



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064**

July 21, 2000

Otto L. Maynard, President and
Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, Kansas 66839

**SUBJECT: WOLF CREEK GENERATING STATION--NRC INSPECTION
REPORT NO. 50-482/00-06**

Dear Mr. Maynard:

On July 1, 2000, the NRC completed an inspection at your Wolf Creek Generating Station facility. The enclosed report presents the results of this inspection which were discussed with you and other members of your staff on June 30, 2000.

The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel. As indicated in the report, no findings were identified during this inspection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room)."

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

William D. Johnson, Chief
Project Branch B
Division of Reactor Projects

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

Enclosure:
NRC Inspection Report
No. 50-482/00-06

cc w/enclosure:
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Only inspection reports to the following:

D. Lange **(DJL)**

NRR Event Tracking System **(IPAS)**

WC Site Secretary **(SLA2)**

Wayne Scott **(WES)**

R:_WC\WC2000-06RP-FLB.wpd

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 50-482
License Nos.: NPF-42
Report No.: 50-482/00-06
Licensee: Wolf Creek Nuclear Operating Corporation
Wolf Creek Generating Station
Location: 1550 Oxen Lane NE
Burlington, Kansas
Dates: May 14 through July 1, 2000
Inspectors: F. L. Brush, Senior Resident Inspector
R. V. Azua, Project Engineer
R. A. Kopriva, Senior Project Engineer
J. B. Nicholas, PH.D., Senior Health Physicist
Approved By: W. D. Johnson, Chief, Project Branch B

ATTACHMENTS: 1. Supplemental Information
2. NRC's Revised Reactor Oversight Process

SUMMARY OF FINDINGS

Wolf Creek Generating Station
NRC Inspection Report No. 50-482/00-06

The report covers a 7-week period of resident inspection and an announced inspection by a Region IV senior health physicist.

The body of the report is organized under the broad categories of Reactor Safety, Radiation Safety, and Other Activities. There were no findings identified in these areas.

Report Details

Summary of Plant Status

The plant operated at approximately 100 percent power the entire report period.

1. **REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather (71111.01)

a. Inspection Scope

The inspectors performed a walkdown of the essential service water pump house to verify that adverse weather would not affect mitigating systems. The inspectors discussed aspects of severe weather preparations with licensee personnel. The inspector reviewed Procedure OFN SG-003, "Natural Events," Revision 7. The inspectors also reviewed portions of the Updated Safety Analysis Report.

b. Issues and Findings

The inspectors did not identify any findings.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed a partial walkdown of Emergency Diesel Generator B during maintenance on Emergency Diesel Generator A and essential service water System B during maintenance on essential service water System A to verify equipment alignment and identify discrepancies that could impact redundant system operability. The inspectors used the following procedures to perform the walkdowns:

- CKL EF-120, "Essential Service Water Valve, Breaker, and Switch Lineup," Revision 35
- CKL KJ-121, "Diesel Generator NE-01 and NE02 Valve Checklist," Revision 21
- SYS KJ-121, "Diesel Generator NE-01 and NE02 Valve Lineup For Automatic Operation," Revision 25

The inspectors reviewed portions of the Technical Specifications and Updated Safety Analysis Report.

b. Issues and Findings

The inspectors did not identify any findings.

1R05 Fire Protection (71111.05)

1. Quarterly Fire Area Walkdowns

a. Inspection Scope

The inspectors performed a walkdown of the following areas to determine that the licensee implemented a fire protection program for the control of combustibles, maintains the fire detection and suppression equipment and passive fire protection features, and adequately compensates for inoperable or degraded fire protection equipment, systems, or features:

- Emergency core cooling system Train A pump rooms
- Emergency core cooling system Train B pump rooms
- Control building lower cable spreading room

The inspectors used the area fire preplans for the walkdown and reviewed portions of the Updated Final Safety Analysis Report.

b. Issues and Findings

The inspectors did not identify any findings.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the licensee's response plan for external flooding to verify that the licensee's flood mitigation plans and equipment are consistent with the design requirements. The inspectors reviewed the following:

- ALR 00-55D, "Alarm Response Procedure Essential Service Water Valve Pit Level High," Revision 4
- Off Normal Procedure OFN SG-003, "Natural Events," Revision 7
- Procedure AP 06-002, "Radiological Emergency Response Plan (RERP)," Revision 1, Emergency Action Level 11, "Natural Phenomena"
- Applicable portions of the Updated Safety Analysis Report

The inspectors also discussed responses to flooding with licensee personnel.

b. Issues and Findings

The inspectors did not identify any findings.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors observed the flow and differential pressure performance test on the essential service water side of component cooling water heat Exchanger A. The inspectors also observed a portion of the inspection of control room air conditioning heat Exchanger A to verify that the licensee adequately identified and resolved any potential or common cause heat sink performance problems. The inspectors used the following documents:

- STN PE-037A Essential Service Water Train A heat exchanger flow and differential pressure testing
- Work Order 00-216455-000 Control Room Air Conditioning Unit SGK04A

b. Issues and Findings

The inspectors did not identify any findings.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's maintenance rule implementation for the emergency lighting dc system, component cooling water heat exchangers, and safety injection relief valves to assess the effectiveness of maintenance efforts that apply to scoped structures, systems, and components. The inspector's review included the following information:

- Maintenance rule bases Information
- Maintenance Rule (a)(1) disposition checklist and documentation summary
- Maintenance rule management reports
- Maintenance rule expert panel meeting minutes
- Maintenance rule performance evaluations
- Functional failure determination checklists

b. Issues and Findings

The inspectors did not identify any findings.

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

a. Inspection Scope

The inspectors reviewed the licensee's risk assessment for equipment outages as a result of planned and emergent maintenance to evaluate the licensee's effectiveness in assessing risk for planned and emergent maintenance. The inspectors also discussed

the planned and emergent work activities with planning and maintenance personnel. The inspectors' review included the following:

- Operational risk assessments for planned maintenance for the weeks of May 22 and 29 and June 12 and 19, 2000
- Actual, planned, and emergent work schedules for the same weeks

b. Issues and Findings

The inspectors did not identify any findings.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following operability determinations to ensure that operability was properly justified and the component or system remained operable:

- Residual heat removal Pump B room cooler essential service water system leak
- Chemical and volume control system letdown heat exchanger component cooling water pipe crack
- Emergency Diesel Generator B emergency fuel oil transfer pump

The inspectors also discussed the determinations with licensee personnel.

b. Issues and Findings

The inspectors did not identify any findings.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed or observed the postmaintenance testing on the following equipment to verify that procedures and test activities are adequate to verify system operability:

- Essential service water flow Throttle Valve EFV058 for component cooling water heat Exchanger A repositioning
- Essential service water Screen A spray valve
- Essential service water self-cleaning strainer motor
- Emergency Diesel Generator A intercooler heat exchanger

- Essential Service Water A return isolation valve for Emergency Diesel Generator A coolers
- Emergency Diesel Generator B auxiliary lube-oil (keep warm) pump
- Electrohydraulic control system filters

b. Issues and Findings

The inspectors did not identify any findings.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed or observed all or part of the following surveillance activities to verify that risk significant structures, systems, and components are capable of performing their intended safety functions and assessing their operational readiness:

- STN IC-249C Calibration of Component Cooling Water Pump A and C discharge flow loops
- STS AL-102 Motor-driven auxiliary feedwater Pump B inservice pump test
- STS IC-208A NB01 kV loss of voltage and loss of off-site power trip actuating device operational test
- STS IC-208A NB02 4 kV loss of voltage and loss of off-site power trip actuating device operational test
- STS IC-209A 4kV degraded voltage power trip actuating device operational Test NB01 bus - Separation Group 1
- STS IC-209B 4kV degraded voltage trip actuating device operational Test NB02 bus - Separation Group 4
- STS KJ-005B Manual/Auto synchronization and loading of Emergency Diesel Generator NE02
- STS KJ-015A Manual/Auto fast start synchronization and loading of Emergency Diesel Generator NE01

b. Issues and Findings

The inspectors did not identify any findings.

2. **RADIATION SAFETY**
Cornerstone: Occupational, Public

2OS3 Radiation Monitoring Instrumentation (71121.03)

a. Inspection Scope

The inspectors interviewed licensee personnel and reviewed the following items:

- Calibration and source response check documentation, operability, and alarm setpoints, when applicable, of portable radiation detection instrumentation, temporary area radiation monitors, continuous air monitors, whole-body counting instrumentation, personnel contamination monitors, and radiation monitor instrumentation not included in the maintenance rule program
- Radiation protection technician instrument selection and self-verification of instrument operability prior to use
- The status and surveillance records of self-contained breathing apparatuses staged and ready for use in the plant
- The licensee's capability for refilling and transporting self-contained breathing apparatus air bottles to and from the control room and operations support center during emergency conditions
- Control room operator and emergency response personnel training and qualifications for use of self-contained breathing apparatus
- Licensee self-assessments and audits, focusing on radiological incidents that involved personnel internal exposures
- Selected exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area

b. Issues and Findings

The inspectors did not identify any findings.

4. **OTHER ACTIVITIES**

4OA5 Other

.1 Temporary Instruction 2515/144, "Performance Indicator Data Collecting and Reporting Process Review"

a. Inspection Scope

The inspectors conducted a review of the licensee's performance indicator data collection and reporting process to determine if it was consistent with the guidance developed by the Nuclear Energy Institute, as endorsed by the NRC. The following documents were reviewed during this inspection:

- Wolf Creek Procedure AP 26A-007, "NRC Performance Indicators"
- Performance indicator data summary Report Q1/2000
- Emergency planning performance indicators
- Wolf Creek Nuclear Operating Company emergency response personnel duty roster
- Wolf Creek Nuclear Operating Company 1999 validation program, NRC performance indicators
- Nuclear Energy Institute NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0

In cases where procedures or guidelines did not exist, or that the data collection requirements were unclear, interviews were conducted with the individuals responsible for data collection and reporting to assess the individual's understanding of the NEI 99-02 guidance and the licensee's reporting process.

b. Findings

The inspectors did not identify any findings.

4OA6 Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Otto Maynard, President and Chief Executive Officer, and other members of licensee management on June 30, 2000.

The inspectors asked the licensee whether or not any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

K. A. Harris, Manager, Licensing and Corrective Action
J. W. Johnson, Manager, Resource Protection
O. L. Maynard, President and Chief Executive Officer
B. T. McKinney, Vice President Plant Operations and Plant Manager
R. Munch, Vice President Engineering and Information Services
S. R. Koenig, Manager, Performance Improvement and Assessment
C. C. Warren, Vice President Operations Support

LIST OF DOCUMENTS REVIEWED

Fire Protection

- AP 10-101 "Control of Transient Ignition Sources," Revision 5
- AP 10-102 "Control of Transient Combustible Materials," Revision 4
- AP 21B-003 "Control of Temporary Equipment," Revision 1
- FCP. A-2 Auxiliary building 1974 foot and 1967 foot emergency core cooling system Train A pump rooms
- FCP. A-4 Auxiliary building 1974 foot and 1967 foot emergency core cooling system Train B pump rooms
- FCP. C-21 Control building 2032 foot lower cable spreading room

Health Physics Procedures

- RPP-01-405 "HP Instrument Program," Revision 12
- RPP-05-705 "Whole-Body Counter Operation," Revision 10
- RPP-05-710 "WBC-8000 Nuclear Data People Mover System Operation," Revision 13
- RPP-06-705 "ND Whole Body Counter Calibration," Revision 7
- RPP-06-710 "WBC-8000 Nuclear Data People Mover System Calibration," Revision 10
- RAP-06-715 "Whole Body Counting Quality Control," Revision 4

Instrument and Controls Procedures

- ITS IC-452A "Channel Calibration New Fuel Criticality Monitor Radiation Monitor SDRE0035," Revision 6
- ITS IC-452B "Channel Calibration New Fuel Criticality Monitor Radiation Monitor SDRE0036," Revision 7
- ITS IC-454A "Channel Calibration Fuel Pool Bridge Crane Criticality Monitor Area Radiation Monitor SDRE0037," Revision 8
- ITS IC-454B "Channel Calibration Fuel Pool Bridge Crane Criticality Monitor Area Radiation Monitor SDRE0038," Revision 7
- ITS IC-252A "Analog Channel Operational Test New Fuel Pool Criticality Monitor SDRE0035," Revision 7
- ITS IC-252B "Analog Channel Operational Test New Fuel Pool Criticality Monitor SDRE0036," Revision 7
- ITS IC-254A "Analog Channel Operational Test New Fuel Pool Criticality Monitor SDRE0037," Revision 9
- ITS IC-254B "Analog Channel Operational Test New Fuel Pool Criticality Monitor SDRE0038," Revision 8
- SON IC-505 "Channel Calibration Radiate Building Solid Radiate Area Radiation Monitor SDRE0006," Revision 4
- SON IC-509 "Channel Calibration Radiate Building Filter/Demineralize Valve Room Corridor Area Radiation Monitor SDRE0010," Revision 4
- SON IC-517 "Channel Calibration Auxiliary Building Corridor Ground Floor Area Radiation Monitor SDRE0018," Revision 4

Maintenance Rule Documents

- Functional failure determination checklist for Q.-02 - emergency lighting system
- Functional failure determination checklist for EM-01 - high pressure coolant injection system
- Maintenance rule bases information, high pressure coolant injection system
- Maintenance Rule (a)(1) disposition checklist and document summary for Q.-02, emergency lighting DC system, dated October 8, 1999
- Maintenance Rule (a)(1) disposition checklist and document summary for E.G.-01, transfer heat from engineered safety features systems to essential service water system, dated August 4, 1999

- Maintenance Rule (a)(1) disposition checklist and document summary for EM-01, safety injection relief valves (EM8853A/B and EM8851) reliability
- Maintenance rule expert panel meeting Minutes Q.-02 - emergency lighting system
- Maintenance rule expert panel meeting Minutes E.G.-01 - component cooling water system
- Maintenance rule expert panel meeting Minutes EM-01 - high pressure coolant Injection System
- Maintenance rule performance evaluation for Q. - emergency lighting system
- Maintenance rule performance evaluation for E.G. - component cooling water system
- Performance Improvement Request 99-0429
- Performance Improvement Request 99-2139
- Performance Improvement Request 99-2720
- SON PE-033, Component cooling water heat exchanger performance test, performed April 4, 1999

Operability Evaluations

- Cooling Coil Design Data Sheet for SGL10B, residual heat removal Pump B room cooler
- Performance Improvement Request 2000-1368, component cooling water system leak
- Reportability Evaluation Request 2000-009, component cooling water system leak
- Surveillance Test SON PE-037B, "Essential Service Water Heat Exchanger Flow and Differential Pressure Testing," test results
- Various sections of the Updated Safety Analysis Report

Postmaintenance Testing

- SYS KJ-121 Diesel Generator NE01 and NE02 lineup for automatic operation
- SYS KJ-124 Postmaintenance run of Emergency Diesel Generator B
- Work Order 99-212795-001 Postmaintenance testing of essential service water self-cleaning strainer motor
- Work Order 00-216021-002 Postmaintenance testing essential service water Screen A spray valve

- Work Order 00-217769-000 Electrohydraulic control system cleanup filters
- Work Order 00218593-002 Emergency Diesel Generator A intercooler heat exchanger
- Work Order 00-219056-002 Auxiliary lube-oil (keep warm) pump for KKJ01B
- Work Order 00-219056-004 Auxiliary lube-oil (keep warm) pump for KKJ01B
- Work Order 00-219116-003 Emergency Diesel Generator A coolers essential service Water A return isolation

Health Physics Procedures

- RAP-01-405 "HP Instrument Program," Revision 12
- RAP-05-705 "Whole-Body Counter Operation," Revision 10
- RAP-05-710 "WBC-8000 Nuclear Data People Mover System Operation," Revision 13
- RAP-06-705 "ND Whole Body Counter Calibration," Revision 7
- RAP-06-710 "WBC-8000 Nuclear Data People Mover System Calibration," Revision 10
- RAP-06-715 "Whole Body Counting Quality Control," Revision 4

MISCELLANEOUS DOCUMENTATION

- Listing of radiation monitoring systems included in the maintenance rule program
- Selected contamination monitor, portal monitor, portable survey instruments, and area radiation monitor calibration and response test documentation
- Calibration data packages and quality control records for the Nuclear Data Whole Body Counter
- Self-Contained Breathing Apparatus Personnel Qualification Records
- Performance Improvement Requests 99-1344, 99-1382, 99-1581, 99-3203, 2000-1823

QUALITY EVALUATION DOCUMENTS

- Quality Evaluation Audit Report K-509, "Radiation Protection," performed March 1 through June 25, 1999
- Quality Evaluation Audit Report K-519, "Corrective Action," performed October 1, 1999 through January 4, 2000.

- Plant Evaluation Program Report OB 00-1191, "Radiation Monitoring Instrumentation," performed May 31 through June 13, 2000
- Self Assessment SEL 00-011, "Effectiveness of the Dosimetry and Internal Exposure Programs," performed April 25 through May 18, 2000

Training Lesson Plans

- TIN #GT1245302, "Respiratory Protection II," Revision 7
- FB1231404, "Fire Brigade Self-Contained Breathing Apparatus," Revision 3

Updated Safety Analysis Report

- 12.3 Radiation Protection Design Features
- 12.3.4.1.2.6 Calibration and Maintenance
- 12.3.4.1.2.7 Sensitivities
- 12.3.4.1.2.8 Criteria for Location of Area Monitors
- 12.3.4.1.2.9 Setpoints
- 12.3.4.2 Airborne Radioactivity Monitoring

ATTACHMENT 2

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
<ul style="list-style-type: none"> ● Initiating Events ● Mitigating Systems ● Barrier Integrity ● Emergency Preparedness 	<ul style="list-style-type: none"> ● Occupational ● Public 	<ul style="list-style-type: none"> ● Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the significance determination process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, or RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an action matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the action matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.