

Comanche Peak 2

4Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Manage Risk During Refueling Outages

Green. The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4), “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” for the licensee’s failure to adequately manage the increase in risk associated with the potential for a loss of decay heat removal during refueling outages. Specifically, the licensee implemented a risk management action that did not reduce the risk, but instead called for placing a safety injection pump in service during periods where this action is prohibited by plant’s technical specifications for low temperature over pressure protection. The inspectors determined this was an ineffective risk management action because the use of a safety injection pump during low pressure and temperature conditions would place the plant in an unanalyzed condition, resulting in an increase in risk. As an immediate corrective action, the licensee initiated Condition Report CR-2015-009109 to evaluate appropriate risk management actions. This finding was entered into the licensee’s corrective action program as Condition Report CR-2015-009109.

The failure to manage the increase in risk associated with the potential for a loss of decay heat removal during refueling activities is a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the procedure quality attribute of the Initiating Events Cornerstone 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. Using Inspection Manual Chapter 0609, Appendix K, “Maintenance Risk Assessment and Risk Management Significance Determination Process,” dated May 19, 2005, Flowchart 1, “Assessment of Risk Deficit,” the inspectors determined the need to calculate the risk deficit to determine the significance of this issue. A senior reactor analyst performed a bounding qualitative assessment and determined the incremental core damage probability deficit was less than 1E-6 and the incremental large early release probability deficit was less than 1E-7, based on the availability of additional equipment to mitigate the loss of decay heat removal. In accordance with Flowchart 1 in Appendix K, because incremental core damage probability deficit was less than 1E-6 and incremental large early release probability deficit was less than 1E-7, the finding screened as having very low safety significance (Green). The finding has a human performance cross-cutting aspect associated with bases for decisions, in that, the licensee failed to ensure that operations leadership adequately communicate potential problems with the risk management action to start a safety injection pump when in a mode of applicability for low temperature over pressure protection [H.10].

Inspection Report# : [2016003](#) (*pdf*)

Significance: G Sep 15, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate the Suitability of Teflon Gaskets in a Safety-Related Pressure Boundary

The inspectors identified a Green, non-cited violation of 10 CFR 50 Appendix B, Criterion III, “Design Control,” which requires, in part, that measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety related functions of the

structures, systems and components. Specifically, from November 25, 2014, to September 15, 2016, the licensee failed to appropriately evaluate the suitability of polytetrafluoroethylene (PTFE) gaskets in pressure indication diaphragm assemblies that form the pressure boundary of the chemical and volume control system. In response to this issue, the licensee immediately isolated all affected diaphragm seal assemblies from the safety-related pressure boundary of the chemical and volume control system. This condition was entered into the corrective action program as Condition Reports CR-2016-008180 and CR-2016-008215.

The inspectors determined that the failure to meet 10 CFR 50, Appendix B, Criterion III, "Design Control" was performance deficiency. The performance deficiency was more than minor because the finding is associated with the equipment performance attribute of the Initiating Events cornerstone and adversely affects the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown. Specifically, in the event of an accident with 1% core damage, the high radiation environment of the centrifugal charging pump rooms would cause degradation to Teflon gaskets in pressure indication diaphragm assemblies, which would potentially cause an intersystem loss-of-coolant accident through the safety-related chemical and volume control system pressure boundary. Using the Manual Chapter 0609, Appendix A, Significance Determination Process for Findings At-power, Exhibit 1, "Initiating Events Screening Questions," the finding screens to a detailed risk evaluation because, after a reasonable assessment of degradation, the finding could have an effect on systems used to mitigate a loss-of-cooling accident resulting in a total loss of their function (e.g. intersystem loss-of-coolant accident). A senior reactor analyst performed a qualitative detailed risk evaluation. The analyst determined that the finding was of very low safety significance (Green). The inspectors determined that the most significant contributor to this finding had an Evaluation cross-cutting aspect in the area of problem identification and resolution because the licensee failed to thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, in November 2014, the licensee's engineering department failed to properly evaluate the effects of radiation on the PTFE gasket, as documented in Condition Report CR 2014 012353. [P.2] (Section 1R17.2.b)

Inspection Report# : [2016007](#) (pdf)

Mitigating Systems

Significance:  Sep 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Monitor Feedwater System Check Valve Performance

The inspectors identified a non-cited violation of 10 CFR 50.65(a)(2), "Requirements for monitoring the effectiveness of maintenance at nuclear power plants." Specifically, the licensee failed to demonstrate that the performance of the Unit 2 auxiliary feedwater check valves was being effectively controlled through the performance of appropriate preventive maintenance. The licensee's failure to perform appropriate maintenance resulted in several failures of the check valves. The licensee entered this issue into corrective action program as CR-2016-008312.

The licensee's failure to effectively monitor the performance of maintenance rule scoped equipment in accordance with 10 CFR 50.65(a)(2) was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to demonstrate that the performance of the Unit 2 auxiliary feedwater check valves was being effectively controlled through the performance of appropriate preventive maintenance which resulted in failures of the valves. Using Inspection Manual

Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, inspectors determined that this finding was of very low safety significance (Green) because the finding (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality, (2) did not represent a loss of system and/or function, (3) did not represent an actual loss of function of at least a single train for longer than its allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time, and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant for greater than 24 hours in accordance with the licensee's maintenance rule program. A cross-cutting aspect was not assigned to this finding because the performance deficiency occurred in 1996, and therefore, is not indicative of current licensee performance.

Inspection Report# : [2016003](#) (*pdf*)

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Correct Conditions Adverse to Quality

The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," associated with the licensee's failure to correct a condition adverse to quality in safety-related equipment. Specifically, following an in-service testing failure of auxiliary feedwater check valve 2FW-0191 in November 2012, the licensee performed an operability evaluation of the auxiliary feedwater system. However, the inspectors identified that the licensee failed to take corrective action to address the condition adverse to quality that resulted in the valve failing to seat properly. Consequently, the same valve failed a subsequent inservice test in November 2015. Following discovery of this issue, the licensee performed an operability determination that established a reasonable expectation of operability pending implementation of corrective actions. The licensee entered this issue into corrective action program as CR-2015-10961.

The licensee's failure to correct a condition adverse to quality was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

Specifically, the licensee failed to correct auxiliary feedwater check valve 2FW-0191 failure to seat in November 2012 resulting in an additional failure in November 2015. Using Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012, inspectors determined that this finding was of very low safety significance (Green) because the finding (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality, (2) did not represent a loss of system and/or function, (3) did not represent an actual loss of function of at least a single train for longer than its allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time, and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant for greater than 24 hours in accordance with the licensee's maintenance rule program. The finding has a problem identification and resolution cross-cutting aspect associated with evaluation, in that, the licensee failed to thoroughly evaluate issues to ensure that resolutions address extent of conditions. Specifically, the licensee failed to appropriately classify the issue of the check valve not seating and recognize this as a degraded condition [P.2].

Inspection Report# : [2016002](#) (*pdf*)

Significance:  Nov 13, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Evaluate the Lack of Missile Protection on the Turbine Driven Auxiliary Feedwater Pumps' Steam

Exhaust Piping

Green. The team identified a cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to evaluate the lack of missile protection on the turbine driven auxiliary feedwater pumps' steam exhaust piping. Specifically, since June 13, 2012, the licensee failed to verify the adequacy of design of the turbine driven auxiliary feedwater pumps' steam exhaust piping to withstand impact from a tornado driven missile hazard, or to evaluate for exemption from missile protection requirements using an approved methodology. This issue does not represent an immediate safety concern because the licensee performed an operability evaluation, which established a reasonable expectation of operability. The licensee entered this issue into the corrective action program for resolution as Condition Report CR-2015-007869.

The licensee's failure to analyze the effects of a tornado missile strike on the turbine driven auxiliary feedwater pumps' steam exhaust piping was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events factors attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to evaluate a design nonconformance on the turbine driven auxiliary feedwater pumps' steam exhaust piping for lack of missile protection. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," dated June 19, 2012, the team determined that the finding is of very low safety significance (Green) because (1) the finding was not a deficiency affecting the design or qualification of a mitigating system; (2) the finding did not represent a loss of system and/or function; (3) the finding did not represent an actual loss of function of a single train for greater than its technical specification allowed outage time; and (4) the finding does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. The finding has a human performance cross-cutting aspect associated with conservative bias because individuals failed to use decision making practices that emphasize prudent choices over those that are simply allowable [H.14]. (Section 4OA2.5a)

Inspection Report# : [2015008](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Determine Dose Rates Prior to Allowing Entry into a High Radiation Area

The inspectors reviewed a self-revealed non-cited violation of Technical Specification 5.7.1.e associated with the licensee allowing a worker access into the 2-077-B penetration valve room, a high radiation area, without an adequate knowledge of the radiological conditions. Specifically, the licensee briefed the worker on the conditions with outdated

radiation survey information even though the 2-077-B penetration valve room was subject to changing radiological conditions. As a result, an individual entered areas with general area dose rates of 210 mrem per hour rather than the briefed dose rates of less than 50 mrem per hour. This issue was entered into the licensee's corrective action program as Condition Report CR-2015-010211. Corrective actions included performing follow-up radiation surveys and implementing improvements to the high radiation area access control program.

The inspectors determined that allowing a worker access into a high radiation without an adequate knowledge of the radiological conditions was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it affected the program and process attribute 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, entry into a high radiation area without adequate knowledge of the radiological conditions placed the individual at risk for unnecessary exposure. The finding was assessed using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," issued August 19, 2008, and was determined to be of very low safety significance (Green) because the performance deficiency was not an ALARA planning issue, there was not an overexposure nor substantial potential for an overexposure, and the licensee's ability to assess dose was not compromised. The finding has a human performance cross-cutting aspect associated with work management, because the organization failed to implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority [H.5].
Inspection Report# : [2016002](#) (*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.

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Miscellaneous

Significance: N/A Sep 29, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Update FSAR Section 8.3.1.1.11

The inspectors identified a Severity Level IV non-cited violation of 10 CFR50.71(e) which requires, in part, that licensee shall update periodically the final safety analysis report originally submitted as part of the application for the license, to assure that the information included in the report contains the latest information developed. The submittal shall include the effects of all changes to the facility as described in the final safety analysis report, or all safety analyses and evaluation performed by the licensee either in support of approved license amendments or in support of conclusion that changes did not require a license amendment in accordance with 10 CFR 50.59 (c)(2). Specifically, from October 9, 2012 to September 29, 2016, the licensee did not include the effects of changes to the K300 voltage relay setpoint or the safety evaluation in submittals to the Final Safety Analysis Report, Section 8.3.1.1.11, that supported the conclusion that the changes did not require a license amendment. The licensee plans to initiate a Licensing Document Change Request to update the final safety analysis report. This is not an immediate safety concern. The licensee entered this issue into their corrective action program as Condition Report CR-2016-008177.

The licensee's failure to initiate a Licensing Document Change Request, in accordance with procedure STA-116, "Maintenance of CPNPP Licensing Basis Documents, Operating License conditions and Technical Specifications," Revision 14, instruction 6.1, to update the Final Safety Analysis Report, Section 8.3.1.1.11, for the setpoint revision of voltage K300 voltage relays was a performance deficiency. This led to a violation of 10 CFR 50.71(e) for failing to update the final safety analysis report. Using NRC Inspection Manual Chapter 0612, Appendix B, "Issue Screening," dated September 7, 2012, this was determined to be a minor performance deficiency. This violation was evaluated using the traditional enforcement process because it impacted the NRC's ability to perform its regulatory oversight function. The reactor oversight process's significance determination process does not consider violations that impacts the NRC's regulatory oversight function. This violation was determined to be a Severity Level IV violation because it was consistent with the example in Paragraph 6.1.d.3 of the NRC Enforcement Policy, dated August 1, 2016. Specifically, the licensee failed to update the final safety analysis report as required by 10 CFR 50.71(e), but the lack of up-to-date information has not resulted in any unacceptable change to the facility or procedures. No cross-cutting aspect was assigned to this violation because there was no reactor oversight process finding associated with the performance deficiency.
(Section 1R17.2.b)

Inspection Report# : [2016007](#) (*pdf*)

Last modified : February 01, 2017