Comanche Peak 2
4Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2014
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Follow the Troubleshooting Activities Procedure Results in a Manual Turbine Runback
The inspectors reviewed a self-revealing finding for the licensee's failure to follow the troubleshooting activities procedure while working on the condensate system alarm and control circuit. The troubleshooting activities caused the condensate low pressure heater bypass valve to open resulting in a secondary plant transient. Operators responded to the event by manually initiating a turbine runback and then stabilized the plant. The licensee entered the finding into the corrective action program as Condition Report CR-2014-001268.

The failure to follow the troubleshooting activities procedure was a performance deficiency. The performance deficiency was more than minor because it affected the human performance attribute of the Initiating Events cornerstone and adversely 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. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 1, "Initiating Events Screening Questions," the finding was determined to be of very low safety significance (Green) because the finding did not cause a reactor trip or the loss of mitigation equipment. The finding has a human performance cross-cutting aspect associated with documentation because the licensee failed to ensure that plant activities were governed by high-quality procedures [H.7].

Inspection Report# : 2014005 *(pdf)*

Significance: G Jun 26, 2014
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Follow the Site Design Modification Procedures.
The inspectors reviewed a self-revealing finding for the failure to follow the design modification process. The licensee implemented a design modification using incorrect technical information. The personnel who conducted the design modification walkdowns did not fully understand their responsibility and the licensee's work organization did not ensure that anyone actually verified the physical details of the cable route. As a result, the design modification was inadequate and an incorrect cable was cut which caused a loss of all offsite power to the safety related 6.9 kV busses on both units. The licensee suspended the modification activities, repaired the damaged offsite power cable, and restored offsite power to the safety-related 6.9 kV busses. The licensee entered the finding into the corrective action program as Condition Report CR 2013-012287.

The failure to follow the electronic design change process procedure was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the Initiating Events Cornerstone and adversely 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. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 1, "Initiating

Event Screening Questions," the finding was determined to be of very low safety significance (Green) because although the finding involved the complete loss of a support system that caused an initiating event, it did not involve the loss of affected mitigation equipment. The finding has a human performance cross-cutting aspect associated with field presence because the licensee failed to ensure proper oversight of contractors to ensure deviations from standards and expectations were promptly corrected [H.2].

Inspection Report# : 2014003 *(pdf)*

Significance: G Jun 26, 2014
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Follow Procedure to Provide Adequate Work Instructions.
The inspectors reviewed a self-revealing finding for the failure to properly plan and review work activities to ensure equipment and personnel safety. Specifically, the licensee failed to ensure the work instructions met the requirements of Procedure STA-606, "Control of Maintenance and Work Activities," Revision 32. As a result, during the implementation of a modification, personnel used an inadequate work instruction and cut the incorrect cable which caused a loss of all offsite power to the safety related 6.9 kV busses on both units. The licensee suspended the modification activities, repaired the damaged offsite power cable, and restored offsite power to the safety-related 6.9 kV busses. The licensee entered the finding into the corrective action program as Condition Report CR-2013-012287.

The failure to follow procedure and provide adequate work instructions was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Initiating Events Cornerstone and adversely 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. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 1, "Initiating Event Screening Questions," the finding was determined to be of very low safety significance (Green) because although the finding involved the complete loss of a support system that caused an initiating event, it did not involve the loss of affected mitigation equipment. The finding has a human performance cross-cutting aspect associated with avoiding complacency because the licensee failed to ensure that work planning personnel planned for the possibility of mistakes and latent issues and did not implement appropriate error reduction tools [H.12].

Inspection Report# : 2014003 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Procedure for Boundary Valve Leakage Testing
The inspectors reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to follow instructions for performing surveillance testing of the reactor coolant loop cold leg injection boundary valves. The test procedure had a prerequisite for the plant to be in mode 4 or 5 due to the test lineup. The licensee performed the test in mode 3 which isolated the residual heat removal system flow to loops 3 and 4. As a result, both trains of residual heat removal were inoperable. The licensee revised the procedure for the plant conditions and re-performed the test. The licensee entered the finding into the corrective action program as Condition Report CR-2014-005254.

The licensee's failure to follow procedure for performing surveillance testing of the reactor coolant loop cold leg injection boundary valves was a performance deficiency. The performance deficiency 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 availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was determined to require a detailed risk evaluation because the finding represented a loss of function for the residual heat removal system. A senior reactor analyst performed a bounding detailed risk evaluation and determined the finding to be of very low safety significance (Green). The finding has a human performance cross-cutting aspect associated with challenging the unknown because the licensee failed to stop when faced with uncertain conditions and evaluate risks before proceeding [H.11].

Inspection Report# : 2014005 *(pdf)*

Significance: G Sep 26, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Goals and Monitor the Performance of the Uninterruptible Power Supply Air Conditioning System
The inspectors identified a non-cited violation of 10 CFR 50.65(a)(1) for the failure to establish performance goals and perform monitoring to ensure the uninterruptible power supply air conditioning unit X-01 was capable of performing its intended function. Specifically, the licensee failed to include unavailability hours that caused the equipment to exceed the performance criteria. The licensee planned to establish goals for the system. The licensee entered the finding into the corrective action program as Condition Report CR-2014-010188.

The failure to establish goals and monitor the performance of the uninterruptible power supply air conditioning system was a performance deficiency. The performance deficiency 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 and reliability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 2, "Mitigating System Screening Questions," the finding was determined to be of very low safety significance (Green) because the finding did not represent an actual loss of safety function of a system 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 procedure adherence because the engineer failed to use human error reduction techniques when following procedure [H.8].

Inspection Report# : 2014004 *(pdf)*

Significance: G Sep 26, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Acceptance Criteria for Inservice Testing of Auxiliary Feedwater Discharge Check Valves
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the failure to incorporate adequate acceptance limits in a written procedure to demonstrate components will perform satisfactorily. The licensee used acceptance criteria for inservice testing that did not demonstrate successful performance of the test. Specifically, the licensee failed to use appropriate acceptance limits which would have

identified a failed check valve when testing auxiliary feedwater discharge check valves. The licensee revised the inadequate test procedure. The licensee entered the finding into the corrective action program as Condition Report CR-2014-010082.

The licensee's failure to incorporate adequate acceptance limits in a written procedure to demonstrate components perform satisfactorily 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 availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the finding was determined to be of very low safety significance (Green) because although the finding was a deficiency affecting the design or qualification of a mitigating system, the system maintained its operability and functionality. The inspectors determined that the finding was not representative of current licensee performance and no cross-cutting aspect was assigned.
Inspection Report# : 2014004 *(pdf)*

Significance: G Jun 26, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedure for Brazing Copper Tubing
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 procedure for brazing copper joints. Specifically, personnel failed to follow procedure and exercise sufficient care to assure the copper tubing was not overheated during a brazing activity. As a result, personnel overheated copper joints and caused the inoperability of an uninterruptible power supply air conditioning unit when the component developed a leak. The licensee repaired the leak to the uninterruptible power supply air conditioning unit. The licensee entered the finding into the corrective action program as Condition Report CR 2013 002298.

The failure to follow procedure for brazing copper tubing was a performance deficiency. The performance deficiency 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 availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 2, "Mitigating System Screening Questions," the finding was determined to be of very low safety significance (Green) because the finding did not represent an actual loss of at least a single train of equipment for greater than its technical specification allowed outage time. The inspectors determined that the finding was not representative of current license performance and no cross-cutting aspect was assigned.

Inspection Report# : 2014003 *(pdf)*

Significance: G Jun 26, 2014
Identified By: NRC
Item Type: VIO Violation
Failure to Correct Fire Protection Violations in a Timely Manner.
The inspectors identified a violation of License Condition 2.G for the failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the inspectors identified two examples where the licensee failed to implement corrective actions and restore compliance in a timely manner for two non-cited violations associated with the fire protection program. The licensee implemented compensatory measures that included: hourly fire watches, changes to the safe shutdown procedures, and administrative changes to the fire protection program. The licensee entered the finding into the corrective action program as Condition Report 2014-007713.

The failure to implement corrective actions and restore compliance in a timely manner for two violations associated with the fire protection program was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the potential loss of the credited charging pump or spurious opening of a power operated relief valve adversely affected the availability, reliability, and capability of the systems required to achieve and maintain safe shutdown in the event of a fire. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected the ability to reach and maintain safe-shutdown conditions in case of a fire. A senior reactor analyst performed a Phase 3 evaluation to determine the risk significance of this finding. The senior reactor analyst determined this finding was of very low safety significance (Green). The finding has a human performance cross-cutting aspect associated with work management because the licensee failed to include the identification and management of risk commensurate to the work performed [H.5].

Inspection Report# : 2014003 *(pdf)*

Significance: G Mar 19, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Update Procedures for Cable Label Controls
The team reviewed a Green self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings," for the failure to ensure that quality related procedures provide adequate guidance for labeling and terminating cables during implementation of circuit modifications. Specifically, procedure CMP-EL-1006, "Cable Terminations," Revision 3, did not prescribe the appropriate human performance standards and cable label controls when installing new cable. As a result, a wiring error caused one of the two turbine-driven auxiliary feedwater pump steam supply valves to fail open when the hot shutdown panel transfer/isolation switch was taken to the remote position. The licensee entered this into the corrective action program as condition report CR-2013-000140. The corrective actions included: confirming that the same error did not exist for the other steam supply valve or for the Unit 1 transfer switch, retiring procedure CMP-EL-1006 and revising other maintenance section generic procedures that will be used to implement future circuit modifications.

The licensee's failure to ensure that procedures provide adequate guidance for labeling and terminating cables during circuit modifications was a performance deficiency. The finding was more than minor because if left uncorrected this could have the potential to lead to a more significant safety concern. Specifically, operation of the hot shutdown panel auxiliary feedwater transfer/isolation switch cannot be reliably performed. Using NRC Inspection Manual Chapter 0609, Appendix F, Attachment 1, "Part 1: Fire Protection SDP Phase 1 Worksheet," dated September 30, 2013, the finding was determined to be of very low safety significance (Green), by answering Step 1.3.1, Question 2, because the finding did not affect the reactor to be able to reach and maintain a safe shutdown condition. The finding had a human performance cross-cutting aspect in resources because leaders failed to ensure that personnel and procedures were available and adequate to support nuclear safety. [H.1]

Inspection Report# : 2014008 *(pdf)*

Barrier Integrity

Significance: G Jun 26, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow 10 CFR 50.59 for a Change to the Spent Fuel Pool Configuration.
The inspectors identified a non-cited violation of 10 CFR 50.59, "Changes, Tests, and Experiments," for failure to conduct an adequate safety evaluation and submit a license amendment for a change to the facility that required a technical specification amendment. Specifically, the licensee changed Procedure NUC-211, "Surveillance of Region II Storage Limitations," Revision 1, to allow for storage of uprated fuel in Region II (high density racks) of the spent fuel pool using a methodology for fuel burnup penalties that had not been previously approved by the NRC and therefore, required an amendment to Technical Specification 3.7.17 "Spent Fuel Assembly Storage" prior to implementation. Subsequently, the licensee stopped all fuel movement in Region II of the spent fuel pool unless notifying the NRC prior to the movement. The licensee entered the finding into the corrective action program as Condition Report CR-2014-004693.

The failure to perform an adequate 10 CFR 50.59 evaluation and obtain prior NRC approval for a change to the facility that involved a change to the technical specifications was a performance deficiency. The inspectors concluded that this issue involved traditional enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. This performance deficiency is more than minor because it was associated with the reactivity control attribute of the Barrier Integrity Cornerstone and adversely the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Because the significance determination process does not directly address spent fuel pool criticality, a senior reactor analyst evaluated this issue using Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria." Based on calculations provided by the licensee, the analyst determined that even with all uncertainties included in the calculations, the spent fuel pools would remain subcritical under all conditions, including a complete dilution of the borated water. The analyst qualitatively considered a completed dilution of the spent fuel pools to be a very low probability event. Therefore, the analyst concluded that this issue was of very low safety significance (Green). Because this issue was considered to be Green, it is treated as a Severity Level IV violation in traditional enforcement. The inspectors determined that the finding was not representative of current license performance and no cross-cutting aspect was assigned.

Inspection Report# : 2014003 *(pdf)*

Significance: G Jun 26, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Provide Appropriate Instructions for Filling the Component Cooling Water System.
The inspectors reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to have documented instructions of a type appropriate to the circumstances when performing an activity affecting quality. Specifically, the licensee failed to have appropriate instructions for filling a Unit 2 component cooling water heat exchanger. As a result, component cooling water was inadvertently isolated spent fuel pool heat exchanger X-02. The operators immediately stopped the filling activity and restored cooling water to the spent fuel pool heat exchanger. The licensee entered the finding into the corrective action procedure as Condition Report CR-2014-004111.

The failure to have appropriate instructions for filling a Unit 2 component cooling water heat exchanger was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that spent fuel pool design barriers protect the public from radionuclide releases caused by accidents or events. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings,"

and Appendix A, Exhibit 3, “Barrier Integrity Screening Questions,” the finding was determined to be of very low safety significance (Green) because the finding did not adversely affect decay heat removal capabilities from the spent fuel pool causing the pool temperature to exceed the maximum analyzed temperature limit specified in the site-specific licensing basis. The finding has a human performance cross-cutting aspect associated with work management because the licensee failed to ensure that the work process identified and managed the risk commensurate with the work [H.5].

Inspection Report# : 2014003 *(pdf)*

Emergency Preparedness

Significance: G Sep 26, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Maintenance of a Standard Action Level Scheme for Main Steam Line Monitors
The inspectors identified a non-cited violation of 10 CFR 50.54(q)(2) for the failure to follow and maintain the effectiveness of an emergency plan that meets the requirements of planning standard 50.47(b)(4), which requires that a standard emergency classification and action level scheme is in use by the licensee. Specifically, several main steam line monitors were out of service for extended periods of time without apparent contingency actions in place in order to be able to declare an emergency. The licensee entered the finding into the corrective action program as Condition Report CR-2014-005874.

The failure to maintain a standard emergency classification and action level scheme for the initiating condition requiring the main steam line monitors was a performance deficiency.The performance deficiency was more than minor because it affected the licensee’s ability to implement adequate measures to protect the health and safety of the public. Using Inspection Manual Chapter 0609, Appendix B, “Emergency Preparedness Significance

Determination Process,” and Table 5.4-1, “Significance Examples 50.47(b)(4), the finding was determined to be of very low safety significance (Green) because it was a failure to comply with NRC requirements and was not a degraded risk significant planning standard function. The planning standard function was not degraded because of other emergency action levels; an appropriate declaration could be made in an accurate and timely manner. This finding has a problem identification and resolution cross-cutting aspect associated with evaluation because the licensee failed to thoroughly evaluate the extent of condition of the inoperable monitors on the emergency plan and scheme for declaring emergencies [P.2].
Inspection Report# : 2014004 *(pdf)*

Occupational Radiation Safety

Significance: G Jun 26, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Adequately Brief Workers on Radiological Conditions Prior to Entry into High Radiation Areas.
The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.7.1 resulting from the licensee’s failure to control high radiation areas with radiation levels of 100 millirem per hour or greater on three

separate occasions. In each instance, the licensee failed to adequately inform the worker of current radiological dose rates prior to entry and the worker entered a posted high radiation area without proper knowledge of the radiological conditions (dose rates). Consequently, the workers received unanticipated high dose rate alarms on their electronic alarming dosimeters at 563 millirem per hour, 274 millirem per hour, and at 750 millirem per hour, respectively. As immediate corrective actions, the licensee performed follow-up surveys, coached the involved individuals, and reviewed the radiologically controlled area entry card requirements. The licensee entered the three issues into the corrective action program as Condition Reports CR 2013-004154, CR-2014-003464, and CR-2014-003997.

The failure to provide workers with proper knowledge of high radiation area radiological conditions prior to entry is a performance deficiency. The performance deficiency is more than minor because it impacted the program and process attribute (exposure control) of the Occupational Radiation Safety Cornerstone and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, worker entry into high radiation areas without knowledge of the radiological conditions placed them at increased risk for unnecessary radiation exposure. Using Inspection Manual Chapter 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process,” the finding was determined to be of very low safety significance (Green) because: (1) it was not an as low as is reasonably achievable finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. The finding has a human performance cross-cutting aspect associated with teamwork because the workers failed to demonstrate and execute a strong sense of communication and collaboration in connection with the operational activities involved in the finding to ensure nuclear safety was maintained [H.4].

Inspection Report# : 2014003 *(pdf)*

Public Radiation Safety

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.

Miscellaneous

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