

Comanche Peak 1

2Q/2008 Plant Inspection Findings

Initiating Events

Significance:  Sep 25, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to appropriately secure adjustment set screw resulted in RHR valve failure.

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, for failure to provide work instructions or procedures appropriate to the circumstances. Specifically, Work Order 3-05-333517-01 and Procedure INC-2085, "Rework and Replacement of I&C [Instrumentation and Control] Equipment," Revision, 3, directed the replacement of the positioner for Valve 1-HCV-0607, but did not contain appropriate instructions for applying loctite or other measures to ensure the adjustment screw remained securely in place, despite operational experience in 1999, that indicated this action was necessary. As a result Valve 1-HCV-0607 failed to operate when called upon.

When operators attempted to place the Train B residual heat removal system in service, Valve 1-HCV-0607, the Train B residual heat removal heat exchanger outlet valve would not open because the Bailey Type AV1 positioner had malfunctioned. The pilot valve stem adjustment screw (that had been replaced during a recent outage) became loose and repositioned such that it prevented the valve from stroking open. The licensee had received and reviewed 1999 operating experience information that a loose pilot valve adjustment screw was determined to be the main cause of a Bailey positioner failure that led to a reactor trip at another facility. However, the team determined that the licensee had not taken appropriate action to prevent such failures at Comanche Peak Steam Electric Station, resulting in the failure of Valve 1-HCV-0607 when called upon.

The team determined that the failure of the licensee to adequately implement operating experience into maintenance procedures was a performance deficiency. The performance deficiency had plant impact because it caused a loss of one train of a safety function (residual heat removal). The finding was determined to be more than minor because it is associated with the equipment performance attribute for assuring availability and reliability and affected the initiating events cornerstone to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Using Appendix G, "Shutdown Operations Significance Determination Process," Checklist 2, of Manual Chapter 0609, "Significance Determination Process," the significance of the finding was determined to be Green, very low safety significance, because one train of residual heat removal was operable and at least two steam generators were available for decay heat removal.

Inspection Report# : [2007007](#) (*pdf*)

Mitigating Systems

Significance:  Jun 06, 2008

Identified By: Self-Revealing

Item Type: VIO Violation

Painting Activities Result in Inoperability of Emergency Diesel Generator

The U.S. Nuclear Regulatory Commission performed this supplemental inspection to assess the licensee's evaluation associated with a White finding (failure of Unit 1 Train B Emergency Diesel Generator 1-02) in the first quarter of 2008. The primary reason for this finding being characterized as White was based on the results of a Phase 3 analysis performed by a region-based senior reactor analyst. The failure of Emergency Diesel Generator 1-02 was attributed to paint being deposited in a location that caused the EDG to fail to start on demand.

Inspection Report# : [2008009](#) (*pdf*)

Significance:  May 22, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Fire Suppression Systems

A noncited violation of Unit 1, License Condition 2.G, "Fire Protection," was identified for the fire suppression systems in Fire Zones SE16 and SE18 (remote safety-related panels/Train B switchgear rooms) not being installed in accordance with the approved fire protection program. The fire suppression systems in Fire Zones SE16 and SE18 are manually actuated dry pipe deluge (pre-action) systems with closed sprinkler heads. The actual configuration did not provide protection in the areas containing one train of safe shutdown cables enclosed in 1-hour fire barriers. The team determined that the fire suppression systems in Fire Zones SE16 and SE18 were not installed in accordance with the configurations in Calculation 0210-63-0064, "Partial Sprinkler Coverage Evaluation." The configurations in this calculation were approved by the NRC as the basis for allowing suppression systems with less than full area coverage. The configuration also did not meet the National Fire Protection Association codes. The licensee entered this finding into its corrective action program under Smart Form SMF-2008-000324-00.

Failure to ensure the installed fire suppression systems met the requirements of the approved fire protection program was a performance deficiency. This finding was more than minor because it is associated with the Protection Against External Factors attribute of the Mitigating Systems Cornerstone and could affect the availability, reliability, and capability of systems that respond to fire events to prevent undesirable consequences. The significance of this finding was assessed using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." In completing the Fire Protection Significance Determination Process, Phase 1 and 2 worksheets, it was determined that no potential ignition source could potentially have a direct impact on the cable raceways protected by fire barriers or their supports and that the largest potential ignition sources in the fire zones could not form a hot gas layer sufficient to impact the protected cable raceways or their supports. The evaluation indicated that the finding had a very low safety significance (Green) during the Phase 2 significance determination process. (Section 1R05.4)

Inspection Report# : [2008006 \(pdf\)](#)

Significance:  May 22, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Post-Fire Safe Shutdown Procedures

A noncited violation of Technical Specification 5.4.1.d was identified concerning the failure to maintain adequate written procedures covering fire protection program implementation. Specifically, procedures for operation of Valves 1-8000A and 1-8000B (power-operated relief valve block valves) and Valves 1-8701A and 1-8702B (residual heat removal loop hot-leg recirculation valves) had local manual actions that might not be completed successfully because of potential fire damage. Procedures ABN-804A, "Response to a Fire in the Safeguards Building," Revision 5, and ABN 806A, "Response to a Fire in the Electrical and Control Building," Revision 5, directed operators to open the valves from their electrical power supplies because of potential fire damage to control circuits between the main control room and the electrical breakers. Plant operators were instructed to depress a breaker contactor to stroke the valve open. After the operator depresses the contactor, control power is required to hold the contactor closed while the valve strokes. The team identified that potential fire damage to control circuits between the main control room and the electrical breakers could cause a control power fuse to fail, preventing the valve from stroking. The licensee has entered this issue into their corrective action program as Smart Form SMF 2008-000311-00.

Failure to provide adequate procedures for the implementation of the fire protection program was a performance deficiency. This finding was more than minor because it is associated with the Protection Against External Factors attribute of the Mitigating Systems Cornerstone and could affect the availability, reliability, and capability of systems that respond to fire events to prevent undesirable consequences. The significance of this finding was assessed using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." The evaluation determined that the procedural deficiency only affected valves required to reach and maintain cold shutdown conditions; therefore, the finding screened as having very low safety significance (Green).

Inspection Report# : [2008006 \(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Oct 25, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Evaluate Radiological Conditions

The inspector reviewed a self-revealing non-cited violation of 10 CFR 20.1501(a) for failure to conduct a radiological survey. Specifically, on April 16, 2007, a worker's electronic dosimeter alarmed when the individual attempted to move a bag containing a small vacuum cleaner from a posted contaminated and radiation area. The bag of materials had not been surveyed for radiation levels and therefore had not been labeled to indicate the potential hazard. The bag was subsequently surveyed and found to have radiation levels of 600 millirem per hour on contact and 150 millirem per hour at 30 centimeters from the surface. Corrective actions include counseling of personnel, evaluation of possible organizational changes, and generation of a training request to include this event in future training.

The failure to conduct a radiological survey is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of worker health and safety from exposure to radiation. The failure to perform the radiation survey led to a worker receiving unintended and additional exposure. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it did not involve: (1) as low as is reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding has a crosscutting component associated with human performance and work coordination because the licensee failed to keep workers apprised of work status and plant conditions that may affect work activities prior to removing contaminated items from the reactor containment building. (H.3.(b3)).

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

Public Radiation Safety

Significance:  Feb 28, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

"Failure to ship radioactive material correctly"

The team reviewed a self-revealing, noncited violation of 10 CFR 71.5, which occurred when the licensee failed to ship radioactive material correctly. A radioactive shipment classified as an "excepted package-limited quantity" exceeded the external dose rate limit of 0.5 millirem per hour on the surface of the package. The package recipient identified dose rates of 0.9 millirem per hour on the exterior surface of the package and notified the licensee of the problem. The licensee revised its procedure to correct for this problem by limiting the inner package dose rate to 0.3 millirem per hour, thus reducing the risk for the external dose rate to be more than 0.5 millirem per hour. The finding was placed into the licensee's corrective action program as Smart Form SMF-2006-2403.

The finding is greater than minor because it was associated with a Public Radiation Safety cornerstone attribute (transportation program) and it affected the associated cornerstone objective because the failure to correctly ship radioactive material decreases the licensee's assurance that the public will not receive unnecessary dose. However, this finding cannot be evaluated by the Public Radiation Safety Significance Determination Process because it did not involve radioactive shipments classified as Schedule 5 through 11, as described in NUREG-1660, and it did not fit traditional enforcement. Therefore, the finding was reviewed by NRC management using Inspection Manual Chapter

0609, Appendix M, and determined to be of very low safety significance because the package was not accessible by the public. Additionally, this finding has a cross cutting aspect in the area of human performance, work practices component, because the worker preparing the shipment did not use self checking as an error prevention technique to ensure that the package did not exceed the dose rate limit (H4.a).

Inspection Report# : [2008007](#) (*pdf*)

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Sep 25, 2007

Identified By: NRC

Item Type: FIN Finding

Problem Identification and Resolution Team Inspection Results

The team reviewed approximately 189 risk significant issues, apparent and root cause analyses, and other related documents, to assess the effectiveness of the licensee's problem identification and resolution processes and systems. The team concluded that the licensee's management systems were effective, although seven examples occurred during the assessment period of failure to implement appropriate and timely corrective actions. Overall, corrective actions were appropriate to the circumstances. The licensee implemented an effective program for evaluating operational experience, although the team identified one example where ineffective use of operating experience led to a valve becoming inoperable.

The team concluded that the licensee maintained an overall safety-conscious work environment. However, based on interviews, concerns with trust in management and the ability to raise issues above direct supervision existed within the security force. A majority of security officers interviewed stated that although they would issue smart forms or inform their direct supervision with concerns, they would be hesitant to elevate issues. Individuals interviewed (outside of the security organization) were comfortable raising safety issues and elevating them to appropriate levels of management as necessary. The team concluded that the employee concerns program (SafeTeam) effectively resolved safety issues raised by plant and contract personnel. Plant personnel interviewed generally considered the employee concerns program a viable option to pursue safety issues. However, the majority of security force personnel interviewed lacked confidence in the SafeTeam's ability to resolve issues or maintain confidentiality.

The licensee overall performed effective and critical self-assessments. However, a licensee contract employee safety culture survey performed during this assessment period failed to identify the above concerns within the security force. Licensee management stated that a new safety culture survey was planned (with emphasis on ensuring a representative sample within the security force) for the fall of 2007.

Inspection Report# : [2007007](#) (*pdf*)

Last modified : August 29, 2008