

Palo Verde 1 1Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Jan 15, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Loop Flow Test Procedure

The team identified a Green non-cited violation of License Conditions 2.C.7, 2.C.6, and 2.F for Units 1, 2, and 3, respectively, because the licensee had not established criteria for determining when a fire main loop had degraded and had not properly tested all portions of the fire main loop. Specifically, the licensee had not established a differential pressure that would initiate actions to evaluate the cause for a degradation and the licensee had not determined the flow through individual flow paths in their auxiliary and control buildings. The licensee documented these issues in Condition Reports 15 00513 and 16 00686 and initiated actions to correct the procedure and perform the flow test of the individual loops.

The team identified a performance deficiency related to the procedure used to test their fire main loop. Specifically, the licensee had not established criteria for determining a degraded fire main loop and had not properly tested all portions of the fire main loop. This performance deficiency was more than minor because it was associated with the protection against external factors attribute (fire) and adversely affected the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to test the fire main loops inside the control/auxiliary building separately and failure to establish appropriate acceptance criteria affected the ability to demonstrate the continued capability to deliver adequate flow and pressure to the fire suppression systems.

The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," dated June 19, 2012. The inspectors determined that an IMC 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, review was required as the finding affected the ability to reach and maintain safe shutdown conditions in case of a fire. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," dated September 20, 2013, the finding was screened as a Green finding of very low safety significance in accordance with Task 1.4.7, "Fire Water Supply," Question A. The inspectors determined that although the licensee failed to test portions of the fire main system in accordance with code requirements, the inspectors determined that at least 50 percent of required fire water capacity would be available based on the testing is done with only one fire pump in service and there are three available fire pumps. Since these fire main loops inside the control/auxiliary building had not been monitored for pressure changes when flow tested since initial testing and nothing caused the licensee to reevaluate the test, the team determined that this failure did not reflect current performance.

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

Mitigating Systems

Significance:  Mar 24, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Operations Department Failure to Document Conditions Adverse to Quality in Condition Reports

DRAFT-The inspection activities described in this report were performed between March 8 and March 24, 2016, by three inspectors from the NRC's Region IV offices, the senior resident inspector at Palisades Nuclear Generating Station, and the resident inspector at the Palo Verde Nuclear Generating Station. The report documents one finding of very low safety significance (Green). This finding involved a violation of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects Within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Assessment of Problem Identification and Resolution

Based on its inspection sample, the team concluded that the licensee maintained a corrective action program in which individuals generally identified issues at an appropriately low threshold. Once entered into the corrective action program, the licensee generally evaluated and addressed these issues appropriately and timely, commensurate with their safety significance. The licensee's corrective actions were generally effective, addressing the causes and extents of condition of problems.

The licensee appropriately evaluated industry operating experience for relevance to the facility and entered applicable items in the corrective action program. The licensee incorporated industry and internal operating experience in its root cause and apparent cause evaluations. The licensee performed effective and self-critical nuclear oversight audits and self-assessments. The licensee maintained an effective process to ensure significant findings from these audits and self-assessments were addressed.

The licensee maintained a safety-conscious work environment in which personnel were willing to raise nuclear safety concerns without fear of retaliation.

Inspection Report# : [2016008](#) (pdf)

Significance:  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Verify the Design of the Essential Spray Pond System Crosstie Valves

The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control, involving the failure to maintain adequate design control measures associated with the ultimate heat sink. Specifically, the essential spray pond crosstie valves did not meet design requirements established in Regulatory Guide 1.117, "Tornado Design Classification," as described in the Updated Final Safety Analysis Report. If the crosstie valves were damaged by a tornado, the licensee would not have enough available water inventory to meet the mission time of the essential spray pond system during accident conditions. The licensee has added steps to their emergency operating procedure to instruct operators to open the crosstie valves during the initial response to a loss of coolant accident and is evaluating potential plant modifications. The licensee has entered this issue into the corrective action program as Palo Verde Action Request 4633058.

The failure to verify the design of the essential spray pond system in accordance with Regulatory Guide 1.117 was a performance deficiency. The inspectors determined that this performance deficiency was more than minor because it affected the protection against external factors attribute of the Mitigating Systems Cornerstone objective of ensuring

the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, if the crosstie valves were damaged by a tornado, the licensee would not have enough available water inventory to meet the mission time for one train of the essential spray pond system during accident conditions. The inspectors performed the initial significance determination for the performance deficiency using NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating System Screening Questions," dated July 1, 2012. The finding required a detailed risk evaluation because it involved the potential loss of a safety system. Specifically, after at least 13 days of spray pond operation, operators were required to open the spray pond cross-connect valve to enable one train of the ultimate heat sink to use both trains of spray pond inventory. A Region IV senior reactor analyst performed a detailed risk evaluation. The design basis accident mission time was 30 days. However, the probabilistic risk assessment mission time was only 24 hours. Since the spray ponds could still perform the probabilistic risk assessment function for the probabilistic risk assessment mission time, this finding was of very low safety significance (Green). The change to the core damage frequency was much less than $1E-7$ /year. The finding did not contribute to the large early release frequency. Because the most likely cause of the finding does not reflect current licensee performance, no cross-cutting aspect is assigned to this finding.

Inspection Report# : [2015002](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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

Last modified : July 11, 2016