



Home > Nuclear Reactors > Operating Reactors > Reactor Oversight Process > Plant Summaries > Wolf Creek > Quarterly Plant Inspection Findings

Wolf Creek – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

On this page:

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness
- Occupational Radiation Safety
- Public Radiation Safety
- Security

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Declare Train A Component Cooling Water Inoperable

The inspectors identified a Green non-cited violation of Technical Specification Limiting Condition for Operation 3.7.7 for the licensee's failure to place the unit in MODE 3 within 78 hours with the train A component cooling water system inoperable. Specifically, the essential service water emergency make-up to component cooling water train A valve was not declared inoperable when it was out of service, and as a result, train A component cooling water was out of service for longer than its Technical Specification allowed outage time. The licensee's planned actions include revising Technical Specification Bases 3.7.7 and training operators on the proposed Technical Specification Bases revisions, and the licensee issued an "Essential Reading" document for operators to review. The licensee entered the issue into the corrective action program as Condition Report 111808.

The failure to declare train A component cooling water inoperable is a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the human performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors evaluated the finding using Exhibit 2, "Mitigating Systems Screening Questions," of Inspection Manual Chapter 0609, Appendix A, "Significance Determination Process (SDP) for Findings At-Power," and determined the finding was of very low safety significance (Green). The inspectors determined that the finding has a human performance cross-cutting aspect in the area of challenge the unknown because individuals did not stop when faced with uncertain conditions, and risks were not evaluated and managed before proceeding. This issue is indicative of current performance because the creation and implementation of the subject clearance order occurred in the last three

years.

Inspection Report# : 2017002 (*pdf*)

Significance:  Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Provide Adequate Work Instructions for Preventive Maintenance

The inspectors reviewed a Green, self-revealed non-cited violation (NCV) of Technical Specification 5.4.1.a and Regulatory Guide 1.33 for the licensee's failure to provide adequate work instructions for preventive maintenance on safety-related equipment. Specifically, work instructions to inspect and clean the condensate drain lines on the class 1E air conditioner air handling units lacked guidance for adequately cleaning the drain line. This caused the unit to become non-functional. The licensee took the immediate corrective action to clear the clogged condensate drain line on SGK05B, and entered the issue in the corrective action program as Condition Report 106416.

The failure to provide adequate work instructions for preventive maintenance on safety-related equipment is a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the procedure quality attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined this finding screened to Green. The inspectors determined that the finding has a problem identification and resolution cross-cutting aspect of resolution because the organization did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance. This issue is indicative of current performance because neither the preventive maintenance change process was substantively changed nor were human performance errors associated with the preventive maintenance change corrected, and the same resolution inadequacies that resulted in the inadequate preventive maintenance instructions would be expected to occur.

Inspection Report# : 2017001 (*pdf*)

Significance:  Dec 31, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Establish and Adjust Preventive Maintenance for Emergency Diesel Generator Excitation System Diodes

Green. The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, for the licensee's failure to adequately develop and adjust preventive maintenance activities in accordance with Procedure AP 16B-003, "Planning and Scheduling Preventive Maintenance," Revision 5. Specifically, the licensee did not create a preventive maintenance task for emergency diesel generator excitation system diodes, which resulted in degradation of the excitation system diodes in emergency diesel generator B. The licensee restored compliance by establishing preventive maintenance tasks 49286, 49287, 49288, and 49289, which refurbish the power rectifier assemblies and replace the diodes on a 12-year replacement frequency. The licensee entered this issue into the corrective action program as Condition Report 88665.

The failure to adequately develop and adjust emergency diesel generator excitation system diode preventive maintenance activities in accordance with Procedure AP 16B-003, "Planning and Scheduling Preventive Maintenance," was a performance deficiency. This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using IMC 0609, Appendix A, "Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012. In accordance with NRC Inspection Manual Chapter 0609, Appendix A,

Exhibit 2, "Mitigating Systems Screening Questions," this finding was not a deficiency affecting the design or qualification of a mitigating structure, system, or component that maintained its operability or functionality; the finding did not represent a loss of system and/or function; the finding did not represent an actual loss of function of at least a single train for greater than its Technical Specification allowed outage time; and the finding did not represent an actual loss of function of one or more non-Technical Specification trains of equipment designated as high safety-significant. Therefore, the finding was of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience, because the organization did not systematically and effectively evaluate relevant internal and external operating experience in a timely manner. This issue is indicative of current performance because the station did not take any formal corrective actions to address the station's failure to adequately consider operating experience.

Inspection Report# : 2016004 (*pdf*)

Significance:  Sep 30, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Adjust Testing and Preventive Maintenance for Safety-Related Lockout Relays

The inspectors identified a Green non-cited violation of Technical Specification 5.4.1.a, for the licensee's failure to adequately adjust testing and preventive maintenance activities in accordance with Procedure AP 16B-003, "Planning and Scheduling Preventive Maintenance," Revision 5. Specifically, the licensee did not adjust a preventive maintenance task for a General Electric HEA 86 lockout relay and test the relay in accordance with vendor recommendations and industry operating experience, which resulted in the NB0215 186/M lockout relay associated with the B essential service water pump motor breaker failing as-found testing on August 2, 2016. The licensee's corrective actions included replacing the armature assembly associated with the relay and retesting the relay satisfactorily. Additional corrective actions to address the preventive maintenance activities are expected as a result of Condition Reports 108440 and 108548.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, with the NB0215 186/M lockout relay failed on or before August 2, 2016, the safety-related 4160 volt NB02 bus was susceptible to locking out as a result of an overcurrent condition. In accordance with NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined this finding is not a deficiency affecting the design or qualification of a mitigating structure, system, or component that maintained its operability or functionality; the finding does not represent a loss of system and/or function; the finding does not represent an actual loss of function of at least a single train for greater than its Technical Specification-allowed outage time; and the finding does not represent an actual loss of function of one or more non-Technical Specification trains of equipment designated as high safety-significant. The finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience, because the organization did not systematically and effectively evaluate relevant internal and external operating experience in a timely manner. This issue is indicative of current performance because the station did not take corrective actions to address the station's failure to adequately consider operating experience, the station did not recognize the need to revise the testing and maintenance strategy following the August 2, 2016, failure, and the same failure would be expected to occur.

Inspection Report# : 2016003 (*pdf*)

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: VIO Violation

Inadequate Measures to Assure SGK05A Issues Were Promptly Corrected

The inspectors identified a Green cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's inadequate measures to assure that corrective action was taken to preclude repetition of a significant condition adverse to quality. Specifically, measures to correct train A Class 1E electrical equipment air conditioning system (SGK05A) issues following two trips of the unit on October 18, 2013, failed to preclude repetition, which resulted in the SGK05A unit tripping twice on May 15, 2015; the train A safety-related batteries, inverters, and alternating and direct current buses being declared inoperable due to the loss of area cooling; two separate Technical Specification 3.0.3 entries; and separate technical specification required reactor power reductions to 93 and 94.7 percent. The licensee's immediate corrective actions included troubleshooting to determine the direct cause of the compressor trips, stationing a dedicated operator following the second trip on May 15, 2015, and subsequently implementing Temporary Modification 15-013-GK-00, which restored compliance. Actions to prevent recurrence following the May 15, 2015, SGK05A trips, documented in apparent cause evaluation 96392, included conducting a seminar with station managers to review lessons learned from the event, completing a change package to replace the SGK05A compressor that has been the source of residual contamination that has led to numerous trips of the unit, and tracking of the timely replacement of the SGK05A compressor with a due date of December 15, 2016. Wolf Creek entered this issue into its corrective action program as Condition Reports 96392 and 96397.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the train A safety-related batteries, inverters, and alternating and direct current buses became inoperable and their capability to respond to initiating events to prevent undesirable consequences was impacted as a result of the SGK05A unit tripping. In accordance with Inspection Manual Chapter 0609.04, "Initial Characterization of Findings," and Exhibit 3 of Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and April 29, 2015, respectively, the performance deficiency affects a mitigating structure, system, and component. The performance deficiency does not affect the design or qualification of a mitigating structure, system, and component, and the structure, system, and component did not maintain its functionality. Additionally, the finding does not represent a loss of system and/or function, the finding does not represent an actual loss of function of at least a single train for greater than its technical specification allowed outage time or two separate safety systems out-of-service for greater than their technical specification allowed outage time, and the finding does not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. Therefore, the inspectors determined that this finding is of very low safety significance (Green). In accordance with Inspection Manual Chapter 0310, "Aspects Within The Cross-Cutting Areas," issued December 4, 2014, the finding has a cross cutting aspect in the area of human performance, resources, because the licensee did not ensure that personnel, equipment, procedures, and other resources were available and adequate to support nuclear safety. Specifically, senior managers did not ensure successful completion of the replacement of the SGK05A compressor in Refueling Outage 20, which was a missed opportunity that resulted in the SGK05A unit tripping twice on May 15, 2015, as a result of the same direct cause [H.1].

Inspection Report# : 2015004 (*pdf*)

Inspection Report# : 2016009 (*pdf*)

Barrier Integrity

Significance:  Jun 30, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Ensure Safety-Related Valves were Adequately Protected from Internal Flooding Hazards

The inspectors identified a Green non-cited violation of 10 Code of Federal Regulations Part 50, Appendix B, Criterion III, Design Control, for the licensee's failure to establish adequate measures to ensure that safety-related components remained capable of performing their functions. Specifically, the licensee did not have adequate preventive maintenance or testing tasks established to provide reasonable assurance that floor drains would not become clogged and impact the ability of train A safety-related components to perform their expected functions. As a result, a containment isolation valve was not adequately protected. The station's immediate corrective actions included entering the condition into the corrective action program, declaring the subject valves inoperable, and cleaning the debris from the clogged floor drains. The licensee created Work Order 17-429068-000 to evaluate and establish new preventive maintenance tasks for floor drains, and the licensee is continuing with, but had not yet completed, the remainder of the floor drain inspections for other safety-related areas.

The failure to establish adequate measures to ensure that floor drains in safety-related areas remained free of debris and safety-related components remained capable of performing their function is a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the structure, system, and component and barrier 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, and containment) protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the finding using Exhibit 3, "Barrier Integrity Screening Questions," of Inspection Manual Chapter 0609, Appendix A, "Significance Determination Process (SDP) for Findings At-Power," and determined this finding was of very low safety significance (Green). The inspectors determined that the finding has a problem identification and resolution cross-cutting aspect in the area of identification because individuals did not identify issues completely, accurately, and in a timely manner in accordance with the program. Condition Report 90879, documented in January 2015, was an opportunity for the licensee to identify the inadequacy of the floor drain preventive maintenance and testing strategy and reflects current performance.

Inspection Report# : 2017002 (*pdf*)

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 : September 05, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017