

Wolf Creek 1

4Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Nov 24, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Provide Adequate Instructions for Control of Feedwater Flow in Startup Procedures

The inspectors reviewed a self-revealing Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because the licensee did not assure the procedures for reactor startup were appropriate to the circumstances. Specifically, prior to May 3, 2015, the licensee failed to include adequate instructions for transferring feedwater flow from the main feedwater regulating valve bypass valves to the main feedwater regulating valves in Procedure GEN 00-003, "Hot Standby to Minimum Load." As a result, operations personnel did not properly control feedwater flow during a reactor startup, which led to a plant trip on May 3, 2015. The licensee entered this condition into their corrective action program as Condition Reports 96064 and 100583. The corrective action taken to restore compliance was to revise Procedure GEN 00-003 to update the process for transferring main feedwater control from the main feedwater regulating valve bypass valves to the main feedwater regulating valves, including the monitoring of necessary parameters steam flow and feedwater flow.

The failure to assure the procedures for reactor startup were appropriate to the circumstances was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it adversely affected the human performance 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. Specifically, prior to May 4, 2015, the licensee did not provide adequate guidance for the control of feedwater flow during plant startup, resulting in a plant trip on May 3, 2015. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because the finding did not cause a trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. Specifically, following the plant trip, all mitigation equipment responded as designed.

The inspectors concluded that the finding reflected current licensee performance and had a cross-cutting aspect in the area of human performance, avoid complacency, in that the licensee did not recognize and plan for the possibility of mistakes, latent issues, and inherent risk even while expecting successful outcomes. Specifically, the licensee did not recognize and plan for potential of mistakes when using a procedure that did not contain adequate guidance for minimizing mismatches in steam flow and feedwater flow.(H.12)

Inspection Report# : [2015009](#) (*pdf*)

Significance: G Nov 24, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure of the Plant Referenced Simulator to Demonstrate Expected Plant Response

The inspectors reviewed a self-revealing Green non-cited violation of 10 CFR 55.46(c)(1), "Plant-referenced Simulators," due to the licensee's failure to maintain a plant-referenced simulator used for the administration of the operating test such that it would demonstrate expected plant response to operator input and to normal, transient, and accident conditions to which the simulator has been designed to respond. Specifically, until June 13, 2015, the

licensee failed to maintain the simulator consistent with actual plant response when using the main feed regulating valves in manual control. The licensee entered this condition into their corrective action program as Condition Report 96252. The corrective action taken to restore compliance was to change the simulator modeling of the main feedwater regulating valve controller to match the installed plant controllers.

The failure to maintain the plant-referenced simulator such that it would accurately reproduce the operating characteristics of the facility was a performance deficiency. The performance deficiency is more than minor because it adversely affected the human performance 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. Specifically, prior to June 13, 2015, the licensee failed to maintain the simulator consistent with actual plant response when using the main feed regulating valves in manual control, which impacted operator control of the plant during power operations. Using NRC Inspection Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)," issued December 6, 2011, the inspectors determined that the finding was of very low safety significance (Green) because the deficient simulator performance did not negatively impact operator personnel performance in the actual plant during a reportable event. Specifically, after the trip occurred the operators took all appropriate required actions.

The inspectors concluded that the finding did not have a cross-cutting aspect because the finding was not indicative of current performance. The configuration change that introduced the error occurred more than three years before the event. Specifically, the discrepancy between the simulator and the plant manual controller rates had existed since simulator use began in 1985.

Inspection Report# : [2015009](#) (*pdf*)

Mitigating Systems

Significance: TBD Dec 16, 2015

Identified By: Licensee

Item Type: AV Apparent Violation

Incomplete and Inaccurate Medical Information Resulted in Issuance of a Renewed Operator License Without a Required Medical Restriction

Wolf Creek Nuclear Operating Corporation (Wolf Creek) identified two apparent violations (AVs): (1) An apparent violation of Title 10 of the Code of Federal Regulations (10 CFR) 50.9, "Completeness and Accuracy of Information;" and (2) an apparent violation of 10 CFR 50.74, "Notification of Change in Operator or Senior Operator Status." Specifically, on January 10, 2010, Wolf Creek submitted certified copies of an NRC operator license application that did not specify that the applicant required a restriction (to take medication as prescribed) in order to maintain medical qualifications. The NRC issued the renewed operator's initial license on February 25, 2010, but without the necessary medical restriction (AV #1). From May 31, 2006, until July 9, 2015, Wolf Creek had several additional opportunities to identify that medication was required to compensate for a disqualifying medical condition and that a license condition was required during the licensee's biennial licensed operator requalification program reviews and medical examinations. On July 9, 2015, a period that exceeded 30 days from when the condition was identified, the facility notified the NRC of the medical condition via a letter requesting amendment to the operator's license to include the restriction (AV #2). On July 15, 2015, the NRC issued the license amendment with the new restriction. This issue was entered into Wolf Creek's corrective action program.

The inspector determined that Wolf Creek's failure to provide complete and accurate information to the NRC in the operator license application and to notify the NRC of a change in a licensed operator's status for a condition was a performance deficiency. This performance deficiency was known by the licensee and within its ability to foresee and correct and should have been prevented. The inspector determined that traditional enforcement applies, as the issue

affected the NRC's ability to perform its regulatory function. Namely, the NRC relies upon Wolf Creek to ensure all licensed operators meet the medical conditions of their licenses. If, during the term of the individual operator license, an operator develops a permanent physical or mental disability that causes the operator to fail to meet the requirements of 10 CFR 55.21, "Medical Examination," the licensee shall notify the NRC within 30 days of learning of the diagnosis, in accordance with 10 CFR 50.74(c). Additionally, the NRC issued a renewed operator license to the applicant based on information that was not complete and accurate in all material aspects. The performance deficiencies were screened against the Reactor Oversight Process per the guidance of Inspection Manual Chapter 0612, Appendix B, "Issue Screening." No associated Reactor Oversight Process finding was identified and no cross-cutting aspect was assigned. These issues constitute apparent violations in accordance with the NRC's Enforcement Policy and their final significance will be dispositioned in separate future correspondence.

Inspection Report# : [2015010](#) (pdf)

Significance: TBD Dec 16, 2015

Identified By: Licensee

Item Type: AV Apparent Violation

Failure to Report a Permanent Change in a Licensed Operator's Medical Status and Request a Condition be Placed on the Operator's License

Wolf Creek Nuclear Operating Corporation (Wolf Creek) identified two apparent violations (AVs): (1) An apparent violation of Title 10 of the Code of Federal Regulations (10 CFR) 50.9, "Completeness and Accuracy of Information;" and (2) an apparent violation of 10 CFR 50.74, "Notification of Change in Operator or Senior Operator Status." Specifically, on January 10, 2010, Wolf Creek submitted certified copies of an NRC operator license application that did not specify that the applicant required a restriction (to take medication as prescribed) in order to maintain medical qualifications. The NRC issued the renewed operator's initial license on February 25, 2010, but without the necessary medical restriction (AV #1). From May 31, 2006, until July 9, 2015, Wolf Creek had several additional opportunities to identify that medication was required to compensate for a disqualifying medical condition and that a license condition was required during the licensee's biennial licensed operator requalification program reviews and medical examinations. On July 9, 2015, a period that exceeded 30 days from when the condition was identified, the facility notified the NRC of the medical condition via a letter requesting amendment to the operator's license to include the restriction (AV #2). On July 15, 2015, the NRC issued the license amendment with the new restriction. This issue was entered into Wolf Creek's corrective action program.

The inspector determined that Wolf Creek's failure to provide complete and accurate information to the NRC in the operator license application and to notify the NRC of a change in a licensed operator's status for a condition was a performance deficiency. This performance deficiency was known by the licensee and within its ability to foresee and correct and should have been prevented. The inspector determined that traditional enforcement applies, as the issue affected the NRC's ability to perform its regulatory function. Namely, the NRC relies upon Wolf Creek to ensure all licensed operators meet the medical conditions of their licenses. If, during the term of the individual operator license, an operator develops a permanent physical or mental disability that causes the operator to fail to meet the requirements of 10 CFR 55.21, "Medical Examination," the licensee shall notify the NRC within 30 days of learning of the diagnosis, in accordance with 10 CFR 50.74(c). Additionally, the NRC issued a renewed operator license to the applicant based on information that was not complete and accurate in all material aspects. The performance deficiencies were screened against the Reactor Oversight Process per the guidance of Inspection Manual Chapter 0612, Appendix B, "Issue Screening." No associated Reactor Oversight Process finding was identified and no cross-cutting aspect was assigned. These issues constitute apparent violations in accordance with the NRC's Enforcement Policy and their final significance will be dispositioned in separate future correspondence.

Inspection Report# : [2015010](#) (pdf)

Significance:  Aug 06, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Class 1E 4kV Feeder Breakers from Station Blackout Diesel Generators Current Transformer Wiring not Installed per Design Drawings

The inspectors identified a Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, for not installing the current transformer wiring in the Class 1E 4kV alternate feeder breaker cubicles from the station blackout diesel generators per the design drawings.

As a result, testing performed seven months after the system was declared operational identified that the connections were unable to power the safety-related buses due to incorrect wiring of the current transformers. The licensee entered this issue into the corrective action program as Condition Report 83379.

This finding was more than minor because it was associated with the Mitigating Systems Cornerstone to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, due to the incorrect wiring of the current transformers, the SBO diesel generators were unable to power safety related buses as they were designed. The inspectors performed the initial significance determination for the finding using NRC Inspection Manual 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," dated June 19, 2012. The finding required a detailed evaluation because it had the potential to degrade at least one train of a system that supports a risk significant system or function. Therefore, a senior reactor analyst performed a bounding detailed risk evaluation. The finding was of very low safety significance (Green) because the risk assessment programs quantified the change in core damage frequency less than 1.0×10^{-6} .

The inspectors determined that the finding had a teamwork cross-cutting aspect in the area of human performance. The licensee individuals and work groups did not communicate and coordinate their activities within and across organizational boundaries. Specifically a drawing revision was not properly attached to the work order which resulted in the incorrect wiring of both trains, and because different groups were completing different components, parts of the wiring were incorrectly installed per a superseded revision [H.4].

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

Significance:  Mar 28, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Assess the Operability of Emergency Diesel Generator B during Emergent Work Activities

The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, associated with the failure to properly preplan maintenance such that it would not affect safety-related equipment. Specifically, during emergent work activities on January 29, 2015, the licensee's maintenance planning failed to recognize that when electrical cabinet doors containing safety-related under voltage and under frequency relays were opened to accomplish troubleshooting activities, the cabinet was not in a seismically qualified configuration. Thus the maintenance activity had the potential to impact the reliable operation of emergency diesel generator B during a seismic event. The licensee initiated Standing Order 37, "Safety Related Cabinet Operability Requirements," Revision 0, to provide the requirements for assessing operability of safety-related electrical cabinet and panel doors out of their seismically qualified configuration during maintenance activities. The licensee entered this issue into their corrective action program for resolution as Condition Reports 91501 and 94605.

The licensee's failure to properly preplan maintenance such that it would not affect safety-related equipment during emergent work activities was a performance deficiency. The performance deficiency was determined to be more than

minor because it was 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 event to prevent undesirable consequences (i.e., core damage). Specifically, the licensee's failure to properly preplan maintenance resulted in emergency diesel generator B being placed in a condition that did not meet its seismic design requirements. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Finding At-Power," dated June 19, 2012, inspectors determined that the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The finding has a cross-cutting aspect in the area of human performance associated with work management. Specifically, the licensee did not implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority, including the identification and management of risk commensurate to the work.(H.5)

Inspection Report# : [2015001](#) (pdf)

Significance:  Mar 28, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Complete an Adequate Operability Evaluation for Declaring the Train A Control Room Air Conditioning Unit Operable

The inspectors identified non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to complete an adequate operability evaluation in accordance with procedure AP-28001, "Operability Evaluations," Revision 24 following the failure to meet a surveillance test acceptance criteria. Specifically, the licensee did not have an accurate technical basis for declaring the train A control room air condition unit operable when the minimum air flow rate was not met. The licensee's operability evaluation, which declared the train A control room air condition unit operable, incorrectly applied instrument uncertainty and used a superseded minimum air flow value. When these inaccuracies were addressed, the licensee determined the train was inoperable. The licensee entered this issue into their corrective action program as Condition Report 92274.

The licensee's use of an inadequate technical basis for an operability evaluation of a non-conforming condition resulting in the train A control room air conditioning air condition unit being declared operable when it was actually inoperable was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone, and affected the associate cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating event to prevent undesirable consequences (i.e., core damage). Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Finding At-Power," dated June 19, 2012, inspectors determined that the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more nontechnical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program. The finding has a cross-cutting aspect in the area of human performance associated with conservative bias component because the licensee did not use a decision making-practice that emphasized prudent choices over those that are simply allowable. A proposed action was determined to be safe in order to proceed, rather than unsafe in order to stop.(H.14)

Inspection Report# : [2015001](#) (pdf)

Significance: G May 26, 2012

Identified By: NRC

Item Type: VIO Violation

Failure to Take Timely corrective Action to Preclude Repetition

The inspectors identified a violation of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to take corrective action to preclude repetition of system leaks due to water hammer events in the essential service water system. Extensive inadequately evaluated corrosion in the system has led to multiple water-hammer-induced leaks of essential service water piping. These leaks were the subject of two previous violations issued by the NRC. The licensee failed to take timely corrective action to restore compliance. The licensee entered this finding in its corrective action program as condition report 53443.

The failure to preclude recurrence of water hammer in the essential service water system and the failure to take adequate corrective action to control internal pitting corrosion in essential service water system piping was a performance deficiency. The deficiency was more than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. It is therefore a finding. Using Inspection Manual Chapter 0609.04, “Phase 1 - Initial Screening and Characterization of Findings,” the team determined that the finding was of very low safety significance (Green) because the finding was a design or qualification deficiency that was confirmed not to result in loss of system operability or functionality. This finding has a cross-cutting aspect in the corrective action program component of the problem identification and resolution cross-cutting area because the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance (P.1(d)). (Section 4OA2.5.c)

Inspection Report# : [2012007](#) (pdf)

Barrier Integrity

Significance: G Sep 26, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Implementation of the Breach Authorization Procedure

The inspectors identified a non cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” associated with the licensee’s inadequate implementation of Procedure AP 10 104, “Breach Authorization,” Revision 34. Specifically, control room door 36043, which is a fire, security, and control room ventilation isolation signal barrier, was fully opened prior to the breaching party obtaining required written authorization. Additionally, following the opening of normally closed control room door 36043, control room door 36042 was not adequately positioned, which resulted in a doubt on the operability of the control room envelope boundary. Wolf Creek’s immediate corrective actions included closing door 36043 to restore the control room boundary, completing a breach authorization permit until repairs could be completed on door 36043, and entering the issue into its corrective action program as Condition Report 99097.

This finding is more than minor because it is associated with the system, structure, and component and barrier performance attribute of the Barrier Integrity Cornerstone, and affected the associated cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment), including the radiological barrier functionality of the control room, are maintained and protect the public from radionuclide

releases caused by accidents or events. Specifically, while control room door 36043 was opened and control room door 36042 was being credited as the control room envelope boundary, door 36042 was not in the required position to maintain the control room envelope operable, and there was a reasonable doubt on the operability of the control room envelope because neither operations nor stationed security personnel verified and recognized the required position of door 36042. 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 was a deficiency affecting the control room, auxiliary, reactor, or spent fuel pool building. The performance deficiency did not represent only a degradation of the radiological barrier function, but the deficiency did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere. Therefore, the inspectors determined the finding was of very low safety significance (Green). The finding has a cross cutting aspect in the area of human performance, challenge the unknown, because Wolf Creek did not stop when faced with uncertain conditions or evaluate and manage risks before proceeding. Specifically, Wolf Creek's immediate actions to open door 36043 without a breach authorization permit and its actions to inadequately position door 36042 were not adequately evaluated prior to implementation, which resulted in door 36042 being left in a position inconsistent with Procedure AP 10 104 and a reasonable doubt on the operability of the control room envelope.(H.11)

Inspection Report# : [2015003](#) (pdf)

Significance:  Mar 28, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Station Boundary Watch for Opening Auxiliary Building Emergency Exhaust System Boundary Door

The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, Drawings," associated with the licensee's failure to follow the requirements of Station Procedure AP 10-104, "Breach Authorization," Revision 32. Specifically, the licensee's failure initiate a breach permit and station a boundary watch when the auxiliary building emergency exhaust system boundary door 41015 was opened multiple times for transporting scaffolding from the turbine building to the auxiliary building. Opening this door without compensatory measures rendered the auxiliary building emergency exhaust system inoperable. The license entered this issue into their corrective action program for resolution as Condition Reports 92315 and 92630.

The licensee's failure to initiate a breach permit and implement required compensatory measures for when the auxiliary building emergency exhaust system boundary door 41015 was open was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the system, structure, and component and barrier performance attribute of the Barrier Integrity Cornerstone, and affected the associated cornerstone objective to ensure the radiological barrier functionality of the auxiliary building emergency exhaust system. Specifically, without a dedicated individual in constant communication with the control room, as required by AP 10-104, opening this door required entry of Technical Specification 3.7.13 Limited Condition of Operation Condition B. The longest period door 41015 was open was approximately one hour without the required compensatory measure. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Finding At-Power," dated June 19, 2012, inspectors determined that the finding screened as having very low safety significance (Green) because the finding only involved a degradation of the radiological barrier function provided for the auxiliary building. The finding has a cross-cutting aspect in the area of human performance associated with work management. Specifically, the organization failed to implement a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority, including the identification and management of risk commensurate to the work.(H.5)

Inspection Report# : [2015001](#) (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

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