



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

November 10, 2015

Mr. Adam C. Heflin, President and
Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

**SUBJECT: WOLF CREEK GENERATING STATION – NRC INTEGRATED INSPECTION
REPORT 05000482/2015003**

Dear Mr. Heflin:

On September 26, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Wolf Creek Generating Station. On October 14, 2015, the NRC inspectors discussed the results of this inspection with Annette Stull, Vice President and Chief Administrative Officer, and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Wolf Creek Generating Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC resident inspector at the Wolf Creek Generating Station.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's

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Sincerely,

/RA/

Nicholas H. Taylor, Branch Chief
Project Branch B
Division of Reactor Projects

Docket No. 50-482
License No. NPF-42

Enclosure:
Inspection Report 05000482/2015003
w/ Attachment: Supplemental Information

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A. Heflin

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Letter to Adam C. Heflin from Nicholas Taylor dated November 10, 2015

SUBJECT: WOLF CREEK GENERATING STATION – NRC INTEGRATED INSPECTION
REPORT 05000482/2015003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000482
License: NPF-42
Report: 05000482/2015003
Licensee: Wolf Creek Nuclear Operating Corporation
Facility: Wolf Creek Generating Station
Location: 1550 Oxen Lane NE
Burlington, KS 66839
Dates: June 28 through September 26, 2015
Inspectors: D. Dodson, Senior Resident Inspector
F. Thomas, Resident Inspector
R. Stroble, Resident Inspector
Approved By: Nicholas H. Taylor
Chief, Project Branch B
Division of Reactor Projects

SUMMARY

IR 05000482/2015003; 06/28/2015 – 09/26/2015; Wolf Creek Generating Station; Operability Determinations and Functionality Assessments.

The inspection activities described in this report were performed between June 28 and September 26, 2015, by the resident inspectors at Wolf Creek Generating Station. One finding of very low safety significance (Green) is documented in this report. 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," issued April 29, 2015. Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas," issued December 4, 2014. Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy, issued February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Barrier Integrity

- Green. 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, which requires authorization to be obtained prior to breaching certain barriers and door 36042 to be within 0.25 inches of the closed position with door 36043 open. 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 represented 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]. (Section 1R15)

PLANT STATUS

Wolf Creek began the inspection period at 100 percent power and remained at or near 100 percent power for the entire inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Summer Readiness for Offsite and Alternate Alternating Current Power Systems

a. Inspection Scope

On July 10, 2015, the inspectors completed an inspection of the station's off-site and alternate-alternating current power systems. The inspectors inspected the material condition of these systems, including transformers and other switchyard equipment to verify that plant features and procedures were appropriate for operation and continued availability of off-site and alternate-alternating current power systems. The inspectors walked down the switchyard to observe the material condition of equipment providing off-site power sources.

The inspectors verified that the licensee's procedures included appropriate measures to monitor and maintain availability and reliability of the off-site and alternate-alternating current power systems.

These activities constituted one sample of summer readiness of off-site and alternate-alternating current power systems, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

.2 Readiness to Cope with External Flooding

a. Inspection Scope

On September 25, 2015, the inspectors completed an inspection of the station's readiness to cope with external flooding. After reviewing the licensee's flooding analysis, the inspectors chose four plant areas that were susceptible to flooding:

- spent fuel pool building
- turbine building
- auxiliary building
- condensate storage tank

The inspectors reviewed plant design features and licensee procedures for coping with flooding. The inspectors walked down the selected areas to inspect the design features,

including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether credited operator actions could be successfully accomplished.

These activities constituted one sample of readiness to cope with external flooding, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walk-downs of the following risk-significant systems:

- July 28, 2015, train B residual heat removal
- July 29, 2015, train B motor-driven auxiliary feedwater
- August 4, 2015, train A essential service water
- September 22, 2015, train B centrifugal charging

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the systems and/or trains were correctly aligned for the existing plant configuration.

These activities constituted four partial system walk-down samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on six plant areas important to safety:

- July 7, 2015, fire area ESWC, emergency service water vertical loop chase
- August 4, 2015, fire areas ESW-1 and ESW-2, essential service water pump house trains A and B, respectively
- August 12, 2015, circulating water screen house floor area

- August 20, 2015, fire area A-1, auxiliary building, elevation 1974 feet, general area
- August 20, 2015, fire area A-8, auxiliary building, elevation 2000 feet, general area
- August 21, 2015, fire areas C-9 and C-10, engineered safety feature, NB01 and NB02 switchgear rooms, respectively

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted six quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On August 13, 2015, the inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose one plant area containing risk-significant structures, systems, and components that were susceptible to flooding:

- August 13, 2015, emergency service water pump house

The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

In addition, on August 4, 2015, the inspectors completed an inspection of underground bunkers susceptible to flooding. The inspectors selected two underground vaults that contained risk-significant or multiple-train cables whose failure could disable risk-significant equipment:

- train B essential service water system manhole MHE2B
- train B essential service water system manhole MHE3B

The inspectors observed the material condition of the cables and splices contained in the vaults and looked for evidence of cable degradation due to water intrusion. The inspectors verified that the cables and vaults met design requirements.

These activities constitute completion of one flood protection measures sample and one bunker/manhole sample, as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

On September 15, 2015, the inspectors completed an inspection of the readiness and availability of risk-significant heat exchangers. The inspectors reviewed the data from a performance test for the control room air conditioning system heat exchanger SGK04B, and observed the licensee's inspection of heat exchanger SGK04B and the material condition of the heat exchanger internals. Additionally, the inspectors walked down heat exchanger SGK04B to observe its performance and material condition and verified that heat exchanger SGK04B was correctly categorized under the Maintenance Rule and was receiving the required maintenance.

These activities constitute completion of one heat sink performance annual review sample, as defined in Inspection Procedure 71111.07.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On September 15, 2015, the inspectors observed an evaluated simulator scenario performed by an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance in executing Requalification Simulator Exam scenarios 70-04 and 70-15. The inspectors also assessed the modeling and performance of the simulator during the requalification activities.

These activities constitute completion of one quarterly licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

On August 31, 2015, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity and risk due to the plant computer being out of service, entry into off-normal Procedure OFN RJ-23, "NPIS [Nuclear Plant Information System] Malfunctions," Revision 24, and subsequent 1 percent power reduction.

In addition, the inspectors assessed the operators' adherence to plant procedures, including AP 21-001, "Conduct of Operations," Revision 73, and other operations department policies.

These activities constitute completion of one quarterly licensed operator performance sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed two risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- August 11, 2015, planned auxiliary feedwater pump B maintenance
- August 17, 2015, planned component cooling water pump A maintenance

The inspectors verified that the risk assessments were performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessments and verified that the licensee implemented appropriate risk management actions based on the results of the assessments.

The inspectors also observed portions of three emergent work activities that had the potential to affect the functional capability of mitigating systems:

- July 6, 2015, emergent equalizing charge on safety-related battery NK12
- September 14, 2015, emergent diesel fire pump and non-safety auxiliary feedwater pump maintenance
- September 22, 2015, emergent emergency diesel generator B jacket water keep warm pump maintenance

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to

minimize the impact of the work activities on unaffected structures, systems, and components.

These activities constitute completion of two maintenance risk assessments and three emergent work control inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed four operability determinations and functionality assessments that the licensee performed for degraded or nonconforming structures, systems, or components:

- August 6, 2015, Condition Report 98481, functionality assessment of the technical support center with the technical support center air-conditioning unit non-functional and outdoor temperatures greater than 95 degrees Fahrenheit
- August 26, 2015, Condition Report 99033, operability determination of the NK14 battery with 14 cells outside technical specification category A and B limits
- August 28, 2015, Condition Report 99097, operability determination of the control room boundary with the control room door improperly opened
- September 10, 2015, Condition Report 99409, functionality assessment of the emergency offsite facility with the emergency offsite facility diesel generator non-functional

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded structures, systems, or components to be operable or functional, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability or functionality. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability or functionality of the degraded structures, systems, or components.

These activities constitute completion of four operability and functionality review samples as defined in Inspection Procedure 71111.15.

b. Findings

Introduction. The inspectors identified a Green 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, which requires authorization to be obtained prior to breaching certain barriers and door 36042 to be within 0.25 inches of the closed position with door 36043 open. 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.

Description. On August 28, 2015, the locking mechanism of door 36043 was not functioning properly and was not allowing normal ingress or egress into or out of the control room. Control room door 36043 is normally closed but utilized for normal entry and exit to and from the control room. Control room door 36043 is a credited fire, security, and control room ventilation isolation signal barrier. Door 36043 was opened and security personnel were posted at the door to facilitate entry and exit into and out of the control room. Procedure AP 10-104, "Breach Authorization," states in Section 6.1.3, "Prior to breaching a barrier the Breaching Party shall obtain the required authorization as delineated on the Breach Authorization Permit except as provided for in Exemptions Section 6.7." Section 6.7 of Procedure AP 10-104 states, "Doors 36042 and 36043 share the same functionality except for Security and Natural Event (OFN SG-003) Barrier functions. For all other functions, either 36042 or 36043 are required to be closed for barrier integrity. When 36042 is being used, Security will have to be posted and a Breach Authorization Permit issued." When door 36043 was initially opened with door 36042 still open, Security was initially posted but did not have an issued breach authorization permit.

After both doors had been fully opened for a few moments, Wolf Creek operations personnel then directed that the second door in the same passageway—control room door 36042—be closed to restore the control room boundary and to ensure that the fire, security, and control room ventilation isolation signal barrier functions were maintained. Control room door 36042 was partially closed by security personnel but not placed in the fully closed and engaged position. Control room door 36042 is a heavy door that requires increased effort to open and close, especially when the door is fully engaged to support its additional missile barrier function.

The inspectors were in the control room when the locking mechanism of door 36043 began to malfunction and noted Wolf Creek's actions and the partial closure of door 36042. The inspectors questioned operations personnel regarding the required positions of doors 36042 and 36043 and noted that neither door 36042 nor door 36043 appeared to be completely closed. Operations personnel informed the inspectors that Procedure AP 10-104, "Breach Authorization," lists the required positions of control room doors 36042 or 36043 as 0.25 inches from closed. Procedure AP 10-104 also states with reference to door 36042, "Normally positioned 'OPEN,' close during Tornado threat and when door 36043 is breached." At the time the inspectors were questioning operations personnel about the boundary requirements, the operations personnel did not consider the control room boundary degraded based on the assumption that door 36042 was positioned to within 0.25 inches of the fully closed position and a security officer was posted at the door.

After discussing the required positions of doors 36042 and 36043 with operations personnel the inspectors exited the control room and observed that door 36042 was not closed and was not within 0.25 inches of the closed position—it was open approximately 1-1.5 inches from the closed position—and would not remain in a position such that the door was less than 0.25 inches from the closed position. Additionally, the stationed security officer did not recognize that the required door position was not being maintained. Hence, there was a reasonable doubt on the operability of the control room

envelope boundary. The inspectors immediately notified Wolf Creek operations of the condition and ensured that Wolf Creek personnel observed the same condition. Wolf Creek immediately took action to completely close door 36043 and complete a breach authorization permit until repairs could be completed on door 36043. The total time that neither door was in the appropriate position was approximately 0.5 hours. Although a security officer was stationed at the door during the time that the door was not in the appropriate position, neither the operations personnel nor the stationed security officer verified or recognized that door 36042's position was outside of administrative requirements for maintaining the control room envelope operable. The licensee entered this issue into its corrective action program as Condition Report 99097.

Analysis. The inspectors determined that the inadequate implementation of Procedure AP 10-104, "Breach Authorization," was a performance deficiency. 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 inspectors determined that 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, 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].

Enforcement. Title 10 of the *Code of Federal Regulations* Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings." Procedure AP 10-104, "Breach

Authorization,” Revision 34, an Appendix B quality related procedure, requires door 36042 to be within 0.25 inches of the closed position with door 36043 open. Contrary to the above, on August 28, 2015, for approximately 30 minutes, Wolf Creek personnel failed to accomplish activities affecting quality in accordance with procedure. Specifically, Wolf Creek did not maintain door 36042 within 0.25 inches of the closed position with door 36043 open. 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. Because this violation was of very low safety significance and this issue was entered into the licensee’s corrective action program, this violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy: NCV 05000482/2015003-01, “Inadequate Implementation of the Breach Authorization Procedure.”

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed one temporary plant modification that affected risk-significant structures, systems, and components. On August 19, 2015, the inspectors reviewed a temporary modification to remove short term noise associated with the containment atmosphere particulate radioactivity monitors GTRE0031 and GTRE0032.

The inspectors verified that the licensee had installed this temporary modification in accordance with technically adequate design documents. The inspectors verified that this modification did not adversely impact the operability or availability of affected structures, systems, and components. The inspectors reviewed design documentation and plant procedures affected by the modification to verify the licensee maintained configuration control.

These activities constitute completion of one sample of temporary modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed five post-maintenance testing activities that affected risk-significant structures, systems, or components:

- July 13, 2015, centrifugal charging B pump test following planned maintenance
- July 28, 2015, residual heat removal A pump test following planned maintenance
- September 10, component cooling water D pump test following planned maintenance

- September 16, 2015, safety injection system train A EMHV8924 valve test following planned maintenance
- September 23, 2015, centrifugal charging pump A test following planned maintenance

The inspectors reviewed licensing- and design-basis documents for the structures, systems, or components and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected structures, systems, or components.

These activities constitute completion of five post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed four risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the structures, systems, and components were capable of performing their safety functions:

In-service tests:

- August 27, 2015, STS EF-100A, "ESW [Essential Service Water] System Inservice Pump A & ESW A Check Valve Test," Revision 43A
- September 17, 2015, STS EN-100B, "Containment Spray Pump B Inservice Pump Test," Revision 28

Reactor coolant system leak detection tests:

- September 22, STS BB-006, "RCS [Reactor Coolant System] Water Inventory Balance using the NPIS [Nuclear Plant Information System] Computer," Revision 14

Other surveillance tests:

- July 20, STS KJ-005A, "Manual/Auto Start, Sync & Loading of EDG NE01 [Emergency Diesel Generator A]," Revision 63

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the tests satisfied appropriate acceptance criteria. The inspectors verified that the

licensee restored the operability of the affected structures, systems, and components following testing.

These activities constitute completion of four surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

40A1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index: Emergency Alternating Current Power Systems (MS06)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of July 2, 2014, through August 25, 2015, to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for emergency alternating current power systems, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: High Pressure Injection Systems (MS07)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of July 2, 2014, through August 25, 2015, to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for high pressure injection systems, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index: Cooling Water Support Systems (MS10)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of July 2, 2014, through August 25, 2015, to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for cooling water support systems, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152)

Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program and periodically attended the licensee's condition report screening meetings. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

40A6 Meetings, Including Exit

Exit Meeting Summary

On October 14, 2015, the inspectors presented the inspection results to Annette Stull, Vice President and Chief Administrative Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Baban, Manager, System Engineering
W. Brown, Superintendent, Security Operations
T. East, Supervisor, Emergency Planning
J. Edwards, Manager, Operations
D. Erbe, Manager, Security
C. Hafenstine, Manager, Regulatory Affairs
A. Heflin, President and Chief Executive Officer
S. Henry, Manager, Integrated Plant Scheduling
R. Hobby, Licensing Engineer
M. Legresley, System Engineer
D. Mand, Manager, Design Engineering
W. Muilenburg, Supervisor, Licensing
L. Ratzlaff, Manager, Maintenance
C. Reasoner, Site Vice President
M. Skiles, Manager, Radiation Protection
T. Slenker, Operations Technical Coordinator
S. Smith, Plant Manager
A. Stueve, System Engineer
A. Stull, Vice President and Chief Administrative Officer,
J. Suter, Supervisor Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000482/2015003-01 NCV Inadequate Implementation of the Breach Authorization Procedure (Section 1R15)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|------------------------|-----------------|
| AP 21C-001 | Wolf Creek Substation | 16A |
| AP 22B-001 | Outage Risk Management | 18A |
| OFN SG-048 | Flash Flood Warning | 1 |

Condition Reports

89394 89746 97844

Drawings

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|-------------------------------------|-----------------|
| E-1001 | Single Line Diagram Site Area Loads | 37 |

Miscellaneous

| <u>Number</u> | <u>Title</u> | <u>Date</u> |
|--------------------|--|-----------------|
| 0305 | Westar Energy, Inc. Transmission Operating Directive: Loss of Power to the Wolf Creek Generating Station | October 5, 2007 |
| 0400 | Westar Energy, Inc. Transmission Operations Procedure: Wolf Creek 345 kV Bus Voltage | March 30, 2010 |
| 0414 | Westar Energy, Inc. Transmission Operations Procedure: Monitoring Wolf Creek Contingency Study 345 kV Bus Voltage | June 20, 2013 |
| K01-058 | NERC Interface Coordination Agreement For the Wolf Creek Substation Between Westar Energy, Inc. and Wolf Creek Nuclear Operating Corporation | March 29 2013 |
| RCMS Item 2014-491 | Implement Temporary Measures to Mitigate Ponding | |

Section 1R04: Equipment Alignment

Procedures

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|--|-----------------|
| CKL AL-120 | Auxiliary Feedwater Normal Lineup | 41 |
| CKL BG-120 | Chemical and Volume Control System Normal Valve Lineup | 41 |
| CKL BG-130 | Chemical and Volume Control System Switch and Breaker Lineup | 31A |
| CKL EF-120 | Essential Service Water Valve, Breaker, and Switch Lineup | 53A |
| CKL EJ-120 | Residual Heat Removal System Lineup | 44A |

Drawings

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|--|-----------------|
| M-12AL01 | Piping and Instrumentation Diagram Auxiliary Feedwater System, Sheet 1 | 28 |
| M-12BG03 | Piping and Instrumentation Diagram Chemical & Volume Control System P&ID | 48 |
| M-12BG05 | Piping and Instrumentation Diagram Chemical & Volume Control System P&ID | 23 |
| M-12EF01 | Piping and Instrumentation Diagram Essential Service Water P&ID | 29 |
| M-12EF02 | Piping and Instrumentation Diagram Essential Service Water P&ID | 40 |
| M-189-REJ01 | Piping and Instrumentation Diagram Residual Heat Removal System, Sheet 1 | 1 |

Section 1R05: Fire Protection

Procedures

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|-------------------------------|-----------------|
| AP 10-106 | Fire Preplans | 15 and 16 |
| AP 14A-003 | Scaffold Construction and Use | 23 |

Drawings

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|----------------------|-----------------|
| E-1F9905 | Fire Hazard Analysis | 4 |

Miscellaneous

| <u>Number</u> | <u>Title</u> | <u>Date</u> |
|---------------|--|----------------|
| 2015-070 | Transient Combustible Materials Permit, Construction of Water Hammer Tower – Class A Combustibles in CCZ | April 21, 2015 |
| 2015-071 | Transient Combustible Materials Permit, Construction of Water Hammer Tower – Class A Combustibles in CCZ Scaffolding Material (15-S7214, 15-S7213, 15-S7212, 15-S7211, 15-S7210, 15-S7209, 15-S7208, 15-S7207, 15-S7206) | April 21, 2015 |
| 2015-369 | Transient Ignition Source Permit [3.2.2], Cutting, Grinding, and Welding | July 7, 2015 |

Section 1R06: Flood Protection Measures

Procedures and Forms

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|-----------------------------|-----------------|
| AI 14-001 | Confined Space Entry | 15A |
| AIF 14-001-01 | Confined Space Entry Permit | 14 |

Condition Reports

97844 98455

Section 1R07: Heat Sink Performance

Procedures and Forms

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|----------------------------------|-----------------|
| APF 22C-008 | Qualitative Risk Screening | 2 |
| STS MT-073 | SGK04B Heat Exchanger Inspection | 3B |

Condition Reports

99545 99552

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Procedures

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|-----------------------|-----------------|
| AP 21-001 | Conduct of Operations | 73 |
| OFN RJ-023 | NPIS Malfunctions | 24 |

Exam Scenarios

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|--------------------------------------|-----------------|
| LR5007004 | Requal Simulator Exam Scenario 70-04 | 3 |
| LR5007015 | Requal Simulator Exam Scenario 70-15 | 0 |

Condition Reports

99119

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|---|-----------------|
| AP 10-102 | Control of Combustible Materials | 19 |
| AP 10-103 | Fire Protection Impairment Control | 29 |
| AP 10-104 | Breach Authorization | 34 |
| AP 10-106 | Fire Preplans | 15 |
| AP 22C-003 | On-Line Nuclear Safety and Generation Risk Assessment | 21 |

Condition Reports

99545 99717 99718 99724

Drawings

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|----------------------|-----------------|
| E-1F9905 | Fire Hazard Analysis | 4 |

Miscellaneous

| <u>Number</u> | <u>Title</u> | <u>Date</u> |
|---------------|--|-----------------|
| 15-0312 | Control Room Risk Assessment Log/Work Schedule; Risk Assessment Dates – September 14, 2015, through September 21, 2015 | August 31, 2015 |

Section 1R15: Operability Determinations and Functionality Assessments

Procedures and Forms

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|--|-----------------|
| AP 06-004 | Equipment Important to Emergency Response | 1 |
| AP 10-104 | Breach Authorization | 34 |
| EPF 06-023-01 | Emergency Response Facility Functionality Evaluation | 2 |
| EPP 06-023 | Emergency Response Facility Functionality | 2 |
| STS MT-019 | 125 VDC Class 1E Quarterly Battery Inspection | 21 |

Condition Reports

98319 98371 98372 98388 98407
98463 98481 98756 98757 98758

| | | | | |
|-------|-------|-------|-------|-------|
| 98760 | 98761 | 98877 | 99033 | 99034 |
| 99097 | 99334 | 99360 | 99409 | 99502 |
| 99503 | 99525 | | | |

Miscellaneous

| <u>Number</u> | <u>Title</u> | <u>Date</u> |
|---------------|--|------------------|
| 2015-467 | Breach Authorization Permit, Door 36043 Strike not Releasing. Door Opened to Permit Ingress/Egress | August 28, 2015 |
| E-050A-00011 | Lucent Technologies Lineage 2000 Round Cell Battery | April 16, 2014 |
| OTSC 15-0055 | Weekly Inspection of 125 VDC Lead-Calcium Batteries | August 31, 2015 |
| PIR 973174 | Performance Improvement Request | October 13, 1997 |

Work Orders

12-359873-000 15-404460-000

Section 1R18: Plant Modifications

Procedures

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|-----------------------|-----------------|
| ALR 00-61A | Process Rad Hi Hi | 21 |
| ALR 00-061B | Process Rad Hi | 22 |
| AP 21-001 | Conduct of Operations | 72 |

Condition Reports

| | | | | |
|-------|-------|-------|-------|-------|
| 96542 | 97567 | 98629 | 98631 | 99192 |
| 99193 | 99197 | 99198 | | |

Drawings

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|--|-----------------|
| M-1G022 | Equipment Locations Reactor & Auxiliary Buildings Plan Ground Floor Elevation 2000-0 | 17 |
| M-1G023 | Equipment Locations Reactor & Auxiliary BLDG. Plan Elevation 2026 Feet 0 Inches | 9 |

Drawings

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|--|-----------------|
| M-1G025 | Equipment Locations Reactor & Auxiliary Buildings Plan Elevation 2068 Feet 8 Inches | 8 |

Miscellaneous

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|------------------|-----------------------|-----------------|
| TMO 15-020-SP-00 | GTRE0031 and GTRE0032 | 0 |
| TMO 15-020-SP-01 | GTRE0031 and GTRE0032 | 1 |

Section 1R19: Post-Maintenance Testing

Procedures

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|--|-----------------|
| STN NB-001A | A Train Breaker Operability and Emergency Core Cooling System Pump Recirc | 8 |
| STS BG-100A | Centrifugal Charging System A Train Inservice Pump Test | 45 |
| STS BG-100B | Centrifugal Charging System B Train Inservice Pump Test | 50 |
| STS EG-100B | Component Cooling Water Pumps B/D Inservice Pump Test | 26 |
| STN EM-201 | A Safety Injection System Valve Test | 10 |

Condition Reports

99349

Section 1R22: Surveillance Testing

Procedures

| <u>Number</u> | <u>Title</u> | <u>Revision</u> |
|---------------|--|-----------------|
| STS BB-006 | RCS Water Inventory Balance Using the NPIS Computer | 14 |
| STS CH-033 | Primary to Secondary Leakage Determination | 3A |
| STS EF-100A | ESW System Inservice Pump A & ESW A Check Valve Test | 43A |
| STS EN-100B | Containment Spray Pump B Inservice Pump Test | 28 |
| STS KJ-005A | Manual/Auto Start, Sync & Loading of EDG NE01 | 63 |
| SYS KJ-121 | Diesel Generator NE01 and NE02 Lineup for Automatic Operation | 50C |

Condition Reports

97936

Work Orders

14-394532-000

Section 40A1: Performance Indicator Verification

Miscellaneous

Number and Title

Revision or Date

Alert Notification System Reliability Data

July 2014 to June 2015

NEI 99-02, Regulatory Assessment Performance Indicator Guideline

7

WCNOC-163, Mitigating System Performance Index (MSPI) Basis Document

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