

## South Texas 2

### 1Q/2014 Plant Inspection Findings

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#### Initiating Events

**Significance:** G Mar 28, 2014

Identified By: NRC

Item Type: VIO Violation

##### **Failure to Accurately Document Completion of a Maintenance Activity**

The inspectors identified a violation of 10 CFR 50.9; 10 CFR 50, Appendix B, Criterion XVII; and Technical Specification 6.8.1.a, for failure to accurately document completion of a maintenance activity. Specifically, on November 7, 2011, a maintenance supervisor documented that a work order step to hot torque the Unit 2 pressurizer spray valve hold down bolts had been performed, when this activity was never completed. The NRC's investigation determined that this falsification was deliberate violation that impacted the NRC's ability to perform its regulatory function, so this violation is being cited in accordance with the NRC Enforcement Policy (EA-13-213). This issue was entered into the licensee's corrective action program under Condition Report 14-4633. The individual who falsified the document was subject to administrative action in accordance with the licensee's program, and licensee management reinforced the need to ensure accurate quality records with workers.

The failure to accurately document completion of a maintenance activity was a performance deficiency. The performance deficiency was more than minor, therefore, a finding, because it affected the initiating events cornerstone, and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using the Inspection Manual Chapter 0609, Appendix A, Exhibit 1, Section A, "LOCA Initiators," the inspectors determined that the finding was of very low safety significance (Green) because the performance deficiency did not result in an actual degradation of the reactor coolant pressure boundary. In addition, this finding was evaluated under traditional enforcement due to the conclusion that it was a deliberate violation that impacted the NRC's ability to perform its regulatory function, and was determined to be a Severity Level IV violation. The finding was not assigned a cross-cutting aspect because it was not representative of current licensee performance in that the violation occurred more than 2 years ago.

Inspection Report# : [2014007](#) (*pdf*)

**Significance:** G Feb 06, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

##### **Failure to Develop Adequate Procedures for Loss of All Seal Cooling to a Reactor Coolant Pump**

The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," which states, in part, "Instructions, procedures, or drawings shall include appropriate qualitative and quantitative acceptance criteria for determining that important activities have been satisfactorily accomplished." Specifically, prior to January 29, 2014, the licensee failed to include appropriate qualitative and quantitative criteria in emergency operating procedures, off-normal operating procedures, and annunciator response procedures that are used during a loss of all seal cooling to a reactor coolant pump to prevent increased risk of a reactor coolant pump seal loss of coolant accident. In response to this issue, the licensee implemented changes to the affected procedures and communicated the changes to the operating staff. This finding was entered into the licensee's corrective action program as Condition Report 14-1635.

The team determined that the failure to include appropriate qualitative and quantitative criteria in emergency operating procedures, off-normal operating procedures, and annunciator response procedures for a loss of all seal cooling to a reactor cooling pump was a performance deficiency. This finding was more than minor because it adversely affected the Initiating Events Cornerstone attribute of Procedure Quality and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, operating procedures did not contain appropriate attributes to ensure timely action to prevent an increased likelihood of a reactor coolant pump seal loss of coolant accident. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 1, "Initiating Events Screening Questions," the team determined a detailed risk evaluation was necessary because, after a reasonable assessment of degradation, the finding could result in exceeding the reactor coolant system leak rate for a small loss of coolant accident. Therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the change to the core damage frequency would be less than 1E-7 per year (Green). This finding had a cross-cutting aspect in the area of human performance, training component because the licensee did not provide training and ensure knowledge transfer to maintain a knowledgeable, technically competent workforce and instill nuclear safety values. [H.9]

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

**Significance:**  Dec 31, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to Maintain Licensed Operator Examination Integrity**

A self revealing Green noncited violation of 10 CFR Part 55.49, "Integrity of Examinations and Tests," was identified for the failure of operations training personnel to ensure the integrity of an operating test scheduled for administration for an initial licensing examination scheduled for the week of September 30, 2013. This failure resulted in a potential compromise of examination integrity, but did not lead to an actual compromise of the administered examination.

This finding was more than minor because it would have affected examination integrity had it not been detected. However, because no actual compromise of examination integrity occurred, the finding was determined to have very low safety significance. This finding had a cross-cutting aspect in the area of human performance associated with work practices because the licensee did not properly self- and peer check to ensure a potential compromise of examination materials would not occur [H.4(a)].

Inspection Report# : [2013301](#) (*pdf*)

**Significance:**  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Include Appropriate Acceptance Criteria in a Quality Procedure**

The inspectors identified a non-cited violation of Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specifically, the licensee did not include sufficient criteria to identify and evaluate new critical tasks created for operator performance on the simulator scenario portion of the biennial requalification examination to enable the evaluators to correctly assess licensed operator performance. The licensee has entered this issue into their corrective action program as Condition Report 2013-13857.

The failure to include appropriate qualitative acceptance criteria in Procedure LOR-GL-002, to ensure evaluators can correctly identify and evaluate critical tasks based on operator performance was a performance deficiency. The performance deficiency was more than minor, therefore, a finding, because if left uncorrected, the performance

deficiency would have the potential to lead to a more significant safety concern. Specifically, the failure to include the appropriate criteria to identify and evaluate critical tasks during biennial requalification examinations could result in operators returning to licensed operator duties without being properly remediated and retested on performance deficiencies. Using Manual Chapter 0609, Attachment 0609.04, Appendix I, “Operator Requalification Human Performance Significance Determination Process,” starting at block 9, the finding was determined to be of very low safety significance (Green) because the finding is associated with licensee administration of an annual requalification operating test. The finding had a cross-cutting aspect in the area of human performance associated with the decision-making component because the licensee failed to make safety-significant or risk-significant decisions using a systematic process [H.1(a)].

Inspection Report# : [2013005](#) (*pdf*)

**Significance:**  Dec 31, 2013

Identified By: NRC

Item Type: FIN Finding

### **Flawed Job Performance Measures**

The inspectors identified a finding of very low safety significance for developing and administering an excessive number of flawed job performance measures during the 2012 and 2013 NRC annual operating tests, which resulted in invalidating several operators’ NRC annual operating tests. The inspectors reviewed all of the job performance measures that were developed and/or administered to the licensed operator staff for their annual operating tests. Greater than 20 percent of the job performance measures reviewed for both 2012 and 2013 were deemed to be flawed and inappropriate for an NRC-required operating test. This invalidated the operating tests for some of the licensed operators in both years. As part of their corrective action, Condition Report 2013-10673, the licensee retested the operators that were affected after the 2013 test, and analyzed the effect on site-wide human performance errors that the affected operators may have had after the 2012 operating test—there was no increase in human performance errors attributable to taking the flawed 2012 operating test.

Using Inspection Procedure 71111.11, Appendix C, “Annual Requalification Operating Test Quality,” more than 20 percent of the annual operating test job performance measures developed in 2012 and 2013 were flawed; therefore, this was a performance deficiency. In accordance with Manual Chapter 0612, “Power Reactor Inspection Reports,” the performance deficiency was more than minor, therefore, a finding because it affected the Initiating Events Cornerstone attribute of Human Performance, and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Manual Chapter 0609, Attachment 0609.04, Appendix I, “Operator Requalification Human Performance Significance Determination Process,” starting at block 6, the finding was determined to be of very low safety significance (Green) because: the finding involved operating test quality; less than 40 percent of the job performance measures were flawed; and less than 40 percent of the simulator scenarios were flawed. In addition, the NRC determined the finding had a human performance cross-cutting aspect associated with decision-making because the licensee did not use conservative assumptions in decision making when developing the flawed job performance measures that invalidated several operators’ annual operating tests [H.1(b)].

Inspection Report# : [2013005](#) (*pdf*)

## **Mitigating Systems**

**Significance:**  Feb 06, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Properly Evaluate Safety-Related Equipment Electrical Load Requirements when Verifying the Adequacy of Voltage from the Nuclear Steam Supply System Inverter/Rectifier**

The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which states, in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Specifically, prior to February 11, 2014, the licensee failed to adequately verify by analysis that safety-related nuclear steam supply system instrumentation loads would be capable of operating at the minimum inverter output voltage, when the inverter is fed from the station battery, and when considering the actual voltage drop to the load. In response to this issue, the licensee performed a preliminary voltage drop analysis that supported an immediate operability determination. This finding was entered into the licensee's corrective action program as Condition Report 14-2017.

The team determined that failure to maintain design control of the nuclear steam supply system instrumentation power supply load was a performance deficiency. This finding was more than minor because if left uncorrected, it would lead to a more significant safety concern. Specifically, the incorrect analysis resulted in a reasonable question of operability of nuclear steam supply system instrumentation to operate at the minimum inverter output voltage, when the inverter is fed from the station battery, and when the actual voltage drop to the load for that condition was considered. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. The team determined that this finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

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

**Significance:**  Feb 06, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Improper Sequencing of Maintenance of 4160 VAC Circuit Breakers Prior to As-Found Tests**

The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," which 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, prior to January 13, 2014, the licensee's preventive maintenance Procedures OPMPO5-NA-002, "4160V Gould Breaker Test," and OPMP05-NA-0018 "4160 Volt Gould HK Breaker Overhaul/Lubrication," failed to assure that the 4160 VAC Gould circuit breakers would perform satisfactorily in service when the licensee performed maintenance prior to completing as-found tests to verify the circuit breakers would function properly. In response to this issue, the licensee validated that the components had passed their required surveillance tests and remained operable. This finding was entered into the licensee's corrective action program as Condition Reports 14-738 and 14-1633.

The team determined that failure to establish a test and maintenance program which ensures that safety-related 4160 VAC Gould circuit breakers would perform satisfactorily in service was a performance deficiency. This finding was more than minor because if left uncorrected, it would lead to a more significant safety concern. Specifically, the failure to perform as-found tests prior to performing maintenance in preventive maintenance procedures was a significant programmatic deficiency which could cause unacceptable conditions to go

undetected. In accordance with Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, Exhibit 2, “Mitigating Systems Screening Questions,” the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. This finding had a crosscutting aspect in the area of human performance, documentation component because the licensee failed to create and maintain complete, accurate, and up-to-date documentation. [H.7]  
 Inspection Report# : [2013007](#) (pdf)

**Significance:** G Feb 06, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Establish an Adequate Test Program for Safety-Related 480 VAC Circuit Breakers**

The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” which 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, prior to January 13, 2014, the licensee’s preventative and post-maintenance procedures for safety-related 480 VAC Westinghouse DS circuit breakers failed to include manufacturers recommended testing of breaker control circuits at the minimum expected control voltage levels postulated to exist at the device terminals during design basis events. In response to this issue, the licensee validated that the components had passed their required surveillance tests and remained operable. This finding was entered into the licensee’s corrective action program as Condition Reports 11-4895 and 14-738.

The team determined that the failure to include manufacturers recommended testing of safety-related circuit breaker control circuits at the voltages postulated to exist at the device terminals during design basis events or to provide justification for not performing the tests was a performance deficiency. This finding was more than minor because if left uncorrected, it would lead to a more significant concern. Specifically, the failure to perform the breaker testing at reduced voltage using minimum expected control voltage levels could cause unacceptable conditions to go undetected. In accordance with Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, Exhibit 2, “Mitigating Systems Screening Questions,” the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. This finding had a crosscutting aspect in the area of problem identification and resolution, evaluation component because the licensee failed to thoroughly evaluate the issue to ensure that resolution addressed causes and extent of condition commensurate with their safety significance. [P.2]

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

**Significance:** G Feb 06, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Maintain Design Control of Safety Injection Pump Room Cooler**

The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” which states, in part, “Measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.” Specifically, prior to

February 13, 2014, documented requirements in purchase specification 3V259VS0005 were not correctly translated into specifications, drawings, and instructions evaluated in calculations MC-06482 and MC-06482A for the safety injection pump room coolers. In response to this issue, the licensee revised the associated calculations and established that the room coolers remained operable. This finding was entered into the licensee's corrective action program as Condition Report 14-2673.

The team determined that the failure to maintain design control of the safety injection pump room cooler was a performance deficiency. This finding was more than minor because it adversely affected the Mitigating Systems Cornerstone attribute of Design Control and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, not maintaining design control and performing a proper heat transfer calculation had the potential to challenge the availability, reliability, and capability of the safety injection pump room cooler and in turn the safety function of safety injection pumps. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. The team determined that this finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

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

**Significance:** G Feb 06, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Evaluate the Adequacy of Voltage Available at AF-19 Valve Motor to Close the Valve During Postulated High Energy Line Break Conditions**

The team identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which states, in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Specifically, prior to January 28, 2014, the licensee failed to adequately verify by analysis that the AF-19 valve motor had adequate voltage available to close the valve when required during postulated high energy line break conditions. In response to this issue, the licensee performed a preliminary battery sizing and voltage analysis and verified that the valve motor had sufficient voltage to close when required by the failure modes and effects analysis. This finding was entered into the licensee's corrective action program as Condition Report 14-1374.

The team determined that the failure to evaluate and translate the requirements for adequate voltage available at the AF-19 valve motor to close the valve during postulated high energy line break conditions was a performance deficiency. This finding was more than minor because if left uncorrected, it would lead to a more significant safety concern. Specifically, the failure to analyze and translate the relevant requirements resulted in a condition where there was a reasonable question on the capability of the valve to close when required during postulated high energy line break conditions. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions," the issue screened as having very low safety significance (Green) because it was a design or qualification deficiency that did not represent a loss of operability or functionality; did not represent an actual loss of safety function of the system or train; did not result in the loss of one or more trains of non-technical specification equipment; and did not screen as potentially risk significant due to seismic, flooding, or severe weather. The team determined that this finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.

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

**Significance:**  Oct 31, 2012

Identified By: NRC

Item Type: VIO Violation

### **Failure to Timely Correct Conditions Adverse to Fire Protection**

The team identified a violation of License Condition 2.E for the failure to correct a noncompliance. Procedure OPOP04-ZO-0001, "Control Room Evacuation," Revision 35, was not consistent with the post-fire safe shutdown analysis in that it failed to ensure the actions met critical time requirements. The licensee failed to implement timely corrective actions to correct this deficiency. Inspection Report 05000498/2011006 and 05000499/2011006 documented a violation involving the failure to implement and maintain in effect all provisions of the approved fire protection program. During this inspection, the team identified that the licensee had failed to restore compliance with its license condition within a reasonable time.

The licensee's failure to implement timely corrective actions to correct conditions adverse to fire protection as required by its Operations Quality Assurance Plan is a performance deficiency. This performance deficiency was of more than minor safety significance because it was associated with the mitigating systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events (such as fire) to prevent undesirable consequences. Specifically, the licensee failed to ensure reliability of its post-fire safe shutdown systems by demonstrating that it could achieve safe shutdown following a fire in the control room by using approved actions. The significance of this finding could not be evaluated using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because the performance deficiency involved a control room fire that led to control room evacuation. A senior reactor analyst determined that the upper bound for the overall change in core damage frequency that resulted from this performance deficiency was  $2.702E-7/\text{yr}$  and was not significant with respect to large early release frequency. The analyst therefore determined that this performance deficiency was of very low risk significance (Green). The team determined that the performance deficiency had a cross-cutting aspect in the corrective action component of the problem identification and resolution cross-cutting area because the licensee did not thoroughly evaluate the problem such that resolutions addressed the cause. Specifically, the licensee failed to take adequate corrective actions to ensure that operators could perform all necessary manual actions as approved prior to exceeding the regulatory requirements (P.1(c)).

Inspection Report# : [2012007](#) (pdf)

## **Barrier Integrity**

**Significance:**  Jun 29, 2013

Identified By: NRC

Item Type: FIN Finding

### **Inadequate Design Calculations for Spent Fuel Pool Mitigation Strategies**

The inspectors identified a Green finding for the licensee's failure to follow Procedure OPGP04-ZA-0307, "Preparation of Calculations," Revision 4. Specifically, two parts were not followed, step 3.1.5.4 states all design calculations SHALL be identified AND their sources indicated by providing an adequate title/description; and step 3.2.2 which instructs performing a peer check review of the calculation for completeness, clarity, and accuracy. As part of a routine walkdown of the spent fuel pool area, the inspectors identified several issues of concern regarding the licensee's spent fuel pool mitigation strategy equipment which implements the fill and/or spray strategy. Specifically, the as-designed equipment did not match the as-installed configuration and the as-designed calculations did not account for standard engineering practices to ensure that all calculation considerations were taken into account. The

licensee captured these issues in Condition Reports 13-3767 and 13-5006. Corrective actions included updating the calculations to include standard engineering practices and ensuring that the design matched the as-installed configuration.

The failure to follow Procedure OPGP04-ZA-0307 to ensure an adequate design calculation and review for accuracy was a performance deficiency. This finding was more than minor because it adversely affected the design control attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers such as fuel cladding protect the public from radionuclide releases caused by accidents or events. The inspectors performed the significance determination process using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," which evaluates the finding using Appendix L, "B.5.b Significance Determination Process", "Table 2 - Significance Characterization," and determined the finding was of very low safety significance because the finding did not result in an unrecoverable mitigating strategy due to the unavailability of post-accident cooling systems for the spent fuel pool. No cross-cutting aspects are assigned to this finding because the calculations were performed in 2007 and 2008 and are not considered indicative of current performance.

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

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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 : May 30, 2014