such as cables, relay contacts, and fuses that could result in considerably lower voltage at the devices than is available at the corresponding distribution panels. The licensee has entered this into their corrective action program as Notifications NN 200051692 and NN 200059581.

This finding is more than minor because it is associated with the mitigating systems cornerstone objective (design control attribute) of ensuring the availability and reliability of safety systems, and closely parallels Inspection Manual Chapter 0612, Appendix E, Example 3.j, in that there was reasonable doubt regarding the capability of the 125 Volts Direct Current system to perform its intended function pending reanalysis. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding is determined to have very low safety significance (Green) because the 125 Volts Direct Current system was determined to have sufficient voltage margin to accommodate the additional voltage drop in the circuit elements that had not been considered. This finding was reviewed for cross-cutting aspects and none were identified (Section 1R21.2.14.1)

Inspection Report# : [2008010](#) (pdf)

**Significance:**  Jun 18, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Air Supply Equalizing Valve Not Secured Closed Due To Failure To Follow Procedure**

The inspectors identified a noncited violation of Technical Specification 5.5.1.1 for the failure of operations personnel to follow Procedure SO23-2-8.1, "Saltwater Cooling System Alignments," Revision 7. Specifically, on June 17, 2008, inspectors identified air equalizing supply Valve HV6200 not secured closed, contrary to procedural requirements. These valves were required to be secured closed as a corrective action to Apparent Cause Evaluation 060100377. This finding was entered into the licensee's corrective action program as Nuclear Notification 200038227.

The finding is greater than minor because it would become a more significant safety concern if left uncorrected, in that air equalizing supply valves could be inadvertently opened rendering their associated air-operated valves unable to perform their safety function. The finding affected 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 it did not result in the actual loss of system safety function. The finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program, because the licensee did not thoroughly evaluate problems such that resolutions address causes and extent of condition [P.1(c)].

Inspection Report# : [2008003](#) (pdf)

**Significance:**  Jun 03, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Properly Implement the Operability Determination Process.**

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 procedures and adequately evaluate degraded, nonconforming, and unanalyzed conditions to support operability decision-making. Specifically, on June 3, 2008, operations and engineering personnel failed to adequately evaluate the operability of the Unit 2 component cooling water system Train A when unexpected, rapid heat exchanger fouling occurred during low tide conditions. This finding was entered into the licensee's corrective action program as Action Request 080600438.

The finding is greater than minor because the degraded component cooling water heat exchanger 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 of component cooling water Train A for greater than the Technical Specification allowed outage time. This 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 when faced with uncertain and unexpected conditions [H.1(a)].

Inspection Report# : [2008003](#) (pdf)

**Significance:** SL-IV Apr 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Submit LER for Condition Prohibited by Technical Specifications**

The team identified a Severity Level IV noncited violation of 10 CFR Part 50.73 for the failure of the licensee's regulatory compliance organization to submit a required Licensee Event Report within 60 days after discovering an event requiring a report. Specifically, compliance personnel failed to properly assess the past operability of the safety-related 125 Vdc Battery 2B008, which had been inoperable for greater than the technical specification allowed outage time. This issue was entered into the licensee's corrective action program as Nuclear Notification 200059017.

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 events. The finding was determined to be a Severity Level IV violation in accordance with Section D.4 of Supplement I of the NRC Enforcement Policy.

The finding has a crosscutting aspect in the area of problem identification and resolution associated with CAP because the licensee failed to thoroughly evaluate problems such that the resolutions address causes and extent of conditions. This includes properly classifying, prioritizing, and evaluating for operability and reportability conditions adverse to quality [P.1(c)] (Sections 2.1.6 and 3.6).

Inspection Report# : [2008013](#) (pdf)

**G**

**Significance:** Mar 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Follow Procedure Delays Entry Into Technical Specification Condition**

The team identified a Green noncited violation of Technical Specification 5.5.1.1 involving the failure of an electrical maintenance supervisor to follow procedures after notification that Battery 2B008 terminal voltage was less than the TS required value of 129 Vdc. Specifically, the supervisor failed to notify the control room shift supervisor after being informed of a failed battery surveillance activity. The failure to follow procedures resulted in more than a two hour delay in entering the required 2-hour technical specification action statement. This issue was entered into the licensee's corrective action program as Nuclear Notification 200196248.

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. The finding is of very low safety significance based on a senior reactor analyst risk estimation assuming the performance deficiency resulted in operating the plant with an inoperable 125 Vdc battery for an additional period of 2.42 hours. The cause of the finding is related to the crosscutting element of human performance associated with decision making because personnel did not make safety significant decisions using a systematic process when faced with uncertain and unexpected plant conditions to ensure safety was maintained. This included the failure to formally define the authority and roles of the electrical maintenance supervisors for decisions affecting nuclear safety [H.1(a)] (Sections 2.1.2 and 3.1).

Inspection Report# : [2008013](#) (pdf)

**G**

**Significance:** Mar 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Follow the Work Control Process to Perform Troubleshooting**

The team identified a Green noncited violation of Technical Specification 5.5.1.1, for the failure of electrical maintenance personnel to follow Procedure SO123-XX-1, "Action Request/Maintenance Order Initiation and Processing," Revision 20. Specifically, following identification of a failed 125 Vdc battery surveillance, troubleshooting activities were performed without a maintenance order and control room authorization. This issue was entered into the licensee's corrective action program as Nuclear Notification 200196248.

The finding is greater than minor because it would become a more significant safety concern if left uncorrected in that more significant consequences could occur if work control procedures are not followed when performing maintenance on safety-related structures, systems, and components. The finding affected the mitigating systems cornerstone. The finding is of very low safety significance based on a senior reactor analyst estimation assuming the performance deficiencies resulted in operating the plant with an inoperable 125 Vdc battery for a period of 2.42 hours while troubleshooting activities were conducted. The finding has a crosscutting aspect in the area of human performance associated with decision making because the electrical maintenance personnel did not make safety significant decisions using a systematic process, especially when faced with uncertain or unexpected plant conditions [H.1.(a)] (Sections 2.1.2 and 3.2).

Inspection Report# : [2008013](#) (*pdf*)

**Significance:**  Mar 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Follow the Work Control Process**

The team identified a Green noncited violation of Technical Specification 5.5.1.1, for the failure of electrical maintenance personnel to follow Procedure SO123-XX-5, "Work Authorizations," Revision 17. Specifically, work to correct the identified degraded electrical condition was initiated prior to having an appropriately authorized maintenance order. This issue was entered into the licensee's corrective action program as Nuclear Notification 200196248.

The finding is greater than minor because it would become a more significant safety concern if left uncorrected in that more significant consequences would occur if work control procedures are not followed when performing maintenance on safety-related structures, systems, and components. The finding affected 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 it was not a design or qualification deficiency, did not result in a loss of safety function, and did not screen as potentially risk significant due to external events. The finding has a crosscutting aspect in the area of human performance associated with work practices because the licensee did not perform adequate pre-job briefings and did not properly document the maintenance activities [H.4(a)] (Sections 2.1.3 and 3.3)

Inspection Report# : [2008013](#) (*pdf*)

**Significance:**  Mar 25, 2008

Identified By: NRC

Item Type: VIO Violation

#### **Failure to Establish Appropriate Instructions**

The team identified a White violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," involving the failure to establish appropriate instructions for performing maintenance activities on safety-related 125 Vdc station battery Breaker 2D201. As a result, during replacement of the breaker in March 2004 electrical connection integrity was not adequate to ensure that the equipment would be able to perform its safety function. This condition existed for approximately four years. This issue was entered into the licensee's corrective action program as Root Cause Evaluation 800121216.

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. The final significance determination performed by the senior reactor analyst and approved by the NRC significance and enforcement review panel determined the finding was of low to moderate safety significance (White). This finding has a crosscutting aspect in the area of human performance associated with resources because the licensee failed to establish adequate procedures and programs related to electrical connection integrity [H.2(c)] (Sections 2.1.5 and 3.5)

Inspection Report# : [2008013](#) (*pdf*)

**G****Significance:** Mar 25, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

**Lack of Written Procedures for a Loss of 125 Vdc Bus**

The team identified a Green noncited violation of Technical Specification 5.5.1.1 for the failure to establish written procedures for a loss or degradation of a safety-related electrical power source. Specifically, no procedural guidance was provided to operations personnel to combat and recover from a loss or degradation of a Class 1E 125 Vdc bus. This issue was entered into the licensee's corrective action program as Nuclear Notifications 20060584 and 200196248.

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 it was not a design or qualification deficiency, did not result in a loss of safety function, and did not screen as potentially risk significant due to external events. This finding was reviewed for crosscutting aspects and none were identified (Section 3.8).

Inspection Report# : [2008013](#) (*pdf*)**G****Significance:** Dec 31, 2007

Identified By: NRC

Item Type: VIO Violation

**Failure to Prevent Recurrence of Premature Tripping of Square D Thermal Overloads**

Green. A self revealing Green violation of 10 CFR Part 50, Appendix B, Criterion XVI, was identified for the failure to prevent recurrence of premature tripping of Square D thermal overloads used for equipment protection on safety-related equipment. The licensee failed to scope the thermal overloads associated with the Unit 3 saltwater cooling pump room because they had previously determined that it had sufficient margin such that it would not be susceptible to failure. The licensee has since replaced all 75 susceptible thermal overloads that were previously scoped out of the corrective action process. This issue was entered into the licensee's corrective action program as Action Request 070800454.

The finding was determined to be more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and it affected the cornerstone objective by challenging the availability and capability of safety-related components. The inspectors also noted that this a repetitive problem in implementing corrective actions. Based on the results of the Significance Determination Process Phase 1 evaluation, the finding was determined to have very low safety significance because it did not result in an actual loss of a system safety function, a loss of a single train of safety equipment for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to seismic, flooding, or severe weather initiating events. This finding also had crosscutting aspects in the area of problem identification and resolution associated with the corrective action program (P.1(c)) because the licensee failed to thoroughly evaluate the extent of condition of insufficient solder material on safety-related thermal overloads.

Inspection Report# : [2007005](#) (*pdf*)

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## Barrier Integrity

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## Emergency Preparedness

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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

Last modified : April 07, 2009