Turkey Point 4
4Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate General Operating Procedure to Prevent Inadvertent AFAS While Performing a Reactor Plant Planned Shutdown
A self-revealing non-cited violation (NCV) of Technical Specification (TS) 6.8.1, "Procedures," was identified for the licensee's failure to maintain adequate guidance in procedure 4-GOP-103, "Power Operation to Hot Standby." Specifically, 4-GOP-103 did not contain adequate instructions to control reactor power prior to opening the reactor trip breakers in order to minimize steam generator inventory loss to prevent an auxiliary feed water (AFW) system actuation. As a result, the AFW actuation system (AFAS) actuated unexpectedly during a planned unit shutdown resulting in an excessive reactor coolant system cool down and the operators closing the main steam isolation valves. Corrective actions included entering this issue into their corrective action program (CAP) and revising the procedure to reduce reactor power to at least 20 percent to prevent steam generator inventory loss due to shrinkage following a manual reactor trip during a planned reactor plant shutdown from power operations to hot standby.

The performance deficiency was more than minor because it is associated with the procedure quality attribute of the initiating events cornerstone and adversely 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. Specifically, the failure to have specific guidance in procedure 4-GOP-103 to ensure reactor power is lowered to at least 20 percent prior to initiating a manual reactor trip during a planned shutdown resulted in an inadvertent AFAS actuation, reactor coolant system cool down, closing of the main steam isolation valves, and a reduced safe shutdown margin. The inspectors screened the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 1, "Initiating Events Screening Questions."
The inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The finding was associated with a cross-cutting aspect in the resources component of the human performance area because the licensee failed to ensure an adequate general operating procedure was available to support nuclear safety (H.1)
Inspection Report# : 2015002 *(pdf)*

Significance: G May 12, 2015
Identified By: NRC
Item Type: FIN Finding
Inadequate Work Instructions for Replacing Main Generator Current Transformers (Section 4OA3)
A self-revealing finding was identified for the licensee's failure to provide adequate instructions for performing work on the Unit 4 main generator protection control circuitry. As a result, the lugged connections on an installed current transformer lacked the appropriate tightness causing increased electrical resistance and ultimately catastrophic failure of a lug connection. The lug failure produced an open circuit condition on the current transformer causing the generator protection circuit to actuate. This resulted in a turbine trip and reactor trip. Corrective actions included replacing the damaged lug and torqueing all the current transformer lug connections to the vendor recommended

value. A root cause evaluation was performed and a revision made to maintenance procedure 0-PME-090.03, "Maintenance of Isophase Neutral Bus and Grounding Transformer Connection Assemblies," to include additional instructions on torqueing the lug assemblies. The licensee entered this performance deficiency in their corrective action program (CAP) as action request 02047137.

The performance deficiency was more than minor because it was associated with the procedure quality attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the work package associated with engineering modification package EC 246904 and work order 40063905 directed the technician to connect the CT lugs hand tight and did not require torqueing per the vendor specified torque value. The inspectors screened the significance of the finding using Manual Chapter 0609, Appendix A, Exhibit 1, Transient Initiators. The inspectors determined the finding was of very low safety significance (Green) because the finding did not result in a reactor trip and a loss of mitigation equipment relied upon to transition the plant to a stable shutdown condition. The finding was associated with a cross-cutting aspect in the resources component of the human performance area because the licensee failed to ensure an adequate work instruction document was available to support nuclear safety (H.1) (Section 4OA3).

Inspection Report# : 2015003 *(pdf)*

Mitigating Systems

Significance: G Feb 23, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Establish a Reasonable Maintenance Effectiveness Demonstration for Unit 3 Containment Atmospheric Temperature System
Green: The NRC identified a Green non-cited violation (NCV) of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the licensee's failure to adequately monitor the performance or condition of the Unit 3 containment atmospheric temperature system against licensee established goals or demonstrate that the performance of the containment atmospheric temperature system was being effectively controlled through preventive maintenance, such that the system remained capable of performing its intended function. Specifically, there were multiple individual component failures on both units since March 2011 and the Unit 3 containment atmospheric temperature system was non-functional from November 5, 2014, to January 17, 2015. In response to the NRC identified issue, the licensee initiated action report (AR) 02023116, and classified the temperature elements into 10 CFR 50.65(a)(1) status on February 23, 2015, under AR 02004990.

The inspectors determined that the performance deficiency was more than minor because it affected the Equipment Performance attribute of the Mitigating Systems cornerstone objective. The licensee did not ensure the availability, reliability, and capability of the Unit 3 containment atmospheric temperature system that was used for emergency operating procedures. The inspectors determined the finding to be of very low safety significance (Green) because it was not a deficiency affecting the design or qualification of a mitigating structure, system, or component (SSC), it did not represent the loss of a system and/or function, it did not represent an actual loss of function of at least a single train or two

separate safety systems out-of-service for greater than its Technical Specifications (TS) allowed outage time, and it did not represent an actual loss of a non-TS equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. The inspectors determined the finding was indicative of present licensee performance and was associated with the cross-cutting aspect of Evaluation, in the area of Problem Identification and Resolution. Specifically, the licensee failed to thoroughly evaluate issues that were identified in the last three years associated with containment atmospheric temperature system failures to ensure that resolutions addressed causes and extent of conditions commensurate with their safety significance. [P.2]
Inspection Report# : 2015007 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2015
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Failure to correctly follow procedure 3 PMI 072.6, "Steam Dump to Atmosphere Control Loop Calibration."
A self-revealing NCV of Technical Specification (TS) 6.8.1, "Procedures and Programs," was identified when the licensee failed to properly implement procedure 3 PMI-072.6, "Steam Dump to Atmosphere Control Loop Calibration." Specifically, the licensee incorrectly installed a temporary electrical jumper in reactor operator console 3C02 instead of 3C04, in contrast to Step 6.3.2 of 3-PMI-072.6. This action resulted in actuation of a 3B 4160 volt (V) vital bus lockout circuit causing loss of power to the B train of Unit 3 (U3) spent fuel pool (SFP) cooling. Immediate corrective actions were taken to remove the jumper and restore the B train of SFP cooling. The licensee entered the condition in its corrective action program (CAP) as action request (AR) 02088911 and 02088914.

The performance deficiency was determined to be more than minor because it was associated with the human performance attribute of the barrier integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system (RCS), and containment) protect the public from radionuclide releases. In addition, the performance deficiency, if left uncorrected, had the potential to lead to a more significant safety concern. The finding was screened using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Tables 2 and 3, dated July 1, 2012, and Appendix G Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings," Exhibit 4 for Barrier Integrity, dated May 9, 2014. The inspectors determined the finding was of very low safety significance (Green) because it was not associated with low temperature over pressurization, freeze seals, steam generator nozzle dams, criticality, drain down or leakage paths, or the containment barrier. Furthermore, one train of SFP cooling remained in operation, the rate of SFP temperature rise was low (~ 2 °F/hour), and additional methods remained available to limit SFP temperature rise. This finding was assigned a cross cutting aspect associated with the procedure adherence element of the human performance area because the licensee failed to correctly execute step 6.3.2 of procedure 3-PMI-072.6 (H.8). (Section 1R20)

Inspection Report# : 2015004 *(pdf)*

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 : March 01, 2016