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Palo Verde 2 – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

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Initiating Events

Significance: G Sep 28, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Follow Advance Work Authorization Procedure

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because the licensee failed to accomplish activities affecting quality in accordance with documented procedures. Specifically, the inspectors identified multiple examples of design changes performed under the Advanced Work Authorization process which were placed into service prior to the completion of the associated engineering work orders. As an immediate corrective action, the licensee instituted a requirement for the design engineering director to approve all Advance Work Authorizations to ensure the in service point is clearly identified and understood. The licensee entered this issue into the corrective action program as Condition Report 16-09965.

The failure to establish adequate constraints to ensure that final engineering approval of advance work is completed prior to placing modified systems in service was a performance deficiency. This performance deficiency was more than minor, and therefore a finding, because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, routinely failing to implement the requirements of the engineering design change advance work authorization process could result in equipment being placed in service without an approved design configuration. In accordance with Inspection Manual Chapter 0609, Significance Determination Process, Attachment 4, "Initial Characterization of Findings," dated June 19, 2012, Table 2, reactor coolant system boundary issues are considered under the Initiating Event Cornerstone. Using Table 3, the inspectors determined the finding pertained to an event or degraded condition while the plant was shutdown and, therefore, used Inspection Manual Chapter 0609, Appendix G "Shutdown Operations Significance Determination Process," dated May 9, 2014, for significance determination. The inspectors reviewed Appendix G, Attachment 1, Exhibit 2, "Initiating Events Screening Questions." The inspectors answered "No" to Question A.1, and found all other questions to be not applicable and therefore concluded that the finding was of very low safety significance (Green). The inspectors

determined that this finding had a human performance crosscutting aspect associated with work management, because the licensee did not coordinate with all affected work groups so that operations personnel understood the constraints prior to placing the modified system back in service.

Inspection Report# : 2016003 (*pdf*)

Mitigating Systems

Significance:  Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to establish station procedure instructions for denial work authorizations

The inspectors identified a Green, non-cited violation of Technical Specification 5.4.1.a, "Procedures," for the failure to establish procedure instructions for work authorization denials or deferrals. Specifically, this led to a 60 day extended unavailability of the diverse auxiliary feedwater actuation system when corrective maintenance was inappropriately deferred by the operations department.

Failure to provide adequate procedural guidance in the event of a denied work authorization, a circumstance anticipated to occur, is a performance deficiency. The performance deficiency is more than minor, because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability and reliability of equipment that responds to an initiating event. Specifically, because the corrective maintenance was not performed in a timely manner, both trains of the diverse auxiliary feedwater actuation system remained in bypass for an additional 60 days whereby the system was not capable of performing its required safety function. The inspectors evaluated the significance of the finding using Inspection Manual Chapter 0609, Appendix A, "Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," Section A, Question 2, which required a detailed risk evaluation because the finding involved a loss of system safety function. A Region IV senior reactor analyst performed a detailed risk assessment of the finding and determined that the finding was of very low safety significance (Green). The inspectors determined that the finding had a cross-cutting aspect in the human performance area of Work Management. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, the Unit Operations Manager's decision to deny the work authorization was based on conservative but faulty assumptions, and if other work groups with greater specific technical knowledge had been involved, the corrective maintenance likely would have proceeded [H.5].

Inspection Report# : 2017001 (*pdf*)

Significance:  Dec 29, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate monitoring of MSIV nitrogen pre-charge pressure

Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specification 3.7.2 for exceeding the Condition A completion time for an inoperable main steam isolation valve (MSIV) single actuator train and not immediately declaring the affected main steam isolation valve inoperable in accordance with Condition E. Specifically, the Unit 2 main steam isolation valve 171 actuator A was inoperable from July 30, 2016, to August 9, 2016, when a known nitrogen leak was not adequately monitored. The licensee's inadequate monitoring allowed the nitrogen pre-charge pressure in the actuator to decrease to below the minimum acceptable limit for operability. The licensee restored the pre-charge pressure and entered this issue into their corrective action program as Condition Report 16-12740.

The failure to perform adequate monitoring for a degraded condition as required by procedure 40DP-9OP26, "Operations Condition Reporting Process and Operability Determination/Functional Assessment," was a performance

deficiency. The performance deficiency was more-than-minor and therefore a finding because it affected the equipment performance attribute of the Mitigating Systems Cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically the failure to adequately monitor a known nitrogen leak resulted in depressurizing one of two hydraulic accumulators thereby reducing the reliability of the system to initiate a fast closure of MSIV 171 upon receipt of a main steam isolation signal. The inspectors performed the initial significance determination using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," Issue Date: June 9, 2012. The finding required a detailed risk evaluation since it represented a loss of function for a single train for greater than the Technical Specification allowed outage time. A Region IV senior reactor analyst determined the finding was of very low safety significance (Green) since the MSIV remained capable of performing its safety function with the alternate actuator. The finding has a cross-cutting aspect in the area of human performance associated with the teamwork component. Specifically, the licensee failed to coordinate activities across organizational boundaries in that the operations personnel did not obtain engineering input to ensure that additional monitoring requirements for the nitrogen pre-charge leak were adequate to verify continued MSIV 171 operability.

Inspection Report# : 2016004 (*pdf*)

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Significance: Sep 01, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Establish Maintenance Activities and Instructions for Gas Turbine Generator Station Blackout Batteries

The team identified a Green, non-cited violation of 10 CFR 50.63, "Loss of All Alternating Current," which states, in part, "The alternate AC power source, as defined in 10 CFR 50.2, will constitute acceptable capability to withstand station blackout provided an analysis is performed which demonstrates that the plant has this capability from onset of the station blackout until the alternate AC source(s) and required shutdown equipment are started and lined up to operate." Specifically, prior to August 5, 2016, the licensee replaced the gas turbine generator station blackout batteries in a modification to address obsolete components, but failed to identify the initial parameters to baseline the batteries and failed to implement a battery testing and maintenance program. In response to this issue, the licensee determined that the batteries continued to satisfy their design function and began to develop the necessary testing and preventive maintenance procedures. This finding was entered into the licensee's corrective action program as Condition Report 14-02346.

The team determined that failure to implement preventative maintenance activities for the gas turbine generator station blackout batteries since their replacement in 2014 was a performance deficiency. This 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 of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee replaced the gas turbine generator station blackout batteries in a modification to address obsolete components, but failed to identify the initial parameters to baseline the batteries and failed to implement a battery testing and maintenance program. 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 finding was determined to have very low safety significance (Green) because it was a design or qualification deficiency that did not result in a loss of operability or functionality; did not represent an actual loss of safety function of a system or train; did not result in the loss of a single train for greater than technical specification allowed outage time; 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 associated with resolution because the licensee failed to take effective corrective actions to address

issues in a timely manner commensurate with their safety significance [P.3].

Inspection Report# : 2016007 (*pdf*)

Significance:  Sep 01, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Translate Information from Design Modification into Design Documentation, Operating Procedures, and Operator Training

. 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 August 5, 2016, the licensee did not adequately implement operator training and annunciator response procedures for Design Modification 216914, which resulted in the failure to adequately evaluate the impact on operability for the loss of forced cooling capability for the L31 load center transformer. In response to this issue, the licensee confirmed that the L31 load center was operable, but degraded, based on the remaining life for the transformer insulation when considering the maximum design basis accident load on the transformer and the expected load duration with the cooling fans disabled. This finding was entered into the licensee's corrective action program as Condition Report 3-16-12571 and Condition Report 3-16-13316.

The team determined that the failure to adequately update design documentation, operating procedures, and operator training was a performance deficiency. This performance deficiency was more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to update appropriate design calculations, annunciator response procedures, and licensed operator training when Design Modification 216904 was implemented in 1996 contributed to conditions that resulted in Operations preparing an inadequate Immediate Operability Determination when the L31 transformer cooling equipment failed on April 21, 2015. 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 finding was determined to have very low safety significance (Green) because it was a design or qualification deficiency that did not result in the loss of operability or functionality; did not represent an actual loss of safety function of a system or train; did not result in the loss of a single train for greater than technical specification allowed outage time; 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 did not have a crosscutting aspect because the most significant contributor did not reflect current licensee performance. Inspection Report# : 2016007 (*pdf*)

Significance:  Sep 01, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Verify the Ability to Isolate the Safety-Related Condensate Storage Tank from Non-Safety Piping

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 August 3, 2016, the licensee failed to establish measures to assure an adequate water level was maintained in the condensate storage tank, failed to establish a time critical action to isolate the condensate storage tank, and failed to establish specific procedures to isolate the condensate storage tank in the event of a tornado. In response to this issue, the licensee initiated the process to revise plant procedures and

evaluate associated operator time critical actions. This finding was entered into the licensee's corrective action program as Condition Reports 16-13761, 16-12430, and 16 13762.

The team determined that failure to verify the ability to isolate the safety-related condensate storage tank from the non-safety portion of the auxiliary feedwater system while preserving enough tank capacity to safely shutdown was a performance deficiency. This 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 of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee's failure to ensure timely isolation of the condensate storage tank would adversely affect the capability to safely shutdown the plant using the condensate storage tank and safety-related auxiliary feedwater system. 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 finding was determined to have very low safety significance (Green) because it was a design or qualification deficiency that did not result in a loss of operability or functionality; did not represent an actual loss of safety function of a system or train; did not result in the loss of a single train for greater than technical specification allowed outage time; 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 did not have a crosscutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : 2016007 (*pdf*)

Significance:  Sep 01, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Pipe Welds Not Incorporated into the Inservice Inspection Program

The team identified a Green, non-cited violation of 10 CFR 50.55a(g)4, "Inservice Inspection Standards Requirement for Operating Plants," which states, in part, "Throughout the service life of a pressurized water-cooled nuclear power facility, components that are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements set forth in Section XI of the ASME Code." The ASME Code, Section XI, Article IWA-2610, requires that a reference system be established for all welds and areas subject to a surface or volumetric examination. Specifically, prior to August 8, 2016, for two welds located in an ASME Code, Section XI, Class 3, suction line between the condensate storage tank and the non-safety-related auxiliary feedwater pump, a weld reference system was not established. In response to this issue, the licensee reclassified the subject welds and scheduled weld examinations to ensure potential cracks would be detected. This finding was entered into the licensee's corrective action program as Condition Report 16 -13150.

The team determined that the licensee's failure to establish a weld reference system for two welds in the suction line between the condensate storage tank and the startup feed pump system was contrary to the ASME Code, Section XI, Article IWA-2610, and was a performance deficiency. This performance deficiency was more than minor because the finding, if left uncorrected, would become a more significant safety concern. Specifically, absent NRC identification, the licensee would not have examined these welds, which could have allowed service induced cracks to go undetected. Undetected cracks would place the suction pipe segment at increased risk for through-wall leakage and/or failure, which would affect the safety of an operating reactor. 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 finding was determined to have very low safety significance (Green) because it was a design or qualification deficiency that did not result in the loss of operability of functionality; did not represent an actual loss of safety function of a system or train; did not result in the loss of a single train for greater than technical specification allowed outage time; 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 did not have a crosscutting aspect because the most significant contributor did not reflect current licensee performance.

Inspection Report# : 2016007 (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : August 03, 2017

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