



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

March 11, 2024

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

SUBJECT: WOLF CREEK GENERATING STATION – FIRE PROTECTION TEAM
INSPECTION REPORT 05000482/2024012

Dear Cleve Reasoner:

On February 29, 2024, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Wolf Creek Generating Station and discussed the results of this inspection with Mike Boyce, Vice President Engineering, and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

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 black ink, appearing to read "Nicholas H. Taylor".

Signed by Taylor, Nicholas
on 03/11/24

Nicholas H. Taylor, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Docket No. 05000482
License No. NPF-42

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: WOLF CREEK GENERATING STATION – FIRE PROTECTION TEAM
INSPECTION REPORT 05000482/2024012 DATED MARCH 11, 2024

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DOCUMENT NAME: WOLF CREEK GENERATING STATION – FIRE PROTECTION TEAM
INSPECTION REPORT 05000482/2024012

Non-Public Designation Category: MD 3.4 Non-Public _____ (A.3 - A.7 or B.1)

ADAMS ACCESSION NUMBER: **ML24065A406**

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| SIGNATURE | /RA/ | /RA/ | /RA/ | /RA/ | |
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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Number: 05000482

License Number: NPF-42

Report Number: 05000482/2024012

Enterprise Identifier: I-2024-012-0002

Licensee: Wolf Creek Nuclear Operating Corp

Facility: Wolf Creek Generating Station

Location: Burlington, KS

Inspection Dates: February 12 to 29, 2024

Inspectors: J. Drake, Senior Reactor Inspector
J. Mejia, Reactor Inspector
G. Pick, Senior Reactor Inspector

Approved By: Nicholas H. Taylor, Chief
Engineering Branch 2
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a fire protection team 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.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

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 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

71111.21N.05 - Fire Protection Team Inspection (FPTI)

Structures, Systems, and Components (SSCs) Credited for Fire Prevention, Detection, Suppression, or Post-Fire Safe Shutdown Review (IP Section 03.01) (4 Samples)

The inspectors verified that components and/or systems will function as required to support the credited functions stated for each sample. Additional inspection considerations are located in the fire hazards analysis or safe shutdown analysis.

- (1) Ensured that post maintenance and surveillance activities were performed as scheduled for the underground fire loop and fire pumps
- (2) Performed walk downs to identify equipment alignment discrepancies, inspect for deficient conditions such as corrosion, missing fasteners, cracks, and degraded insulation.
- (3) Verified that operator actions could be accomplished for procedure OFN RP-017, "Control Room Evacuation," as assumed in the licensee's fire probabilistic risk assessment and safe shutdown analysis.
- (4) Ensured that post maintenance and surveillance activities were performed as scheduled for fire protection features in fire area A27, reactor trip switchgear room, and fire area C21, lower cable spreading room.

Fire Protection Program Administrative Controls (IP Section 03.02) (1 Sample)

The inspectors verified that the selected control or process is implemented in accordance with the licensee's current licensing basis. If applicable, ensure that the licensee's fire protection program contains adequate procedures to implement the selected administrative control. Verify that the selected administrative control meets the requirements of all committed industry standards.

- (1) Evaluated the administrative controls related to hot work, combustible controls, fire impairments, and fire watches.

Fire Protection Program Changes/Modifications (IP Section 03.03) (2 Samples)

The inspectors verified the following:

- a. Changes to the approved fire protection program do not constitute an adverse effect on the ability to safely shutdown.

- b. The adequacy of the design modification, if applicable.
 - c. Assumptions and performance capability stated in the safe shutdown analysis have not been degraded through changes or modifications.
 - d. The fire protection program documents, such as the updated final safety analysis report, fire protection report, fire hazards analysis, and safe shutdown analysis were updated consistent with the fire protection program or design change.
 - e. Post-fire safe shutdown operating procedures, such as abnormal operating procedures, affected by the modification were updated.
- (1) Transferred exterior firefighting equipment from fixed fire hose houses to mobile vehicles located inside and outside the protected area.
 - (2) Changed fire water supply pipe containment isolation valve from a swing check valve to a nozzle check valve and increased the spring force to ensure appropriate isolation.

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On February 29, 2024, the inspectors presented the fire protection team inspection results to Mike Boyce, Vice President Engineering, and other members of the licensee staff.

DOCUMENTS REVIEWED

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|----------------------|-------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| 71111.21N.05 | Calculations | FP-MW-003 | Minimum Wall Determination for 1FP003AA12 | April 24, 1989 |
| 71111.21N.05 | Calculations | KC-264 | Maximum Service Pressure for the Fire Protection System Piping | 0 |
| 71111.21N.05 | Calculations | KC-M-006 | Water-based Fire Protection System and Standpipe System Hydraulic Calculation | 1 |
| 71111.21N.05 | Corrective Action Documents | CR- | 00106368, 00145251, 10000899, 10000916, 10002218, 10002345, 10002506, 10002793, 10003002, 10003178, 10003978, 10004001, 10008133, 10008956, 10009191, 10010105, 10010236, 10010968, 10011137, 10011967, 10012261, 10013103, 10013467, 10014308, 10015654, 10015821, 10016513, 10017241, 10017527, 10017628, 10017895, 10019028, 10021614, 10022233, 10023112, 10023674, 10023797, 10023855, 10023856, 10023858, 10023861, 10024164, 10024397, 10025126, 10025633, 10027106, 10027534, 10028868, 10029086, 10029102, 10029117, 10029413, 10029467, 10029486, 10029769, 10029770, 10029771, 10030085 | |
| 71111.21N.05 | Corrective Action Documents Resulting from Inspection | CR- | 10030122, 10030162, 10030195, 10030196, 10030218 | |
| 71111.21N.05 | Drawings | 10466-M-658-00067-W04 | Load Center & Motor Generator Sets Room Auxiliary Building EI 2026' 0" | March 16, 1983 |
| 71111.21N.05 | Drawings | M-0023, sheet 1 | P&ID Fire Protection System (FP) | 75 |
| 71111.21N.05 | Drawings | M-0023, sheet 2 | P&ID Fire Protection System (FP) | 33 |
| 71111.21N.05 | Drawings | M-0140 | Piping Penetrations Circulation Water Screenhouse | 8 |
| 71111.21N.05 | Drawings | M-12KC01 | P&ID Fire Protection Turbine Building | 22 |
| 71111.21N.05 | Drawings | M-12KC02 | P&ID Fire Protection System | 26 |
| 71111.21N.05 | Drawings | M-12KC03 | P&ID Fire Protection System | 11 |
| 71111.21N.05 | Drawings | M-12KC05 | P&ID Fire Protection System | 3 |
| 71111.21N.05 | Drawings | M-12KC06 | P&ID Fire Protection Halon System | 2 |
| 71111.21N.05 | Drawings | M-1X1924 | Auxiliary Building Penetration Closure Wall Elevation | 1 |

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| | | | Sheet 24 | |
| 71111.21N.05 | Drawings | M-650A-00047, sheet 1 | Lower Cable Spreading Area EI 2023' 0" Pre-action System | 11 |
| 71111.21N.05 | Drawings | M-663-00017 | Penetration Seal Typical Details | W23 |
| 71111.21N.05 | Drawings | M-663-00017A | Fire Protection Evaluations for Unique or Unbounded Fire Barrier Configurations | W08 |
| 71111.21N.05 | Drawings | NEIL-PXX-062 | Nuclear Electric Insurance Limited General Arrangement Insurance Plan | 1 |
| 71111.21N.05 | Engineering Changes | 020430 | Enertech Nozzle Check Valve Model DRV-Z Helical Spring | 1 |
| 71111.21N.05 | Engineering Changes | 020447 | Diesel-Driven Fire Pump Engine - Fuel in Oil Resolution | 0 |
| 71111.21N.05 | Engineering Changes | 020479 | Install Seal in Penetrations P135W2195 & 2196 | 0 |
| 71111.21N.05 | Engineering Changes | 020480 | Removal of Fire Hoses from Hose Houses | 0 |
| 71111.21N.05 | Engineering Evaluations | E-1F9915 | Design Basis Document for OFN RP-017, Control Room Evacuation | 16 |
| 71111.21N.05 | Engineering Evaluations | WCNOC PSA-067 | Internal Fire - Qualitative Screening, Quantitative Screening and Quantification Notebook | 2 |
| 71111.21N.05 | Miscellaneous | | 20230112-TIME_CRITICAL-19605598-1 | January 16, 2023 |
| 71111.21N.05 | Miscellaneous | | 20230112-TIME_CRITICAL-19605601-1 _1 | January 16, 2023 |
| 71111.21N.05 | Miscellaneous | | 20230110-TIME_CRITICAL-19580671-1 | January 10, 2023 |
| 71111.21N.05 | Miscellaneous | | Fire Protection Program Regulatory Bases | 4 |
| 71111.21N.05 | Miscellaneous | A-3824 | Technical Specification for Fire Protection System for Wolf Creek Generation Station | 17 |
| 71111.21N.05 | Miscellaneous | A-3862 | Specification for Circulation Water Screenhouse and Discharge Structure | AM10 |
| 71111.21N.05 | Miscellaneous | ANSI B31.1 - 1973 edition and Summer | Power Piping | 1973, 1976 |

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| | | 1976 addenda | | |
| 71111.21N.05 | Miscellaneous | APF 10-103-04 | Hourly Fire Watch Permit Log | June 12, 2023 |
| 71111.21N.05 | Miscellaneous | M-10KC | System Description Fire Protection System (KC & FP) | 13 |
| 71111.21N.05 | Miscellaneous | PT | 12296, 12299, 12330, 12341, 12343, 12996, 14660, 15609, 16659, 16826, 17458, 18074, 18502, 18616, 18669, 18707, 18727, 18746, 18760, 18767, 18796, 18821 | |
| 71111.21N.05 | Miscellaneous | Response Plan | Corroded Fire Protection Pipe 1FP003BA-12 at CWSH | February 27, 2024 |
| 71111.21N.05 | Miscellaneous | Terracon Project No. 02117086 | Limited Site Investigation Report | September 27, 2011 |
| 71111.21N.05 | Miscellaneous | WCAP-16755-NP | Operator Time Critical Action Program Standard | 0 |
| 71111.21N.05 | Miscellaneous | WCLR-13 | Fuel Oil Chemistry B2,1,14 | 3 |
| 71111.21N.05 | Miscellaneous | WCLR-14 | Fire Water System B2.1.13 | 4 |
| 71111.21N.05 | Miscellaneous | WCLR-15 | Fire Protection B2.1.12 | 2 |
| 71111.21N.05 | Miscellaneous | WCLR-34 | Buried Piping and Tanks Inspection B2.1.18 | 3 |
| 71111.21N.05 | Miscellaneous | WR 01698-89 | Engineering Disposition | April 27, 1989 |
| 71111.21N.05 | Miscellaneous | WR 02641-88 | Engineering Disposition | March 10, 1989 |
| 71111.21N.05 | Procedures | AI 10-001 | Fire Brigade Equipment Inventory, Maintenance and Cleaning | 13B |
| 71111.21N.05 | Procedures | AI 21-016 | Operator Time Critical Actions Validation | 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 |
| 71111.21N.05 | Procedures | AI 21-017 | Timed Fire Protection Actions Validation | 10B |
| 71111.21N.05 | Procedures | AP 10-100 | Fire Protection Program | 26 |
| 71111.21N.05 | Procedures | AP 10-101 | Control of Transient Ignition Sources | 27 |
| 71111.21N.05 | Procedures | AP 10-102 | Control of Combustible Materials | 27 |
| 71111.21N.05 | Procedures | AP 10-103 | Fire Protection Impairment Control | 41 |
| 71111.21N.05 | Procedures | AP 10-106 | Fire Preplans | 24 |
| 71111.21N.05 | Procedures | AP 10-109 | Fire Protection Inspections | 9A |
| 71111.21N.05 | Procedures | AP 21-004 | Operator Response Time Program | 5A |

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| 71111.21N.05 | Procedures | AP 23I-003 | License Renewal Implementation | 0A |
| 71111.21N.05 | Procedures | MCM XP-001 | Pump Packing Adjustment | 2 |
| 71111.21N.05 | Procedures | OFN RP-017 | Control Room Evacuation | 49A, 50, 51, 52, 53, 54, 55, 56 |
| 71111.21N.05 | Procedures | STN FP-202 | Yard Loop, Hydrant Flush & Hydrant Inspection | 16 |
| 71111.21N.05 | Procedures | STN FP-204 | Fire Protection System C-Factor Test | 31 |
| 71111.21N.05 | Procedures | STN FP-206 | Spray and Sprinkler System Function Testing - Wet Pipe | 17 |
| 71111.21N.05 | Procedures | STN FP-208 | Hose Rack Visual Inspection | 10B |
| 71111.21N.05 | Procedures | STN FP-209 | Fire Pump Performance and Sequential Start Test | 34 |
| 71111.21N.05 | Procedures | STN FP-210 | Hose Rack Visual Inspection Reactor Building | 3 |
| 71111.21N.05 | Procedures | STN FP-211 | Diesel Fire Pump 1FP01PB Monthly Operation and Fuel Leven Check | 49 |
| 71111.21N.05 | Procedures | STN FP-216 | Spray and Sprinkler Functional Testing - Pre-Action | 0 |
| 71111.21N.05 | Procedures | STN FP-225 | Fire Barrier Inspection | 11 |
| 71111.21N.05 | Procedures | STN FP-400C | Halon Sys/Control Cab. Load Center/M.G. Sets Rm (KC-225) | 9B |
| 71111.21N.05 | Procedures | STN FP-404A | Halon Main Bank Tank Weight and Pressure Checks | 12 |
| 71111.21N.05 | Procedures | STN FP-411 | Fire Pump (Diesel) Battery Inspection | 8C |
| 71111.21N.05 | Procedures | STN FP-412 | Fire Pump (Diesel) Battery and Electrical Termination Check | 7E |
| 71111.21N.05 | Procedures | STN FP-431 | Fire Hose Station Valve Operability and Hose Replacement/Hydro | 9 |
| 71111.21N.05 | Procedures | STN FP-432 | Containment Building Fire Hose Station Valve Operability and Hose Replacement | 7A |
| 71111.21N.05 | Procedures | STN FP-600 | Fire Pump Diesel Fuel Storage Tank | 11 |
| 71111.21N.05 | Procedures | STN FP-817A | Trip Act. Device Oper. Test For Bechtel Zones 100, 103, 104, 105, 106, 107, 112, 113 and 114 | 11C |
| 71111.21N.05 | Procedures | STN FP-817F | Trip Act. Device Oper. Test for Bechtel Zones 306, 307 and 314-317 | 8B |
| 71111.21N.05 | Procedures | STN KC-208 | Hose Rack Visual Inspection (Balance of Plant) | 11A |
| 71111.21N.05 | Procedures | SYS FP-280 | Temporary Diesel Fire Pump Installation and Removal | 8 |
| 71111.21N.05 | Procedures | SYS FP-290 | Temporary Diesel Fire Pump Operations | 28 |

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|----------------------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| 71111.21N.05 | Work Orders | WO | 11-344879-000, 12-361269-000, 13-366877-000, 14-390203-000, 16-418842-000, 17-422828-000, 17-427766-070, 17-427919-000, 17-434751-000, 18-434832-000, 18-438968-000, 19-448843-000, 19-450243-000, 19-453258-000, 20-457452-005, 20-458272-000, 20-459743-000, 20-460511-000, 20-461722-000, 21-468506-000, 21-469299-000, 21-470489-000, 21-474041-000, 21-476631-000, 21-476636-000, 22-476973-000, 22-477446-000, 22-477639-000, 22-477651-000, 22-478338-000, 22-479773-000, 22-479783-000, 22-480139-000, 22-480182-000, 22-480182-000, 22-480514-000, 22-481003-000, 23-404785-000, 23-483628-000, 23-484780-000, 23-487116-000, 23-487421-000, 23-488552-000 | |