

Columbia Generating Station 3Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Loss of RCC Cooling Requiring a Reactor Scram

The inspectors reviewed a self-revealed, non-cited violation of Technical Specification 5.4.1.a, "Procedures," for the licensee's failure to follow procedure OI-41, "Operations Work Control Expectations," Revision 59. Specifically, the licensee incorrectly marked steps of procedure OSP-FPC/IST-Q701, "Fuel Pool Cooling System Operability Surveillance," Revision 34, as not applicable and therefore did not provide mechanical isolation between the non-safety reactor closed loop cooling system and the safety-related standby service water system. As a result, on March 28, 2016, the reactor closed loop cooling system was momentarily depressurized into the service water system and required a manual reactor scram due to a loss of reactor closed loop cooling for non-safety systems. The licensee entered this issue into their corrective action program as Action Request 346945.

The failure to follow procedure OI-41, "Operations Work Control Expectations," Revision 59, was a performance deficiency. This performance deficiency was more than minor, and therefore a finding, because it adversely affected the configuration control attribute of the Initiating Events Cornerstone objective of limiting 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, Attachment 04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 1, "Initiating Events Screening Questions," dated June 19, 2012, the inspectors determined the 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 had a cross-cutting aspect in the area of human performance associated with avoiding complacency because the licensee failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes including implementing appropriate error reduction tools. Specifically, licensed operators failed to recognize the possible latent issues and inherent risk of marking large portions of a procedure as "not applicable." [H.12]

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

Mitigating Systems

Significance: G Dec 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Incorrect Electrical Component Operated During Maintenance

The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.4.1.a, "Procedures," for the licensee's failure to implement Work Order 02048855 during maintenance on a safety-related power panel. Specifically, the licensee operated an incorrect electrical disconnect, E-DISC-7AA-6A. Further, upon realization of the error, maintenance personnel re-energized the E-DISC-7AA-6A circuit without understanding the effects of that

action. As a result of this incorrect component operation, the division 1 emergency diesel generator was rendered inoperable. As an immediate corrective action, the licensee stopped all associated maintenance and restored the division 1 emergency diesel generator to operable status by performing the standby alignment procedure. The licensee entered this issue into their corrective action program as Action Request 337018.

The failure to implement Work Order 02048855 during maintenance on a safety-related power panel was a performance deficiency. This performance deficiency was more than minor, and therefore a finding, because it adversely affected the configuration control attribute of the Mitigating Systems Cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," dated June 19, 2012, the inspectors determined the finding was of very low safety significance (Green) because the finding did not represent a loss of safety function, did not represent an actual loss of function of a single train for greater than its technical specification allowed outage time, and did not represent an actual loss of function of one or more non-technical specification equipment for greater than 24 hours. The inspectors determined the finding had a cross-cutting aspect in the area of human performance associated with the avoid complacency component because the licensee failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes including implementing appropriate error reduction tools. Specifically, the maintenance staff failed to follow the site's error prevention tool process and operated the incorrect component [H.12].

Inspection Report# : [2015004](#) (*pdf*)

Significance:  Oct 01, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Ensure Adequate Acceptance Criteria in Fire Main Surveillance Testing

The team identified a non-cited violation of License Condition 2.C.14, "Fire Protection Program (Generic Letter 86-10)," for the failure to establish procedural guidance for validating the underground fire main condition to ensure the required fire suppression system demands were met. Specifically, the licensee failed to provide acceptance criteria in Plant Procedure Manual 15.4.2, "Fire Main Hydraulic Data Acquisition," to validate that the fire water supply at the base of the largest demanding fire suppression system was adequate given the current condition of the fire main. From review of design information, the team verified the licensee met their fire protection system design flow and pressure requirements, determined that other pumps would be available, and determined this finding did not affect the ability to achieve safe shutdown. The licensee entered this deficiency in their corrective action program as Action Request AR-00335821.

The failure to provide adequate acceptance criteria to validate the condition of the water supply was a performance deficiency. Specifically, the licensee failed to provide adequate acceptance in the Plant Procedure Manual 15.4.2 for Surveillance Requirement 1.10.1.14 to ensure that the current fire water supply can meet the largest demanding fire suppression system. The performance deficiency was more than minor because it was associated with the protection of external events attribute (fire) 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. The team evaluated the finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected the firewater supply category. Using Appendix F, Attachment 1, "Fire Protection Significance Determination Process Phase 1 Worksheet," Task 1.4.7, "Fire Water Supply," the team assigned a very low safety significance (Green) to the finding because of the availability of at least 50 percent of the required firewater capacity. The team confirmed this after verifying the water supply exceeded the minimum in the water supply calculations, the availability of additional fire pumps beyond that required for the minimum water supply and the condition did not affect the ability to achieve safe shutdown. The finding did not have a cross-cutting aspect since the performance deficiency was more than three years old and not indicative of current performance.

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

Significance:  Oct 01, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Alternative Shutdown Procedure

The team identified a non-cited violation of Technical Specification 5.4, "Procedures," for the failure to provide adequate procedures to implement the fire protection program. Specifically, the alternative shutdown procedure failed to assure operator actions for post-fire safe shutdown would be performed within the required times following a control room evacuation due to fire. The licensee entered this issue into their corrective action program as Action Request AR-00335854 and issued Night Order Number 1668 providing direction to the operators as a compensatory measure until they completed additional corrective actions.

The failure to provide an adequate procedure to assure operators performed post-fire safe shutdown actions within the required time following a control room evacuation due to fire was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013. Since operators would take more than the 10 minutes specified in their procedure to initiate reactor depressurization, the team could not determine that the operators had maintained the ability to reach and maintain safe shutdown conditions. The dominant core damage sequences involved (1) a fire in the control room that required a control room evacuation and (2) the failure of operators to initiate emergency depressurization. Therefore, a Region IV senior reactor analyst performed a bounding detailed risk evaluation. The analyst noted that additional time was available in a probabilistic risk assessment calculation. The additional time available in a probabilistic risk assessment calculation helped to minimize the risk. Based on this information, the finding screened to Green because the licensee could achieve safe shutdown. The finding did not have a crosscutting aspect since the performance deficiency was more than three years old and not indicative of current performance.

Inspection Report# : [2015008](#) (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.

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Miscellaneous

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