



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511

July 25, 2022

Mr. Cleve Reasoner,  
Chief Executive Officer and  
Chief Nuclear Officer  
Wolf Creek Nuclear Operating Corporation  
P.O. Box 411  
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION – INTEGRATED INSPECTION REPORT  
05000482/2022002

Dear Mr. Reasoner:

On June 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Wolf Creek Generating Station. On July 7, 2022, the NRC inspectors discussed the results of this inspection with Mr. Jaime McCoy, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

Two findings of very low safety significance (Green) are documented in this report. Both of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations consistent with section 2.3.2 of the Enforcement Policy.

A licensee-identified violation which was determined to be of very low safety significance is documented in this report. We are treating this violation as a non-cited violation consistent with section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, 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; and the NRC Resident Inspector at 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 U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC Resident Inspector at Wolf Creek Generating Station.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in blue ink, appearing to read "Gregory E. Werner".

Signed by Werner, Gregory  
on 07/25/22

Gregory E. Werner, Chief  
Projects Branch B  
Division of Operating Reactor Safety

Docket No. 05000482  
License No. NPF-42

Enclosure:  
As stated

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WOLF CREEK GENERATING STATION – INTEGRATED INSPECTION  
REPORT 05000482/2022002

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**U.S. NUCLEAR REGULATORY COMMISSION**  
**Inspection Report**

Docket Number: 05000482

License Number: NPF-42

Report Number: 05000482/2022002

Enterprise Identifier: I-2022-002-0002

Licensee: Wolf Creek Nuclear Operating Corporation

Facility: Wolf Creek Generating Station

Location: Burlington, KS

Inspection Dates: April 1, 2022 to June 30, 2022

Inspectors: J. Braisted, Senior Reactor Inspector  
G. George, Senior Reactor Inspector  
C. Henderson, Senior Resident Inspector  
J. Melfi, Project Engineer  
W. Tejada, Physical Security Inspector  
F. Thomas, Reactor Inspector  
J. Vera, Senior Resident Inspector

Approved By: Gregory E. Werner, Chief  
Projects Branch B  
Division of Operating Reactor Safety

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Wolf Creek Generating Station, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. A licensee-identified non-cited violation is documented in report section 71152A.

### List of Findings and Violations

Failure to Scope the Class 1E Air Conditioning Cross Train Cooling System Safety Function into the Maintenance Rule Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000482/2022002-01 Open/Closed	[H.13] - Consistent Process	71111.12
The inspectors identified a Green finding and associated non-cited violation of 10 CFR 50.65(b)(1) for the licensee's failure to monitor safety-related structures, systems, and components that are relied upon to remain functional during and following design basis events to ensure integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the guidelines. Specifically, the licensee failed to scope the class 1E air conditioning cross train cooling system a safety-related system relied upon to remain functional during and following design basis events in the scope of the maintenance rule program specified in 10 CFR 50.65(a)(1).			

Failure to Maintain Configuration Control of the Emergency Core Cooling System			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000482/2022002-02 Open/Closed	None (NPP)	71111.15
The inspectors identified a Green finding and associated non-cited violation of Technical Specification 5.4.1.a, for the licensee's failure to maintain procedure SYS BG-201, "Shifting Charging Pump," revision 74, to maintain configuration control of the emergency core cooling system. Specifically, the licensee failed to maintain one of the two centrifugal charging pump discharge header inlet isolation valves (BG8483A and BG8483C) always closed to ensure proper operation of the centrifugal charging pump minimum flow valves during design basis accident conditions with the worst-case single failure.			

### Additional Tracking Items

None.

## PLANT STATUS

Wolf Creek Generating Station began the inspection period at full power. On April 29, 2022, the licensee reduced power to 58 percent at the request of the transmission system operator to facilitate unplanned outage of the 345 kV Rose Hill Line and was returned to full power on May 1, 2022. On June 16, 2022, the licensee reduced power to 85 percent for scheduled surveillance testing of the main turbine control valves and was returned to full power on the same day. On three occasions during the quarter the licensee reduced power to 70 percent for flexible power operations (based on daily market demand) and returned to full power after each occasion.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, appendix D, "Plant Status," observed risk significant activities, and completed onsite portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## REACTOR SAFETY

### 71111.04 - Equipment Alignment

#### Partial Walkdown Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) train B safety injection system due to loop 4 hot leg primary isolation check valve leakage on April 12, 2022
- (2) train B charging system following a technical specification equipment outage on April 13, 2022
- (3) train B emergency core cooling system cold leg recirculation on May 14, 2022

### 71111.05 - Fire Protection

#### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) turbine building, fire area T-2, on April 30, 2022
- (2) volume control tank room, fire area A-8, on May 2, 2022
- (3) lower cable spreading room, fire area C-21, on May 4, 2022

- (4) hourly fire watch for fire areas C-9, C-12, C-18, C-21, and C-24 when starting centrifugal charging pump (CCP) B on May 11, 2022
- (5) hourly fire watch for fire areas C-10, C-11, C-17, C-22, C-23, C-30, and C-33 when starting CCP A on May 11, 2022

Fire Brigade Drill Performance Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the onsite fire brigade training and performance during an announced fire drill on April 22, 2022.

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 03.01) (2 Samples)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) train B essential service water manhole inspections on April 25, 2022
- (2) auxiliary building level 2000 on May 3, 2022

71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during the following activities:
  - control rod operability verification and parking on April 14, 2022
  - flexible power operations on April 27, 2022
  - return to full power following unplanned 345 kV Rose Hill Line outage on May 1, 2022

Licensed Operator Regualification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) Inspectors observed and evaluated simulator training activities on April 4, 2022.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (2 Samples)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components remain capable of performing their intended function:

- (1) trains A and B class 1E air conditioning system cross train system not scoped into maintenance rule on June 9, 2022
- (2) trains A and B charging system maintenance effectiveness on June 14, 2022

### 71111.13 - Maintenance Risk Assessments and Emergent Work Control

#### Risk Assessment and Management Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) emergent work activities for main turbine control valve 1 oscillation troubleshooting and repair on April 11, 2022
- (2) train B charging system planned technical specification equipment outage on April 11, 2022
- (3) turbine control valve oscillation operational decision-making issue on May 17, 2022
- (4) train A essential service water and emergency diesel generator planned technical specification equipment outage on May 17, 2022
- (5) emergency diesel generator A voltage regulatory troubleshooting and technical specification equipment outage extension on May 19, 2022

### 71111.15 - Operability Determinations and Functionality Assessments

#### Operability Determination or Functionality Assessment (IP Section 03.01) (3 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) train B residual heat removal (RHR) pump dry and wet boron leakage from the mechanical seal operability determination on May 8, 2022
- (2) trains A and B charging system cross-tied during charging pump discharge header alignment operability determination on May 25, 2022
- (3) emergency diesel generator A excitation circuit operability determination on May 25, 2022

### 71111.17T - Evaluations of Changes, Tests, and Experiments

#### Sample Selection (IP Section 02.01) (24 Samples)

The inspectors reviewed the following evaluations, screenings, and/or applicability determinations for 10 CFR 50.59 from April 11–19, 2022.

- (1) CP 20161, Removal of Interlock to Motor Driven Feedwater Pump Motor Start (50.59 Screen)
- (2) CP 20165, Diesel Fire Pump Instrument Control Panel Equivalent Replacement (Applicability Determination)
- (3) CP 20227, Remove Internals from Check Valve KAV0002 (50.59 Screen)
- (4) CP 20255, PFSSD [post-fire safe shutdown] Modification to Address IN 92-18 for Multiple MOVs [motor operated valves] (50.59 Screen)
- (5) CP 20380, PFSSD [post-fire safe shutdown] Modification to Address IN 92-18 for Multiple MOVs [motor operated valves]-Refuel 25 (50.59 Screen)
- (6) CP 20431, ESW [essential service water] VLC [vertical loop chase] Sump Pump Automatic Function (50.59 Screen)



- (7) CP 20008, 7300 Controls Upgrade - Temporary Loop System (Applicability Determination)
- (8) CP 20021, ESF [engineered safety feature] XNB01 Transformer Replacement (50.59 Screen)
- (9) CP 20365, 345-120 Breaker Replacement (50.59 Screen)
- (10) CP 20393, Emergency Diesel Generator Supply Fan Motor Starters (50.59 Screen)
- (11) CP 12513, ESF [engineered safety feature] XNB02 Transformer Replacement (50.59 Screen)
- (12) CP 13908, Westinghouse RHR Pump Motor Refurbishment Upgrades (50.59 Screen)
- (13) CP 14853, SGK04A & B PMT [post maintenance testing]-Bitzer Compressor Replacement (Applicability Determination)
- (14) CP 15246, NG [Low Voltage System] Voltmeter Replacement (50.59 Screen)
- (15) CP 13324, 7300 Controls Upgrade (50.59 Evaluation)
- (16) EMG CS-02, revision 27, Loss of All AC Power Recovery with SI [safety injection] Required (50.59 Screen)
- (17) CP 20072, GTRE0059 & 60 Containment Cable Replacement (50.59 Screen)
- (18) CP 20312, E-1F9915 Impact for E-Plan [Emergency Plan] License Amendment 220 (Applicability Determination)
- (19) CP 20329, Evaluation of Time-Delay Setting for SGFP [steam generator feed pump] Vibration Alarms in Ovation (50.59 Screen)
- (20) CP 20347, RCS [reactor coolant system] Narrow Range RTD [resistance temperature device] Lead Resistance Imbalance (50.59 Screen)
- (21) CP 20550, System Description M-10BN Update (50.59 Evaluation)
- (22) EMG ES-33, revision 19, Post-SGTR [steam generator tube rupture] Cooldown Using Steam Dumps (50.59 Screen)
- (23) EMG ES-33, revision 20, Post-SGTR [steam generator tube rupture] Cooldown Using Steam Dumps (50.59 Screen)
- (24) EMG C-31, revision 30, SGTR [steam generator tube rupture] With Loss of Reactor Coolant - Subcooled Recovery Desired (50.59 Screen)

#### 71111.18 - Plant Modifications

##### Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) refueling water storage tank volumes and level set points permanent modification on June 9, 2022

#### 71111.19 - Post-Maintenance Testing

##### Post-Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post-maintenance testing activities to verify system operability and/or functionality:

- (1) train B charging pump auxiliary lube oil pump and motor replacement post-maintenance testing on April 6, 2022
- (2) train B charging pump seal area cleaning and breaker post-maintenance testing on April 6, 2022

- (3) emergency diesel generator A fuel oil transfer system restoration following maintenance activities on May 18, 2022
- (4) emergency diesel generator A voltage regulator on May 18, 2022
- (5) emergency diesel generator A jacket water, lube oil, and intercooler temperature control valve power pill replacement post-maintenance testing on May 18, 2022

#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance testing activities to verify system operability and/or functionality:

#### Surveillance Tests (other) (IP Section 03.01) (3 Samples)

- (1) train B emergency core cooling and common void monitoring and venting on April 12, 2022
- (2) train B component cooling water radwaste building return header isolation valve, EGHV0070B, stroke time inservice testing evaluation on April 19, 2022
- (3) train A charging pump inservice surveillance testing on June 14, 2022

#### Inservice Testing (IP Section 03.01) (1 Sample)

- (1) train B essential service water isolation to air compressor check valve EFV0076 on May 23, 2022

#### 71114.06 - Drill Evaluation

#### Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

The inspectors evaluated:

- (1) emergency preparedness drill involving an anticipated transient without a scram, faulted steam generator, and reactor coolant leak on April 20 and May 4, 2022.

#### Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

The inspectors evaluated:

- (1) emergency preparedness drill involving an anticipated transient without a scram, faulted steam generator, and reactor coolant leak on May 4, 2022

## **OTHER ACTIVITIES – BASELINE**

### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### MS07: High Pressure Injection Systems (IP Section 02.06) (1 Sample)

- (1) April 1, 2021 through March 31, 2022

#### MS10: Cooling Water Support Systems (IP Section 02.09) (1 Sample)

- (1) April 1 2021 through March 31, 2022

#### BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (1 Sample)

- (1) April 1, 2021 through March 31, 2022

#### BI02: RCS Leak Rate Sample (IP Section 02.11) (1 Sample)

- (1) April 1, 2021 through March 31, 2022

### 71152A - Annual Follow-up Problem Identification and Resolution

#### Annual Follow-up of Selected Issues (Section 03.03) (2 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) emergency preparedness drill SA-2022-01 development, control input, and crew performance on May 24, 2022.
- (2) auxiliary feedwater room missed hourly fire watches on June 14, 2022.

### 71152S - Semiannual Trend Problem Identification and Resolution

#### Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in the corrective action program equipment performance evaluations and clearance order error and planning issues that might be indicative of a more significant safety issue.

## INSPECTION RESULTS

Failure to Scope the Class 1E Air Conditioning Cross Train Cooling System Safety Function into the Maintenance Rule Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000482/2022002-01 Open/Closed	[H.13] - Consistent Process	71111.12
<p>The inspectors identified a Green finding and associated non-cited violation of 10 CFR 50.65(b)(1) for the licensee's failure to monitor safety-related structures, systems, and components that are relied upon to remain functional during and following design basis events to ensure integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the guidelines. Specifically, the licensee failed to scope the class 1E air conditioning cross train cooling system a safety-related system relied upon to remain functional during and following design basis events in the scope of the maintenance rule program specified in 10 CFR 50.65(a)(1).</p>			
<p><u>Description:</u> While performing reviews of the licensee's maintenance rule program associated with the DC distribution system (NK), the inspectors identified a safety-related function for the swing battery chargers, NK25 and NK26, which was not scoped into the maintenance rule program. Specifically, in November 2018, the licensee failed to scope the safety-related function associated with class 1E air conditioning cross train cooling system that was implemented by design change package 14269 and amendment 219, "Issue of Amendment: Addition of New Technical Specification 3.7.20, Class 1E Electrical Equipment Air Conditioning (A/C) System," dated September 11, 2018. The licensee assigned work order 16-414781-054 to perform a maintenance rule evaluation for the control building HVAC system function GK-01 and provide a suitable environment for class 1E electrical equipment during normal and accident conditions, which was not completed prior to the inspectors review of the maintenance rule program review for the NK system. Additionally, the inspectors identified four functional failures associated with the NK25 and concluded the availability, reliability, and capability of NK25 was impacted.</p> <p>The safety-related function of the class 1E air conditioning cross train cooling system was to provide cooling to both trains of class 1E electrical equipment (AC and DC) located on the 2016' and 2000' elevation during normal and accident conditions. With one class 1E electrical equipment air conditioning train inoperable, action must be initiated immediately to implement mitigating actions. The mitigating actions taken with one class 1E electrical equipment air condition train inoperable include enabling the halon interlock relay and starting the appropriate single train recirculating fans (including opening discharge dampers). Additionally, the NK25 and NK26 are placed into service and battery chargers NK21 and NK24 are secured within three hours. This is done to move heat load from the 2016' elevation down to the 2000' elevation.</p> <p>Therefore, the inspectors concluded the class 1E air conditioning cross train cooling system was a safety-related system that was relied upon to remain functional during and following design basis events to ensure the capability to shut down the reactor and maintain it in a safe shutdown condition and was required to be scoped into the maintenance rule program. Additionally, it was concluded the licensee failed to demonstrate effective control of</p>			

equipment performance or condition for equipment that should have been scoped into the maintenance rule program (e.g., the four functional failures of NK25). The inspectors informed the licensee, and they entered the concern into the corrective action program as condition reports 10012398 and 10012596.

Corrective Actions: The licensee scoped class 1E air conditioning cross train cooling system into the maintenance rule program under the GK and NK system functions, performed an extent of condition and identified three additional system modifications that were not scoped into the maintenance rule program, and changed the process for maintenance rule program scoping reviews for design changes. Additionally, the licensee determined NK system function for the class 1E air conditioning cross train cooling system was required to be transitioned to 10 CFR 50.65(a)(1).

Corrective Action References: Condition reports 10012398 and 10012596

Performance Assessment:

Performance Deficiency: The licensee's failure to scope the safety-related function associated with the DC distribution system swing battery chargers NK25 and NK26 for implementation of the class 1E air conditioning cross train cooling system was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was 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. Specifically, the cornerstone objectives were adversely affected because effective control of equipment performance or condition for equipment that should have been scoped was not demonstrated (e.g., the safety-related swing battery charger NK25).

Significance: The inspectors assessed the significance of the finding using appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding was determined to be of very low safety significance (Green) because it (1) was not a deficiency affecting the design or qualification of a mitigating system, (2) does not represent a loss of the probability risk analysis (PRA) function of a single train technical specification system for greater than its allowed outage time, (3) does not represent a loss of PRA function of one train of a multi-train technical specification system for greater than its allowed outage time, (4) does not represent a loss of the PRA function of two separate technical specification systems for greater than 24 hours, (5) does not represent a loss of PRA system and/or function as defined by the plant risk information e-book (PRIB) or the licensee's PRA for greater than 24 hours, and (6) does not result in the loss of a high safety-significant, nontechnical specification train for greater than 3 days.

Cross-Cutting Aspect: H.13 - Consistent Process: Individuals use a consistent, systematic approach to make decisions. Risk insights are incorporated as appropriate. Specifically, the licensee failed to have a consistent process for ensuring new system modifications were appropriately reviewed to ensure they were incorporated, if required, into the maintenance rule program.

Enforcement:

Violation: Title 10 CFR 50.65(b)(1), states, in part, that holders of an operating license shall include within the scope of the monitoring program specified in 10 CFR 50.65(a)(1) safety-related structures, systems, or components (SSCs) that are relied upon to remain functional during and following design basis events to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, and the capability to prevent or mitigate the consequences of an accident that could result in potential offsite exposure comparable to the 10 CFR Part 100 guidelines.

Contrary to the above, the licensee failed to include within the scope of the monitoring program specified in 10 CFR 50.65(a)(1), a safety-related system relied upon to remain functional during and following design basis events to shut down the reactor and maintain the reactor in a safe shutdown condition. Specifically, from November 2018 to May 2022, the safety-related class 1E air conditioning cross train cooling systems that maintains AC and DC distribution components within required temperatures for safe shutdown were not being monitored to ensure maintenance effectiveness.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with section 2.3.2 of the Enforcement Policy.

Failure to Maintain Configuration Control of the Emergency Core Cooling System

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000482/2022002-02 Open/Closed	None (NPP)	71111.15

The inspectors identified a Green finding and associated non-cited violation of Technical Specification 5.4.1.a, for the licensee's failure to maintain procedure SYS BG-201, "Shifting Charging Pump," revision 74, to maintain configuration control of the emergency core cooling system. Specifically, the licensee failed to maintain one of the two CCP discharge header inlet isolation valves (BG8483A and BG8483C) always closed to ensure proper operation of the CCP minimum flow valves during design basis accident conditions with the worst-case single failure.

Description: The inspectors reviewed: procedure SYS BG-201, "Shifting Charging Pump," revision 74, Vendor Letter SNP-4943, "Charging Pump Miniflow," dated October 25, 1982, the current licensing and design basis for the safety-related charging system and performed walkdowns of the system. From this review, the inspectors identified the following:

- Procedure SYS BG-201: The inspectors identified section 6.7, "Shifting Charging Pump Discharge Header Alignment," aligns both safety-related CCPs to the charging discharge by opening one of the two discharge header inlet isolation valves (BG8483A and BG8483C) prior to closing one of the valves to complete the shifting of a CCP to the discharge header. The configuration with both BG8483A and GB8483C being open during shifting of CCPs was approximately 30 minutes prior to either BG8483A or BG8483C being locked closed. The basis for allowing both valves to be open at the same time during the shifting of CCPs discharge header alignment was provided by Technical Specification Interpretation 009-85, revision 2, dated November 17, 1988. Specifically, Technical Specification Interpretation 009-85 stated:

In Modes 1, 2, and 3, opening BG8483A and C violates additional guidelines for safety injection through the boron injection tank. Maintaining filtered seal injection to the reactor coolant pumps and a flow path simultaneously is the primary concern. In all Modes, operation of the CCP's in parallel for this brief evolution does not place the plant in a degraded condition and is in fact the most conservative way to comply with the present technical specification.

- System Walkdown: During the system walkdown, the inspectors identified a sign above both BG8483A and BG8483C that one of the valves shall always be locked closed in accordance with vendor letter SNP-4943.
- Vendor Letter SNP-4943: This letter states, in part, for a design basis accident with worst-case single failure:

If valve BG8483A and C are both open, then the existing instrumentation and logic are of themselves inadequate for opening and closing the CCPs minimum flow valves when required. Since the flow below which the minimum flow valve must be opened is greater than the flow above which the minimum flow valve must be closed, the existing flow switch was inadequate. Additional logic and instrumentation would have to be added. Two additional flow switches having 140 gpm setpoints would have to be added in parallel with the existing flow switches. One or two possible pressure switches would have to be installed on the discharge of the each CCP to determine if the pump was running. Logic would also have to be provided to close the A minimum flow valve above 140 gpm if limit switch signals indicated that boron injection tank inlet valve BGHV8803B was open while CCP B was not operating. This closure logic would also have to block the opening logic (greater than 243.6 gpm). The closure setpoint of 280 gpm would also still have to be accommodated. Similar logic would have to be provided for the train B minimum flow valve.

Additionally, the vendor stated the following recommendations:

In summary, it is recommended that either BG8483A or BG8483C be locked closed at all times as shown on the current issue of the vendor engineering flow diagrams. It is also recommended that this requirement be reflected in the Technical Specifications. The setpoints in the precautions, limitations, and setpoint document will be consistent with the locked closed valve arrangement. Should check valves be installed at some future time and BG8483A and C are opened, then the setpoints are still valid.

From the inspectors walkdown of the charging system and review of drawing M-12BG03, "Piping and Instrumentation Diagram Chemical and Volume Control System," revision 51, no additional instrumentation or check valves were installed, as discussed in vendor letter SNP-4943.

Based on the above information, the inspectors concluded the licensee failed to maintain configuration control of the emergency core cooling system when performing procedure SYS BG-201, section 6.7. Specifically, the licensee failed to maintain one of the two CCP discharge header inlet isolation valves (BG8483A and BG8483C) closed at all times to ensure proper operation of the CCP minimum flow valve during design basis accident conditions with the worst-case single failure. The licensee initiated condition report 10013797.

Corrective Actions: The licensee established a compensatory measure using a dedicated individual to close either BG8483A or BG8483C when performing section 6.7 of procedure SYS BG-201 during a design basis accident that requires safety injection, until procedure SYS BG-201 has been updated.

Corrective Action References: Condition report 10013797

Performance Assessment:

Performance Deficiency: The licensee's failure to maintain emergency core cooling system configuration to ensure proper operation of the CCP minimum flow valve during design basis accidents was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Configuration Control 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. Specifically, with both CCP A and B discharge header inlet isolation valves (BG8483A and BG8483C) open does not maintain the required emergency core cooling system configuration to ensure proper operation of the CCP minimum flow valves to prevent pump damage during design basis accidents conditions with the worst-case single failure for the charging system.

Significance: The inspectors assessed the significance of the finding using appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding was determined to be of very low safety significance (Green) because it (1) was not a deficiency affecting the design or qualification of a mitigating system, (2) does not represent a loss of the probability risk analysis (PRA) function of a single train technical specification system for greater than its allowed outage time, (3) does not represent a loss of PRA function of one train of a multi-train technical specification system for greater than its allowed outage time, (4) does not represent a loss of the PRA function of two separate technical specification systems for greater than 24 hours, (5) does not represent a loss of PRA system and/or function as defined by the plant risk information e-book (PRIB) or the licensee's PRA for greater than 24 hours, and (6) does not result in the loss of a high safety-significant, nontechnical specification train for greater than 3 days.

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance. Specifically, the basis for allowing both BG8483A and C to be open during the performance of procedure SYS BG-201, section 6.7, was established in November 1988 inconsistent with Technical Specification Interpretation 009-85, revision 2.

Enforcement:



Violation: Technical Specification 5.4.1.a, requires, in part, that written procedures be established, implemented, and maintained covering applicable procedures recommended in appendix A to Regulatory Guide 1.33, "Quality Assurance Program Requirements," revision 2, dated February 1978. Regulatory Guide 1.33, appendix A, section 3.d, requires procedures for startup, operation, and shutdown of safety-related pressurized water reactor emergency core cooling system. The licensee established procedure SYS BG-201, "Shifting Charging Pumps," revision 74, section 6.7, to provide instructions for shifting charging pump discharge header alignment without operation of the emergency core cooling system CCP.

Contrary to the above, the licensee failed to maintain procedures for operation of the safety-related pressurized water reactor emergency core cooling system. Specifically, from November 1988 to May 2022, procedure SYS BG-201 failed to maintain configuration control of the emergency core cooling system CCP discharge header inlet isolation valves to ensure proper operation of the CCP minimum flow valve during design basis accident conditions with worst-case single failure.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with section 2.3.2 of the Enforcement Policy.

Licensee-Identified Non-Cited Violation	71152A
This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with section 2.3.2 of the Enforcement Policy.	
<p>Violation: Technical Specification 5.4.1.d requires that written procedures shall be established, implemented, and maintained covering fire protection program implementation. The licensee established procedure AP 10-104, "Breach Authorization," revision 39, for impairments of the fire protection system and instructions to maintain required barriers for fire protection. Procedure AP 10-104, step 6.2.5.1, states in part, with a functional fire detectors on at least one side of the inoperable/nonfunctional fire barrier and establish an hourly fire watch patrol.</p> <p>Contrary to the above, the licensee failed to implement the fire protection program procedure AP 10-104, step 6.2.5.1. Specifically, from January 1, 2021, to March 9, 2022, on multiple occasions the licensee failed to establish an hourly fire watch patrol for an inoperable/nonfunctional fire barrier for the auxiliary feedwater vestibule (room 1329) fire door 13291 as identified on breach authorization permit BAP-21-0465.</p>	
<p>Significance/Severity: Green. The inspectors assessed the significance of the finding using appendix F, "Fire Protection and Post - Fire Safe Shutdown SDP." The inspectors assigned the finding a fire category 1.4.1 using Inspection Manual Chapter 0609, appendix F, attachment 1, "Fire Protection Significance Determination Process Worksheet," dated May 2, 2018, because the finding involved fire prevention and administrative controls. The inspectors determined that the finding had very low safety significance (Green) because the finding: (1) did not increase the likelihood of a fire, delay detection of a fire, or resulted in a more significant fire than previously analyzed such that credited safe shutdown strategy could be adversely impacted; and (2) the degraded fire confinement element continued to provide adequate fire endurance to prevent fire propagation through the fire confinement element given the combustible loading and location of equipment important to safe shutdown in the fire area of concern. Specifically, there was no combustible material or safety equipment that constituted a fire target.</p>	

Corrective Action References: Condition report 10013103
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Observation: Semi-Annual Trend Review	71152S
<p>The inspectors reviewed the licensee's corrective action program, performance indicators, system health reports, and other documentation available to help identify performance trends that might indicate the existence of a more significant safety issue. The inspectors verified that the licensee was taking corrective actions to address the identified adverse trends. The inspectors did not review any cross-cutting themes because none existed at the site.</p> <p>To verify the licensee was taking corrective actions to address identified adverse trends that might indicate the existence of a more significant safety issue, the inspectors and the licensee noted an apparent negative trend in the corrective action program associated with equipment performance evaluations (EPE). Specifically, the inspectors identified concerns with risk recognition when addressing equipment deficiencies associated with low-risk component issues screening out of the process when they are used in higher risk systems. Additionally, the inspectors and the licensee identified EPEs requiring re-performance due to weakness in the evaluation. In response, the licensee initiated condition reports 10012377, 10012988, and 10013471, and implemented the following corrective actions:</p> <ol style="list-style-type: none"> <li>1. Condition report 10012377 corrective actions included the following items: <ol style="list-style-type: none"> <li>a. Revised the EPE guidance to provide more detail on how to complete an EPE. Specifically, the licensee implemented a new standalone EPE form with supporting engineering desktop guidance to complete EPEs.</li> <li>b. Prior to closing an EPE within the corrective action program a maintenance rule system matter expert review was required prior to maintenance rule closure.</li> </ol> </li> <li>2. Condition report 10013471 corrective action item included vendor training to address training request 2022-0027-1 for selected licensee personnel to improve the performance associated with EPEs. Additionally, the training included organizational and programmatic evaluations and their use in improving equipment reliability performance.</li> <li>3. Condition report 10012988 corrective action was to review the proposed changes being implemented by condition report 10012377 and create additional actions as required to address identified EPE performance gaps.</li> </ol>	

Observation: Semi-Annual Trend Review	71152S
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order errors. Condition report 10011797 was written on January 24, 2022, to identify a possible trend in low level clearance order errors. The initial trend analysis concluded there was a low-level trend, and the condition report implemented some actions to address the trend. During the week of February 21, 2022, three additional clearance order errors were discovered during clearance order implementation or after placement in the field. The licensee initiated condition report 10013136 and performed a common cause evaluation. The clearance order errors included:

- A new work order was added to a clearance order. This work order required a fuse to be tagged. However, the preparer did not recognize this requirement and neither did the tagging authority. The verification by two clearance order peers failed to identify the error made by the new preparer.
- A preparer failed to validate that the components on a copied clearance order matched the components listed in the work order.
- A clearance order was copied which correctly tagged supply fan and damper actuators but did not prevent the emergency diesel generator from starting. The copied clearance order had included the note to prevent the emergency diesel generator from starting, but it was removed. This error was found during the tagging authority review.
- An operator instructed an electrician to sign electronically as the Tag First Verifier for placement. The electrical technician signed for lifted leads and operations department personnel signed the independent verification. When tagging lifted leads per procedure AP 21E-001, "Clearance Orders" revision 43C, the operations department is responsible for both the placement and verification of the Do Not Operate tags. The error was not noticed until the clearance was verified as hung.
- A planner failed to notify the clearance order group when a revision to the work order scope was completed as required by procedure, so the change in work scope bypassed the clearance order group. The workers performing the maintenance were covered by an existing clearance order that they had control of, but which did not specifically identify the additional work scope (isolation boundary was the same).
- After planning a revision for a work order the electrical master did not send the revision to the clearance order group in accordance with procedure AP 21E-001.
- A clearance order was created to work on the component cooling water side of a RHR pump seal cooler by copying a previous clearance order. The valve labeling and mechanical prints and available information were not reviewed thoroughly enough to identify that a valve was on the RHR pump side, and not the CCW side. Neither the preparer nor tagging authority recognized this error. This issue was not identified until the clearance order was in the process of being hung, but prior to be turned over to maintenance. The licensee recognized that a similar error occurred in 2020.
- A work order scope was changed after initial preparation, and not caught by the tagging authority. The planner failed to notify the clearance order group of the change in work scope.

The licensee initiated the following corrective actions:

- The clearance order group supervision has provided coaching, performed a stand down, and is providing additional oversight to the newer/less proficient preparers. The maintenance group involved in signing for a lifted lead inappropriately have also been coached. The above events were also evaluated with regards to nuclear safety culture. All the above events were identified at a low level and no nuclear safety culture theme was identified.
- Peer checks of clearance orders prepared by new preparers have now been instituted. When a new preparer works on a clearance order that is different from what they have done before or is outside the scope of what they understand, they are expected to get a peer check from a more experienced preparer prior to signing off the clearance order.

The inspectors noted the trends in clearance order errors so far have been identified at a low level. The inspectors also observed that such errors could continue if the corrective actions implemented are not effective. Additionally, the inspectors noted the clearance order error low level trend has an impact on cross-cutting area H.5, "Work Management: The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities." Specifically, work is effectively planned and executed by incorporating risk insights, job site conditions, and the need for coordination with different groups or job activities; work activities are coordinated to address conflicting or changing priorities across the whole spectrum of activities contributing to nuclear safety; and leaders consider the impact of changes to the work scope and the need to keep personnel apprised of work status. No findings or violations were identified in the review of this trend.

## **EXIT MEETINGS AND DEBRIEFS**

The inspectors verified no proprietary information was retained or documented in this report.

- On April 19, 2022, the inspectors presented the 10 CFR 50.59 inspection results to Mr. J. McCoy, Site Vice President, and other members of the licensee staff.
- On July 7, 2022, the inspectors presented the integrated inspection results to Mr. J. McCoy, Site Vice President, and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04	Calculations	BN-M-013	Time Available for Injection, ECCS, and Containment Spray Pump Transfer and Evaluation of Air Entrainment at Empty Alarm	3
	Corrective Action Documents Resulting from Inspection	Condition Report	10013562	
	Drawings	M-12BB01	Piping and Instrumentation Diagram Reactor Coolant System	43
		M-12BG03	Piping and Instrumentation Diagram Chemical and Volume Control System	51
		M-12BN01	Piping and Instrumentation Diagram Borated Refueling Water Storage System	20
		M-12EJ01	Piping and Instrumentation Diagram Residual Heat Removal System	57
		M-12EM01	Piping and Instrumentation Diagram High Pressure Coolant Injection System	46
		M-12EM02	Piping and Instrumentation Diagram High Pressure Coolant Injection System	25
		M-12EP01	Piping and Instrumentation Diagram Accumulator Safety Injection	17
	Procedures	BD-EMG ES-12	Transfer to Cold Leg Recirculation	17A
		CKL BG-120	Chemical and Volume Control System Valve Lineup	42
		CKL EM-120	Safety Injection System Lineup	33
		EMG ES-12	Transfer to Cold Leg Recirculation	24
		STS CR-001	Shift Log for Modes 1, 2, and 3	113
		SYS BG-201	Shifting Charging Pumps	73, 74
71111.05	Calculations	XX-E-013	Post-Fire Safe Shutdown Analysis	4
	Corrective Action Documents	Condition Reports	2008-5211, 2008-5341, 25002	
	Miscellaneous	Document Revision Request	SYS BG-201 Shifting Charging Pumps	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	08-1850		
		E-1F9910	Post-Fire Safe Shutdown Area Analysis	17
		OTSC 08-0134	SYS BG-201 Shifting Charging Pumps	0
		OFN BG-045	Gas Binding of CCPs or SI Pumps	6A
		OFN KC-016	Fire Response	51
		SYS BG-201	Shifting Charging Pumps	74
71111.06	Calculations	FL-03	Flooding of Individual Auxiliary Building Rooms	2
	Corrective Action Documents Resulting from Inspection	Condition Reports	10013639, 10014670	
	Drawings	M-12LF02	Piping and Instrumentation Diagram Auxiliary Building Floor and Equipment Drain System	3
		M-1G022	Equipment Locations Reactor and Auxiliary Buildings Plan Ground Floor El. 2000'-0"	18
	Miscellaneous	WCRE-35	Boundary Matrix	9
	Procedures	ALR 00-008B	Serv WTR Press HI LO	18
		ALR 00-055A	ESW PMP A Press LO	11A
		ALR 00-055B	ESW PMP B Press LO	12A
		ALR 00-094F	Misc Sumps Lev Hi	5
71111.11Q	Procedures	STN SF-001	Control Rod Parking	21A
		STS SF-001	Control and Shutdown Rod Operability Verification	30
71111.12	Calculations	GK-M-016	Wolf Creek Control Building Loss of Class 1E A/C GOTHIC Room Heat Up Analysis with Installed Crosstie Fans and Louvers	3
	Corrective Action Documents	Condition Reports	131256, 136749, 140976, 140977, 10010697, 10014069, 10014081, 10014082	
	Corrective Action Documents Resulting from Inspection	Condition Reports	10012398, 10012596, 10015063	
	Drawings	M-12BG03	Piping and Instrumentation Diagram Chemical and Volume Control System	51
		M-12BG05	Piping and Instrumentation Diagram Chemical and Volume	27

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Control System	
		M-12GK03	Piping and Instrumentation Diagram Control Building HVAC	21
		M-12GK05	Piping and Instrumentation Diagram Control Building	2
		M-618.4-00010	Wolf Creek CGK06A Fan Supply Duct General Assembly	0
	Miscellaneous	M-618.4-00007	Greenheck Bubble Tight, Fire and Isolation Dampers	2
		WCRE-38	Surveillance Frequency Control Program Surveillance Test Interval List	0
	Procedures	ALR 00-042B	VCT Lev HILO	14
		ALR 00-058A	VCT LVL HI Boron Dilution	8
		ALR 00-079D	Delta Flux Out of Band, Rev. 10 (P) OFN BG-009, Emergency Boration	28
		ALR 00-081D	Rob Bank Lo Limit	9
		ALR 00-082C	Rob Bank LoLo Limit	11
		OFN BG-009	Emergency Boration	28
		STN GK-001A	Class 1E Recirculation System Train "A" Functional Test	1
	Work Orders	WO	18-445355-000, 19-449796-000, 20-461689-000, 20-463001-000, 20-463003-000, 21-474330-000	
71111.13	Corrective Action Documents	Condition Reports	10013460, 10013949, 10013950, 10013953, 10014472, 10014489, 10014504	
	Corrective Action Documents Resulting from Inspection	Condition Reports	10013396, 10014444, 10014451	
	Drawings	M-12BG03	Piping and Instrumentation Diagram Chemical and Volume Control System	51
		M-12EM02	Piping and Instrumentation Diagram High Pressure Coolant Injection System	25
		M-12KC02	Piping and Instrumentation Diagram Fire Protection System	26
	Miscellaneous	ODMI 2022-02	Turbine Control Valve Oscillation at 70% Power	1
	Procedures	AI 22C-013	Protected Equipment Program	23B
		AP 10-103	Fire Protection Impairment Control	37
		AP 21-200	Operational Decision Making	10B
		AP 22C-003	On-Line Nuclear Safety and Generation Risk Assessment	25

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		CKL EM-120	Safety Injection System Lineup Checklists	33
		EMG FR-C1	Response to Inadequate Core Cooling	21
		EMG FR-C2	Response to Degraded Core Cooling	19
		OFN AC-002	Main Turbine High Vibration	28
	Work Orders	WO	22-478763-000, 22-479602-000, 22-479602-001, 22-479602-002, 22-479602-003, 22-479602-004, 22-479602-005	
71111.15	Corrective Action Documents	Condition Reports	103970, 10014020, 10014022, 10014472, 10014489, 10014504, 1003435,	
	Corrective Action Documents Resulting from Inspection	Condition Reports	10013610, 10013797	
	Drawings	M-12BG03	Piping and Instrumentation Diagram Chemical and Volume Control System	51
	Miscellaneous	M-018-00825-W02	Environmental Qualification of Class 1E Equipment	1
		WCRE-034	Fourth 10-Year Interval Inservice Testing Basis Document	12
	Procedures	AI 16F-001	Evaluation of Boric Acid Leakage	11A
		AI 16F-002	Boric Acid Leakage Management	12
		AP 16F-001	Boric Acid Corrosion Control Program	10A
		AP 25C-001	WCGS Leak Reduction of Primary Coolant Sources Outside of Containment	10A
		AP 26C-004	Operability Determination and Functionality Assessment	45A
		AP 28-001	Operability Evaluations	27A
		SYS BG-201	Shifting Charging Pumps	73, 74
	Work Orders	WO	15-402735-000, 15-402735-002, 15-702735-005, 15-402735-006, 20-464381-000, 20-464381-001, 21-470773-014, 22-479602-000, 22-479602-001, 22-479602-002, 22-479602-003, 22-479602-004, 22-479602-005	
71111.17T	Calculations	17-073	Wolf Creek Thermally Induced Current Analysis	2
		HG-C-001	Structural Evaluation of the Cask Pedestal of Wolf Creek Generating Station	1



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		KA-04-W	Provide Check Valve Engineering Assessment	2
		XX-E-006	AC [Alternating Current] System Analysis	008
	Corrective Action Documents	Condition Reports	73206, 73333, 100357, 116786, 121810, 132144, 141943, 143212, 144548, 145351, 10002640, 10006110, 10006220, 10007567, 10008771, 10008772, 10009317, 10012958	
	Corrective Action Documents Resulting from Inspection	Condition Reports	10013708, 10013745, 10013746	
	Drawings	E-138N08	Schematic Diagram, SIS Pump Miniflow Isolation Valve	5
		KD-7496	One Line Diagram	74
		M-10BN	Borated Refueling Water Storage	01
		M-12AE01	Piping and Instrumentation Diagram, Feedwater System	46
		M-12BM02	Piping and Instrumentation Diagram, Steam Generator Blowdown System	15
		M-12EJ01	Piping and Instrumentation Diagram, Residual Heat Removal System	56
		M-12KA01	Piping and Instrumentation Diagram, Compressed Air System	35
		WIP-E-017-00563-007-A-1	NG01 Connection Diagram	00
	Engineering Changes	CP 013324	7300 Controls Upgrade	001
		CP 015246	NG Voltmeters Replacement	0
		CP 020393	EDG Supply Fan Motor Starters Replacement	0
		CP 12513	ESF XNB02 Transformer Replacement	0
		CP 13908	Westinghouse RHR Pump Motor Refurbishment and Upgrades	03
		CP 14853	SGK04A & B PMT-Bitzer Compressor Replacement	04
		CP 20008	7300 Controls Upgrade - Temporary Loop System	03
		CP 20021	ESF XNB01 Transformer Replacement	3
		CP 20161	Removal of Interlock to Motor Driven Feedwater Pump Motor Start	1
		CP 20165	Diesel Fire Pump Instrument Control Panel Equivalent Replacement	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		CP 20227	Remove Internals from Check Valve KAV0002	0
		CP 20255	PFSSD Modification to Address IN 92-18 for Multiple MOVs	0
		CP 20365	345-120 Breaker Replacement	04/22/2021
		CP 20380	PFSSD Modification to Address IN 92-18 for Multiple MOVs-Refuel 25	0
		CP 20431	ESW VLC Sump Pump Automatic Function	0
	Engineering Evaluations	M-761A-00108	Wolf Creek Nuclear Operating Company NSSS Control Replacement - Operating Differences	09/23/2021
	Miscellaneous	AI 23N-001	Air Operated Valve Categorization	5
		E-017-00820	Report on Nuclear Qualification Testing of BGII-252, BVII-5A, BWII-1316, BGP-241, VX-252, KX-241 and KA-241 Instruments	00
		ET 20-0007	License Amendment Request for Replacement of Engineered Safety Features Transformers with New Transformers that have Active Automatic Load Tap Changers	06/08/2020
		M-622.1A	Design Specification M-622.1A (Q) for Replacement Packaged Air Conditioning Units for the Wolf Creek Generating Station ASME Boiler and Pressure Vessel Code Section III Class 3	2
		WCNOC-16-0022	Replace Limit Switch for BMTV0040	02/13/2018
		WCOP-24	Operations EMG/OFN Setpoints	17
		WIP-E-017-00397-W25-A	Instruction Manual for Load Center Unit Substations GE	00
	Procedures	AI 26A-003	Regulatory Evaluations (Other Than 10 CFR 50.59)	17
		ALR 00-022A	XNB02 XFMR Lockout	15
		ALR 00-022D	XNB02 XFMR Trouble	11
		ALR 832	ESF XFMR XNB02	6
		AP 21I-001	Temporary Configuration Changes	16B
		AP 24D-003	Receipt Inspections	17
		AP 26A-003	10 CFR 50.59 Reviews	15
		APF 06-002-03	EAL Classification Matrix	0B
		EMG FR-C2	Response to Degraded Core Cooling	18
		IP-ENG-001	Standard Design Process (SDP)	1

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		STN AE-007	Startup Main Feedwater Pump Operational Test	16
		STN XNB-002	XNB02 ESF Transformer #2 Alarm and Trip Circuitry Verification	2
		STS IC-660A	Channel Calibration Digital High Range Area Radiation Monitor GT RE-0059	5A
		SYS AE-122	Startup Main Feedwater Pump Startup	41
	Self-Assessments	QH-2022-2300	10 CFR 50.59, Evaluations of Changes, Tests, and Experiments	02/24/2022
	Work Orders	Work Order (WO)	17-429672-000, 17-432438-006, 18-440780-006, 20-461706-000, 21-469378-000, 21-475741-000	
71111.18	Calculations	BN-20	RWST Volumes and Level Set Points	1, 2, 3, 4
		BN-M-013	Time Available for Injection, ECCS, and Containment Spray Pump Transfer and Evaluation of Air Entrainment at Empty Alarm	3
		SA-87-007	Determination of High Head and Indeterminate Head Safety Injection Flow Rate	0
		SA-92-009	Calculation of RWST Depletion Rate and ECCS Recirculation Switchover Time Following a Postulated Primary/Secondary Pipe Rupture	0
	Corrective Action Documents	Condition Reports	10006389, 10010968, 10012517	
	Corrective Action Documents Resulting from Inspection	Condition Report	10014808	
	Drawings	M-12BN01	Piping and Instrumentation Diagram Borated Refueling Water Storage System	20
		M-12EJ01	Piping and Instrumentation Diagram Residual Heat Removal System	57
		M-12EM01	Piping and Instrumentation Diagram High Pressure Coolant Injection System	46
	Engineering Changes	CP 020550	System Description M-10BN Update	0
	Miscellaneous	BLWE-1525	RWST and Level Setpoints	11/02/1981

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	SNP-3346	SNUPPS Project RWST Sizing and Level Setpoints	05/29/1980
		AI 21-016	Operator Time Critical Actions Validation	21
		ALR 00-047E	RWST LEV HILO	13
		EMG E-0	Reactor Trip or Safety Injection	45
		OFN BB-005	RCP Malfunctions	35
		STS EM-003B	ECCS (SI Pump) Flow Balance	16
	Work Orders	WO	18-440567-009, 20-462092-000	
71111.19	Corrective Action Documents	Condition Reports	10013418, 10014330, 10014448, 10014467, 10014472	
	Procedures	AP 16E-002	Post Maintenance Testing Development	21A
		MGE EOOP-05	Insulation Resistance Testing	27
		MPE E009Q-03	Inspection and Testing of Siemens Vacuum Circuit Breakers	11
		MPE NE-004	Alternator Inspection	16B
		RNM C-0578	Westinghouse CO Induction Disc Overcurrent Relay	5
		STS KJ-005A	Manual/Auto Start, SYNC and Loading of EDG NE01	71
		SYS KJ-123	Post Maintenance Run of Emergency Diesel Generator A	70
		SYS KJ-130	Removal and Restoration of EDG Support Systems	14A
	Work Orders	WO	18-436205-004, 20-446044-002, 20-466044-000, 21-474435-000, 21-475395-000, 21-475395-001, 21-475502-001, 21-475505-001, 21-475506-001, 21-475720-000, 21-476351-000, 22-479602-000	
71111.22	Calculations	EER 91-EF-03	Review of the Ultimate Heat Sink Performance with Two ESW Train Operation	1
		EF-29	EF-HV-43 and 44 Maximum Flow After Pipe Break of Non-Nuclear Piping Downstream	0
		EG-M-046	Hydraulic Analysis of the Component Cooling Water System for Break Flow Determination and Orifice Sizing	3
		J-K-EF01	Instrument Loop Uncertainty Estimate and Safety Related Setpoints Determination for EF System Loops 43 and 44	2
	Corrective Action Documents	Condition Reports	73370, 10012698, 10012801	
	Drawings	M-12BG03	Piping and Instrumentation Diagram Chemical and Volume Control System	51

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		M-12EF01	Piping and Instrumentation Diagram Essential SVC Water System	30
		M-12EF02	Piping and Instrumentation Diagram Essential Service Water System	41
		M-12EJ01	Piping and Instrumentation Diagram Residual Heat Removal System	57
	Miscellaneous	MI93-1310	Procedure Change Form	0
		MI94-0067	Procedure Change Form	0
		WCOP-02	Inservice Testing Program for Pumps, Valves, and Snubbers	16
		WCOP-02	Inservice Testing Program for Pumps, Valves, and Snubbers	16
		WCRE-34	Fourth 10-Year Interval Inservice Testing Basis Document	12
		Work Request	WR 05795-93	
	Procedures	AI 23P-001	Gas Intrusion Program	4A
		AP 29A-002	Inservice Inspection Program	14
		AP 29B-002	ASME Code Testing of Pumps and Valves	12A
		AP 29B-003	Surveillance Testing	17A
		OFN SG-003	Natural Events	39
		STS BG-007B	ECCS Train B Void Monitoring and Venting	14
		STS BG-100A	Centrifugal Charging System A Train Inservice Pump Test	50
		STS EF-201A	ESW System Inservice Check Valve Test	12A
		STS EF-210B	ESW System Inservice Check Valve Test	13
		STS EG-205B	Train B CCW to Radwaste Supply/Return Valves Inservice Test	13
	Work Orders	WO	08-305903-000, 20-461452-000, 20-466523-000, 21-468408-000, 21-469314-000, 21-472076-000, 21-472328-000, 22-477904-000	
71114.06	Corrective Action Documents Resulting from Inspection	Condition Reports	10014124, 10014211, 10014212	
71151	Corrective Action Documents Resulting from Inspection	Condition Report	10014624	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Miscellaneous	NEI 99-02	Regulatory Assessment Performance Indicator Guideline	7
		WCNOC-163	Mitigating System Performance Index (MSPI) Basis Document	13
	Procedures	AP 29G-001	RCS Unidentified Leak Rate Monitoring Program	6
		STS BB-006	RCS Water Inventory Balance Using the NPIS Computer	22
71152A	Corrective Action Documents	Condition Reports	10013103, 10013647, 10013905, 10013906, 10013907, 10013926, 10014177, 10014319	
	Corrective Action Documents Resulting from Inspection	Condition Report	10015826	
	Miscellaneous	BAP-21-0465	Breach Authorization Permit	
		E-1F9910	Post-Fire Safe Shutdown Area Analysis	17
	Procedures	AP 10-103	Fire Protection Impairment Control	37
		AP 10-104	Breach Authorization	39A
71152S	Corrective Action Documents	Condition Reports	10012017, 10013136, 10013176, 10014298	
	Corrective Action Documents Resulting from Inspection	Condition Reports	10012377, 10012988, 10013471, 10015825	
	Procedures	EDI 23M-050	Equipment Evaluation for Maintenance Rule	13, 14