

## Comanche Peak 2

### 3Q/2013 Plant Inspection Findings

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#### Initiating Events

**Significance:**  Sep 25, 2013

Identified By: NRC

Item Type: FIN Finding

#### **Failure to Properly Install Auxiliary Condenser Tube Plugs Causes Steam Generator Chemistry Excursion and Unit Power Reduction**

The inspectors reviewed a self-revealing finding for the licensee's failure to ensure the heat exchanger tube plugging procedure was adequate. As a result, auxiliary condenser plugs were improperly inserted and caused a tube to leak. This caused high sodium levels in the steam generators and a Unit 2 power reduction from 100 percent to less than 50 percent power. The licensee entered the finding into the corrective action program as Condition Report CR-2012-011805. The finding was more than minor because it was associated with the equipment performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective, in that, it increased the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment. The finding has a human performance cross-cutting aspect associated with work practices in that the licensee supervision failed to provide appropriate oversight to the tube plugging procedure and plugging activity [H.4(c)].

Inspection Report# : [2013004](#) (*pdf*)

**Significance:**  Jun 26, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Failure to Properly Install an Air Regulator Causes Heater Drain Valve Closure and Reactor Trip**

The inspectors reviewed a self-revealing finding for the licensee's failure to appropriately plan and control work activities during the installation of an air regulator in the heater drain system. As a result, the fitting that connected the air regulator to an adjacent in-line air filter broke and caused a plant transient and an automatic reactor trip. The licensee entered the finding in the corrective action program as Condition Report CR-2012-012183.

The finding was more than minor because it was associated with the equipment performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective in that it increased the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the finding was determined to be of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigating equipment would not be available. The finding had a human performance cross-cutting aspect associated with work control in that the licensee failed to appropriately plan the work activity.[H.3(a)]

Inspection Report# : [2013003](#) (*pdf*)

**Significance:**  Mar 27, 2013

Identified By: Self-Revealing

Item Type: FIN Finding

### **Failed Condenser Support Causes Steam Generator Sodium Transient and Manual Reactor Trip**

The inspectors reviewed a self-revealing finding for the failure to evaluate the effects of vibration on pipe supports in accordance with the design control program when removing the supported pipes. As a result, a pipe support failed due to fatigue and the falling support sheared circulating water tubes causing high sodium levels in the steam generators. The operators manually tripped the reactor as a result of high sodium levels in the steam generators. The licensee entered the finding in the corrective action program as Condition Report CR-2011-006118.

The licensee's failure to evaluate the effects of vibration on pipe supports in accordance with the design control program when removing the supported pipes was a performance deficiency. The finding was more than minor because it was associated with the design control attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective. It increased the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the performance deficiency resulted in a manual reactor trip. Using NRC Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," the finding was determined to be of very low safety significance because the finding did not contribute to both the cause of a reactor trip and affect mitigation equipment. The finding had a human performance cross-cutting aspect associated with decision making, in that, licensee personnel failed to use conservative assumptions and adopt a requirement to demonstrate that the action was safe in order to proceed rather than a requirement to demonstrate that it was unsafe in order to disapprove the action [H.1b].

Inspection Report# : [2013002](#) (*pdf*)

## **Mitigating Systems**

**Significance:**  Sep 25, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Remove Cable Material from Inside Containment**

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow instructions and remove cables from containment as part of a modification. As a result, portions of 12 cables totaling approximately 100 feet in length wrapped with tape on the ends remained in containment and could have been transported to the emergency sumps during an accident. The licensee entered the finding into the corrective action program as Condition Report CR-2013-009443. The finding was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of the emergency sumps. Using NRC Manual Chapter 0609, "Significance Determination Process," Appendix G, "Shutdown Operations Significance Determination Process," Attachment 1, Checklist 2, the finding was determined to be of very low safety significance because the licensee maintained adequate mitigation capability for the current plant state and the finding was not characterized as a loss of control event. The finding has a human performance cross-cutting aspect associated with work practices in that the maintenance personnel did not involve supervision when they had questions concerning the removal of the cables and proceeded in the face of uncertainty [H.4(a)].

Inspection Report# : [2013004](#) (*pdf*)

**Significance:**  Sep 25, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Initiate a Condition Report for a Degraded Under Frequency Relay**

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure to follow procedures that require initiating a condition report for degradation to safety-related equipment. During a surveillance activity, maintenance personnel discovered that a reactor coolant pump under frequency relay was outside the as-found setpoint tolerance for pick-up frequency and failed to enter the condition into the corrective action program. As a result, the cause and effect of the degraded condition was not evaluated and the relay again drifted outside the setpoint tolerance. The licensee entered the finding into the corrective action program as Condition Report CR-2013-010078.

The finding was more than minor because if the licensee continues to fail to document degraded safety-related equipment in the corrective action database, there is a potential that this could lead to a more significant safety concern, in that the cause of the degradation will not be evaluated and corrected. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” the finding was determined to be of very low safety significance (Green) because the finding was not a design or qualification deficiency; did not represent an actual loss of safety function of a system or train; and did not represent an actual loss of a technical specification train for greater than its allowed outage time. The finding has a human performance cross-cutting aspect associated with resources in that the licensee failed to provide adequate training to personnel performing maintenance [H.2(b)].

Inspection Report# : [2013004](#) (pdf)

**Significance:**  Jun 26, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Procedure for Testing Main Steam Safety Valves**

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure of the licensee to have documented instructions of a type appropriate to the circumstances for testing the main steam safety valves. Specifically, the procedure for testing the main steam safety valves did not provide direction to declare the valves inoperable when applying pressure to the lifting device. As a result, the licensee failed to declare the main steam safety valves inoperable during testing. The licensee entered the finding in the corrective action program as Condition Report CR-2013-002947.

The finding was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the procedure did not provide guidance to declare a main steam safety valve inoperable with the test rig installed. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” the finding was determined to be of very low safety significance because the finding was not a design or qualification deficiency; did not represent an actual loss of safety function of a system or train; and did not result in the loss of one or more trains of non-technical specification trains of equipment. The inspectors determined that the finding was not representative of current licensee performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013003](#) (pdf)

**Significance:**  Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Calculations and Procedures for Offsite Power Availability**

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” that states, in part, “applicable regulatory requirements and design basis are correctly translated into specifications, drawings, procedures, and instructions.” Specifically, prior to June 5, 2013, the licensee did not establish that the

minimum switchyard voltages established in station procedures were adequate to prevent undesired actuation of the undervoltage protection scheme. This condition resulted from an inadequate analysis of undervoltage relay setpoints in design calculations, and the failure to provide acceptance criteria for undervoltage relay reset setpoints in relay calibration procedures. The finding was entered into the licensee's corrective action program as Condition Report CR-2013-006176.

The inspectors determined that the failure to properly analyze minimum switchyard voltage requirements, and control relay setpoints necessary to maintain the availability of offsite power was a performance deficiency. The performance deficiency is more-than-minor because it was associated with Reactor Safety, Mitigating Systems Cornerstone, Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, at the minimum switchyard voltages established in station procedures, actuation of the undervoltage protection scheme could have occurred and removed the reliable offsite power sources during an accident. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the finding was not a design deficiency and did not result in the loss of operability or functionality. The finding had a cross-cutting aspect in the Area of Problem Identification and Resolution, associated with the Operating Experience Component, since the issues noted in this finding were discussed in Regulatory Issue Summary (RIS) 2011-12, "Adequacy of Station Electric Distribution System Voltages," and RIS 2011-12 was reviewed by the licensee as part of the self assessment conducted in February 2013. [P.2(b)]

Inspection Report# : [2013007](#) (pdf)

**Significance:**  Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Voltage Calculations for the 125 VDC and 120 VAC Buses**

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," that states, in part, "applicable regulatory requirements and design basis are correctly translated into specifications, drawings, procedures, and instructions." Specifically, prior to June 20, 2013, the 125 VDC calculation did not take into account the maximum inrush currents and actual accident loading, and the 120 VAC calculation did not properly account for low voltage when the buses are supplied from their alternate source. The finding was entered into the licensee's corrective action program as Condition Report CR-2013-006273 and CR-2013-006396.

The inspectors determined that the failure to perform accurate voltage calculations for the 125 VDC system and 120 VAC bus was a performance deficiency. The performance deficiency is more-than-minor because it was associated with the Reactor Safety, Mitigating Systems Cornerstone, Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 125 VDC calculation did not take into account the maximum inrush currents and actual accident loading, and the 120 VAC calculation did not properly account for low voltage when the buses are supplied from their alternate source. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the finding was not a design deficiency and did not result in the loss of operability or functionality. This finding did not have a cross-cutting aspect because the most significant contributor to the performance deficiency did not reflect current licensee performance.

Inspection Report# : [2013007](#) (pdf)

**Significance:** G Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure To Establish 10 CFR 50.65(a)(1) Performance Goals for the APDG'S**

The inspectors identified a Green, non-cited violation of 10 CFR 50.65(a)(1), "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," that states, in part, that the licensee "shall monitor the performance or condition of structures, systems, or components, against licensee established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, and components are capable of fulfilling their intended functions." Specifically, on July 26, 2012, the licensee failed to establish goals and monitor the performance of the alternate power diesel generator system to ensure the system is capable of providing the necessary electric power onto the emergency buses. The finding was entered into the licensee's corrective action program as Condition Report CR-2013-006521.

The inspectors determined that the failure to follow procedure to establish performance goals while performing Maintenance Rule (a)(1) monitoring to ensure the APDG system is capable and tested to meet the design basis requirements, was a performance deficiency. The performance deficiency is more-than-minor because it was associated with the Reactor Safety, Mitigating Systems Cornerstone, Equipment Performance attribute and adversely affected the cornerstone objective to ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the procedure directs the licensee to establish performance goals on activities that address conditions which were determined to be classified as (a)(1). In accordance with Inspection Manual Chapter (IMC) 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the finding affected the Mitigating System Cornerstone. Using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the finding was not a design deficiency and did not result in the loss of operability or functionality. This finding had a cross-cutting aspect in the area of human performance associated with the resources component because the licensee failed to ensure that emergency equipment is adequate and available to assure nuclear safety. [H.2(d)]

Inspection Report# : [2013007](#) (*pdf*)

**Significance:** G Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Analyze Effect of System Harmonics on Degraded Voltage Relays**

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," that states, in part, "measures provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program." Specifically, prior to May 20, 2013, the licensee failed to assess the adverse effects of 6.9kV and 480V system harmonics on the degraded voltage relays. The finding was entered into the licensee's corrective action program as Condition Report CR-2013-006230.

The inspectors determined that the failure to analyze the effect of electrical system harmonics on the degraded voltage relays was a performance deficiency. The performance deficiency is more-than-minor because it was associated with the Reactor Safety, Mitigating Systems Cornerstone, Design Control attribute and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, failure to analyze the effect of electrical system harmonics on the degraded voltage relays could cause the relays to fail to actuate at the setpoint specified in Technical Specifications. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the

finding was a deficiency affecting the design or qualification that did not result in the safety-related equipment losing operability or functionality. This finding did not have a cross-cutting aspect because the most significant contributor to the performance deficiency did not reflect current licensee performance.

Inspection Report# : [2013007](#) (*pdf*)

**Significance:** G Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Perform Adequate Operability Assessments**

The inspectors identified a Green, non-cited violation, with three examples, of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," that states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings and shall be accomplished in accordance with these instructions, procedures, or drawings." Specifically, for example 1 on February 28, 2013, for example 2 on June 5, 2013 and for example 3 on June 8, 2013, the licensee failed to follow procedure STI 442.01, "Operability Determination and Functionality Assessment Program," Revision 1, Attachment 8.B page 3 of 5 which states, in part, "Identify the topics that are applicable to the quick technical evaluation and include information for applicable topics within the evaluation such as: for example 1, The effect or potential effect of the degraded or nonconforming condition on the affected SSC's ability to perform its specified safety function, or for example 2, Compensatory Measures are recommended, or for example 3, Whether there is reasonable expectation of operability, including the basis for the determination." The finding was entered into the licensee's corrective action program as Condition Report CR-2013-006599.

The inspectors determined that the failure to perform adequate operability assessments was a performance deficiency. The performance deficiency is more-than-minor because:

Example 1: It was associated with the Reactor Safety, Barrier Integrity Cornerstone, Configuration Control attribute and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, shutting off of the containment spray pumps during a large break LOCA inside containment would allow containment pressure to increase. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 3, the inspectors determined the finding was of very low (Green) safety significance because it did not represent an actual open pathway in the physical integrity of reactor containment (valves, airlocks, etc.), containment isolation system (logic and instrumentation), and heat removal components or actual reduction in function of hydrogen igniters in the reactor containment.

Example 2: It was associated with the Reactor Safety, Mitigating Systems Cornerstone, Equipment Performance attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the compensatory measures established in the first operability assessment did not ensure that offsite power would be maintained at minimum grid voltage.

Example 3: It was associated with the Reactor Safety, Mitigating Systems Cornerstone, Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the operability assessment initially credited the use of the battery chargers after the emergency diesel generators restored power to the bus, without evaluating design basis for the battery chargers.

For examples 2 and 3, the inspectors used Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very

low (Green) safety significance because these examples were a deficiency affecting the design or qualification that did not result in losing operability or functionality.

This finding had a cross-cutting aspect in the area of human performance associated with the decision making component because the licensee failed in all three examples to conduct an effectiveness review of a safety-significant decision to verify the validity of the underlying assumptions to identify possible unintended consequences during the original operability assessments. [H.1(b)]

Inspection Report# : [2013007](#) (pdf)

**Significance:** G Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Provide Appropriate Acceptance Criteria and Testing Procedure Instructions**

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," that states, in part, "A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents." Specifically, since 2001, the licensee failed to provide appropriate acceptance criteria and testing procedure instructions during modified performance tests involving Class 1E batteries for the 1-minute critical period testing data which incorporated the requirements of IEEE Standard 450-1995 to ensure the battery would meet the required design voltage for the duty cycle. The finding was entered into the licensee's corrective action program as Condition Report CR-2013-005673.

The inspectors determined that the failure to provide appropriate acceptance criteria and testing procedure instructions involving Class 1E batteries for the 1-minute critical period testing data during modified performance tests was a performance deficiency. The performance deficiency is more-than-minor because it was associated with the Reactor Safety, Mitigating Systems Cornerstone, Procedure Quality attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Procedure MSE-S0-5715 does not direct the technicians to record and evaluate the voltage at the end of the 1-minute critical period to ensure it does not drop below the designed minimum voltage, which would indicate the battery would not be capable of meeting the required design function. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the finding was not a design deficiency and did not result in the loss of operability or functionality. This finding did not have a cross-cutting aspect because Calculation EE-CA-0000-5121 was implemented in 2001 and did not reflect current licensee performance.

Inspection Report# : [2013007](#) (pdf)

**Significance:** G Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Provide Appropriate Acceptance Criteria for the Safety Chill Water Pumps**

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," that states, in part, "A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents." Specifically, since 1994, the licensee failed to recognize that if the safety-related chilled water pumps were degraded to 90 percent of their reference value, as permitted by IST Procedures OPT

209A/B, the system may not be able to achieve the required design flowrates as stated in Calculation 1-EB-311-8. This finding was entered into the licensee's corrective action program as Condition Report CR-2013-006252.

The inspectors determined that the failure to ensure appropriate acceptance criteria were incorporated into test procedures for the safety chill water pumps was a performance deficiency. The performance deficiency is more-than-minor because it was associated with the Reactor Safety, Mitigating Systems Cornerstone, Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to recognize that if the safety-related chilled water pumps were degraded to 90 percent of their reference value, as permitted by IST Procedures OPT-209A/B, the system may not be able to achieve the required design flowrates as stated in Calculation 1-EB-311-8. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the finding was not a design deficiency and did not result in the loss of operability or functionality. This finding did not have a cross-cutting aspect because Calculation 1-EB-311-8 was updated in 1994 to incorporate the uninterruptible power system fan coil units and did not reflect current licensee performance.

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Identify Fouling on the Emergency Diesel Generator Building Exhaust Ventilation Screens**

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," that states, in part, "measures shall be established to assure that conditions adverse to quality are promptly identified and corrected." Specifically, prior to June 17, 2013, the licensee failed to establish an activity to identify fouling of the Unit 1 emergency diesel generator building exhaust ventilation screens. The finding was entered into the licensee's corrective action program as Condition Report CR-2013-006540.

The inspectors determined that the failure to identify fouling on the Unit 1 emergency diesel generator building exhaust ventilation screens was a performance deficiency. The performance deficiency is more-than-minor because it had the potential to lead to a more significant safety concern. Specifically, the Unit 1 emergency diesel generator rooms could have insufficient exhaust flow to meet design basis temperature requirements if left uncorrected. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the finding was not a design deficiency and did not result in the emergency diesel generators losing operability or functionality. This finding did not have a crosscutting aspect because the most significant contributor to the performance deficiency did not reflect current licensee performance.

Inspection Report# : [2013007](#) (*pdf*)

**Significance:**  Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Incorporate the Refueling Water Storage Tank Vortexing Design Calculation Into the Emergency Operating Procedures for Containment Spray Pump Operation**

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, "measures shall be establish to assure that the design basis for systems, structures, and components are correctly translated into specifications, drawings, procedures and instructions." Specifically, since 2006 and 2007, the licensee failed to appropriately incorporate the RWST vortexing design calculation's 6 percent indicated level into the



emergency operating procedures for switching containment spray pump suction from the RWST to the containment sump to prevent damage to the pumps. The finding was entered into the licensee's corrective action program as Condition Report CR-2013-005739.

The inspectors determined that the failure to appropriately incorporate the RWST vortexing design calculation's 6 percent indicated level into the emergency operating procedures for switching containment spray pump suction from the RWST to the containment sump to prevent damage to the pumps was a performance deficiency. The performance deficiency is more-than-minor because it was associated with the Reactor Safety, Mitigating Systems Cornerstone, Procedure Quality attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Emergency Operating Procedure EOS 1.3A/B allowed the operators the ability to delay transfer of containment spray pump suction source which could have caused damage to the pumps due to vortexing. Using Inspection Manual Chapter 0609 Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the finding was not a design deficiency and did not result in the loss of operability or functionality. This finding did not have a cross-cutting aspect because the change to the procedure due to the addition of the sump strainers occurred in 2006 and 2007, and did not reflect current licensee performance.

Inspection Report# : [2013007](#) (pdf)

**Significance:** G Jun 20, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Correct Design Calculations to Incorporate Technical Specification Allowed Frequency Range for the Emergency Diesel Generator in a Timely Manner**

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, "measures shall be established to assure that conditions adverse to quality are promptly identified and corrected." Specifically, since May 2010, the licensee failed to correct a condition adverse to quality in a timely manner that involved updating design basis calculations for safety-related equipment to include the allowed technical specification frequency range of  $\pm 2$  percent for the emergency diesel generators. The finding was entered into the licensee's corrective action program as Condition Report CR-2013-006604.

The inspectors determined that the failure to correct a condition adverse to quality in a timely manner that involved updating design basis calculations for safety-related equipment to include the allowed technical specification frequency range of  $\pm 2$  percent for the emergency diesel generators was a performance deficiency. The performance deficiency is more-than-minor because it was associated with the Reactor Safety, Mitigating Systems Cornerstone, Design Control attribute and adversely affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the calculations to support safety-related equipment did not include allowed technical specification frequency range for the emergency diesel generators to ensure the equipment would be capable of performing their safety-related functions. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, the inspectors determined the finding was of very low (Green) safety significance because the finding was a deficiency affecting the design or qualification that did not result in the safety-related equipment losing operability or functionality. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to take appropriate corrective actions to address updating design basis calculations to include technical specification allowed emergency diesel generator frequency range in a timely manner, commensurate with their safety significance.

[P.1(d)]

Inspection Report# : [2013007](#) (pdf)

**Significance:**  Mar 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Correct Diesel Frequency Degradation**

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to preclude repetition of a significant condition adverse to quality. Specifically, the Unit 2 train B diesel generator failed to maintain 60 hertz during an isochronous test on April 9, 2011, which was a repeat of a significant condition adverse to quality identified in 2010. As a result, the capability of the diesel generator to supply emergency power was degraded. The licensee entered the finding in the corrective action program as Condition Report CR-2011-007683.

The licensee's failure to preclude repetition of the Unit 2 train B diesel generator frequency degradation, a significant condition adverse to quality, was a performance deficiency. The finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the isochronous diesel frequency degraded from the nominal 60 hertz, which would cause powered equipment to slow down. Using NRC Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," the finding was determined to be of very low safety significance because the finding was not a design or qualification deficiency; did not represent an actual loss of safety function of a system or train; and did not result in the loss of one or more trains of non-technical specification trains of equipment. Although the diesel frequency was degraded, the diesel and all of its powered equipment remained capable of performing their safety functions. The finding had a problem identification and resolution cross-cutting aspect associated with the corrective action program, in that, the licensee failed to thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary [P.1c].

Inspection Report# : [2013002](#) (*pdf*)

**Significance:**  Mar 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Identify Inadequate Auxiliary Feedwater Valve Maintenance**

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to identify and correct a condition adverse to quality. Specifically, the licensee failed to identify and correct an inadequate auxiliary feedwater test line isolation valve preventative maintenance document. As a result, the valve was difficult to operate and was not fully closed following pump testing, causing auxiliary feedwater flow to be diverted away from the steam generators during a plant shutdown. The licensee entered the finding in the corrective action program as Condition Report CR-2013-003095.

The licensee's failure to identify and correct the inadequate preventative maintenance document that led to an auxiliary feedwater flow diversion was a performance deficiency. The finding was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the inadequate maintenance resulted in auxiliary feedwater flow diverted away from the steam generators during a plant shutdown. Using NRC Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," the finding was determined to be of very low safety significance because the finding was not a design or qualification deficiency; did not represent an actual loss of safety function of a system or train; and did not result in the loss of one or more trains of non technical specification trains of equipment. The finding had a problem identification and resolution cross-cutting aspect associated with the corrective action program, in that, the licensee failed to have a low threshold for identifying issues [P.1a].

Inspection Report# : [2013002](#) (*pdf*)

**Significance:** G Mar 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Install Grout Under Pipe Support Base Plates**

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, for the failure to install grout under pipe support base plates for a main steam line in accordance with drawings. As a result, the pipe support's ability to withstand a seismic event was degraded. The licensee entered the finding in the corrective action program as Condition Report CR-2012-008954.

The licensee's failure to install grout under pipe support base plates for a main steam system pipe in accordance with drawings was a performance deficiency. The finding was more than minor because it was associated with the protection against external factors attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the lack of grout under the pipe support base plates reduced the capability of the support to protect the piping from a seismic event. Using NRC Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At Power," the finding was determined to be of very low safety significance because the finding did not result in the total loss of any safety function that contributes to external event initiated core damage accident sequences. Specifically, despite the degraded condition, the inspectors concluded that the main steam system was capable of performing its safety functions. Since the performance deficiency occurred prior to 1993, the inspectors concluded that the finding was not representative of current licensee performance and no cross cutting aspect was assigned.

Inspection Report# : [2013002](#) (*pdf*)

**Significance:** G Dec 31, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Foreign Material in Diesel Generator Governor Causes Start Failure**

The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.4.1 a for the failure of the licensee to follow procedure and properly replace diesel generator governor oil. As a result, foreign material was introduced into the governor and caused a diesel generator start failure. The licensee replaced the governor to correct the problem. The licensee entered the finding into the corrective action program as Condition Report CR-2012-006280.

The licensee's failure to follow procedure and properly replace the diesel generator governor oil was a performance deficiency which resulted in a diesel generator start failure. The finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At Power," the finding screened to a detailed risk evaluation because it represented an actual loss of function of a single train for greater than its technical specification allowed outage time. A senior reactor analyst evaluated the risk and determined that the risk was of very low safety significance. The finding has a human performance cross-cutting aspect associated with work control, in that, the job site conditions impacted the human performance of the work activity [H.3b].

Inspection Report# : [2012005](#) (*pdf*)

## 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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## Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

Last modified : December 03, 2013