Palo Verde 3
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: G Mar 30, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Fatigue failure of pneumatic fitting due to excessive vibrations
The inspectors documented a self-revealing non-cited violation of Technical Specification 3.7.2 Condition A for exceeding the allowed outage time of seven days. Specifically Unit 3's MSIV-181 actuator B was found to be inoperable from May 1, 2015 until August 15, 2015 when a design change installed a new swivel type fitting on an air-line without taking into account vibrational forces, as required by the station's procedure. This eventually resulted in the fatigue failure of the fitting, depressurizing the actuator B to less than 5000 psig. The licensee entered this condition in their corrective action program and performed a Level 2 cause evaluation under Condition Report 15-02686.

The inspectors concluded that the failure to take into account excessive vibrational stresses as required by procedure 81DP-0EE10, "Design Change Process" Step J.2.9.1, when implementing the design change was a performance deficiency. The performance deficiency was more than minor because it affected the equipment performance attribute of the Mitigating Cornerstone to ensure the availability, reliability, and the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically the failure to account for the vibrational stresses resulted in the fatigue failure of the air-line fitting which depressurized one of two hydraulic accumulators thereby reducing the reliability of the system to initiate a fast closure of MSIV-181 upon receipt of a Main Steam Isolation Signal. The inspectors performed the initial significance determination using NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," Issue Date: 06/19/12. The finding screened as Green since the MSIV remained capable of performing its safety function with the alternate accumulator. The finding has a cross-cutting aspect in the area of human performance associated with the "avoid complacency" component. Specifically the licensee assumed there were no factors affecting the mechanical design requirements beyond the performance requirements. As a result the licensee failed to perform a thorough review of the mechanical conditions (such as vibrations) the air-line was subjected.

Inspection Report# : 2016001 *(pdf)*

Significance: G 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)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 30, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Failure to use adequate engineering and radiological controls resulting in two unplanned intakes
A self-revealing non-cited violation of 10 CFR 20.1701 was identified for the licensee's failure to implement adequate processes or engineering controls to control the concentration of radioactive material in air and prevent internal dose to workers. Specifically, on April 14, 2015, the licensee implemented inadequate engineering and radiological controls to remove a pre-filter and Y-connector from a high efficiency particulate air (HEPA) ventilation unit resulting in an airborne radioactivity condition and two intakes. The licensee was alerted to this issue when two radiation protection technicians alarmed PM12 portal monitors upon their exit from the radiologically controlled area. The licensee took immediate corrective actions and instructed these technicians to report to dosimetry for whole body counting and evaluation. The licensee entered this issue into their corrective action program as Condition Report (CR) CR 16-01093.

The failure to implement adequate engineering and radiological controls during HEPA unit maintenance in accordance with procedures and the radiological exposure permit requirements was a performance deficiency. The performance deficiency was more than minor because it was associated with the Occupational Radiation Safety attribute of Program and Process and adversely affected the cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. This was evident by two workers receiving unplanned intakes. Using IMC 0609, Appendix C, Occupational Radiation Safety Significance Determination Process, issue date 8/19/2008, the finding was determined to be of very low safety significance (Green) because it did not involve: (1) as low as reasonably achievable (ALARA) planning and controls, (2) an overexposure, (3) a substantial potential for an overexposure, or (4) an impaired ability to assess dose. The inspectors concluded that the finding has a "Conservative Bias" cross-cutting

aspect in the Human Performance area because the licensee failed to use decision-making practices that emphasized prudent choices over those that are simply allowable when they changed out the HEPA pre-filter and Y connector components.
Inspection Report# : 2016001 *(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

Last modified : July 11, 2016