

APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-482/88-22

Operating License: NPF-42

Docket: 50-482

Licensee: Wolf Creek Nuclear Operating Corporation (WCNOC)
P.O. Box 411
Burlington, Kansas 66839

Facility Name: Wolf Creek Generating Station (WCGS)

Inspection At: Wolf Creek Site, Coffey County, Burlington, Kansas

Inspection Conducted: August 1-31, 1988

Inspectors:

B. L. Bartlett

B. L. Bartlett, Senior Resident Inspector,
Projects Section A, Division of Reactor Projects

9/8/88
Date

M. E. Skow

M. E. Skow, Resident Reactor Inspector,
Project Section A, Division of Reactor Projects

9/8/88
Date

W. M. McNeill

W. M. McNeill, Reactor Inspector,
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Division of Reactor Safety

9/22/88
Date

Approved:

D. D. Chamberlain

D. D. Chamberlain, Chief, Project Section A,
Division of Reactor Projects

9/22/88
Date

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PDC

Inspection SummaryInspection Conducted August 1-31, 1988 (Report 50-482/88-22)

Areas Inspected: Routine, unannounced inspection including plant status, followup on previously identified inspection findings, operational safety verification, monthly surveillance observation, monthly maintenance observation, onsite event followup, engineered safety features walkdown, new fuel receipt, inservice inspection data review and evaluation, physical security verification, and radiological protection.

Results: The licensee's definition of operability for the control room emergency ventilation isolation system has changed (paragraph 4), difficulty encountered during infrequently performed surveillances appear to be training related (paragraph 5), and procedural adherence by licensee workers appears to be adequate (paragraph 7). Within the areas inspected, one violation (failure to verify valve lineup, paragraph 4) was identified.

DETAILS1. Persons ContactedPrincipal Licensee Personnel

- *B. D. Withers, President and CEO
- *R. M. Grant, Vice President, Quality Assurance (QA)
- *F. T. Rhodes, Vice President, Nuclear Operations
- G. D. Boyer, Plant Manager
- *R. W. Holloway, Manager, Maintenance and Modifications
- *J. L. Maynard, Manager, Licensing
- *C. M. Estes, Manager, Operations
- *M. G. Williams, Manager, Plant Support
- *A. A. Freitag, Manager, Nuclear Plant Engineering (NPE), WCGS
- *B. T. McKinney, Manager, Technical Support
- *R. H. Belote, Manager, Nuclear Safety Engineering
- K. Peterson, Supervisor, Licensing
- *G. Pendergrass, Licensing
- *C. E. Parry, Manager, QA
- *S. J. Somerhalder, QA Clerk
- *C. G. Patrick, Supervisor Quality Systems
- *D. Dullum, Compliance Engineer

The NRC inspectors also contacted other members of the licensee's staff during the inspection period to discuss identified issues.

*Denotes those personnel in attendance at the exit meeting held on September 2, 1988.

2. Plant Status

The plant operated in Mode 1, 100 percent power, during the inspection period. On August 31, 1988, the licensee had 195 days of continuous power production.

3. Followup on Previously Identified Inspection Findings (92701)

- a. (Open) Violation (8705-02): Failure to Perform Activities in Accordance with Established Procedures - This violation concerned a test performer not following procedure upon encountering a test deficiency. The licensee's response stated that the test performer did not encounter a test deficiency, that instead invalid results were encountered. The licensee stated that the surveillance test was suspended and the shift supervisor informed of the invalid test. The licensee admitted that test suspension procedures were not followed. As part of corrective action to prevent reoccurrence, the licensee committed to notify the NRC resident reactor inspector when a surveillance test is suspended through shift turnover due to a test deficiency. This commitment is deemed to be unnecessary. The

licensee is requested to delete this requirement from the administrative procedures. Pending this deletion, this violation will remain open.

- b. (Closed) Unresolved Item (8705-03): RCS Flow - This unresolved item concerned the difference between Cycle 1 and Cycle 2 reactor coolant system (RCS) total flow rates. The RCS total flow rate measured for Cycle 1 was 405,700 gallons per minute (gpm). The RCS total flow rate for Cycle 2 was 395,800 gpm, a difference of 9,900 gpm. The Cycle 3 RCS total flow rate was measured at 400,476 gpm. The difference in cycle flow rates appear to be the result of Delta T drift. The drift was conservative in that the actual flow was higher than the measured flow. The Delta T error was within the error tolerance allowed by Westinghouse and RCS flow was within TS limits. These Delta T instruments were recalibrated prior to the Cycle 3 measurement and additional recalibrations are scheduled to take place prior to the Cycle 4 measurements. This unresolved item is closed.

4. Operational Safety Verification (71707)

The NRC inspectors verified that the facility was being operated safely and in conformance with regulatory requirements by direct observation of licensee facilities, tours of the facility, interviews and discussions with licensee personnel, independent verification of safety system status and limiting conditions for operations, and review of facility records. The NRC inspectors, by observation of randomly selected activities and interviews of personnel, verified that physical security, radiation protection, and fire protection activities were controlled.

By observing accessible components for correct valve position and electrical breaker position, and by observing control room indication, the NRC inspectors confirmed the operability of selected portions of safety-related systems. The NRC inspectors also visually inspected safety components for leakage, physical damage, and other impairments that could prevent them from performing their designed functions.

Selected NRC inspector observations are discussed below:

- a. On August 29, 1988, the licensee informed the NRC inspectors that an engineering evaluation had shown that without the air conditioner (AC) the control room emergency ventilation isolation system (CRVIS) was unable to meet its design basis. This means that with an AC unit inoperable, its associated CRVIS train would be inoperable. The licensee stated that a documentation search had revealed several instances of mode changes being made with an AC unit inoperable. Making a mode change with an AC unit inoperable would be in violation of TS 3.0.4. The licensee also discovered one instance of both AC units (one in each train) being inoperable for approximately 5 minutes. This constitutes an entry into TS 3.0.3. However, since it was for just 5 minutes, the requirements of

TS 3.0.3 were complied with. The licensee intends to issue a Licensee Event Report (LER) to document the instances of TS violations. Final NRC closure of this matter will be documented after review of the LER.

- b. While in the control room on August 31, 1988, performing routine review of completed Valve Checklist CKL GL-121, Revision 8, "Auxiliary Building Heading, Ventilating, and Air Conditioning (HVAC) System Valve Lineup," the NRC inspectors observed that page 7 of 12 was not signed off as complete and that three valves on page 12 of 12 (GL V-770, 771, and 149) were not signed off as complete. The shift supervisor determined that page 7 of 7 had been performed but that carry over of the signature to the latest revision had resulted in that page being missed. The shift supervisor also determined that the three valves not signed off on page 12 of 12 had not been verified to be in position and were not signed off. Although the documentation was not complete, the valves were in the correct alignment for system operability. Failure to complete the valve checklist is an apparent violation (482/882-01).

5. Monthly Surveillance Observation (61726)

The NRC inspectors observed selected portions of the performance of surveillance testing and/or reviewed completed surveillance test procedures to verify that surveillance activities were performed in accordance with TS requirements and administrative procedures. The NRC inspectors considered the following elements while inspecting surveillance activities:

- o Testing was being accomplished by qualified personnel in accordance with an approved procedure.
- o The surveillance procedure conformed to TS requirements.
- o Required test instrumentation was calibrated.
- o TS limiting conditions for operation (LCOs) were satisfied.
- o Test data was accurate and complete. Where appropriate, the NRC inspectors performed independent calculations of selected test data to verify accuracy.
- o The performance of the surveillance procedure conformed to applicable administrative procedures.
- o The surveillance was performed within the required frequency and the test results met the required limits.

Surveillances witnessed and/or reviewed by the NRC inspectors are listed below:

- o STS RE-006, Revision 3, "End of Life Core Moderator Temperature Coefficient Measurement," performed August 8 and 9, 1988
- o STN AC-001, Revision 2, "Daily Turbine Test," performed on August 31, 1988
- o STS E8-004, Revision 5, "RCS Water Inventory Balance," performed on August 31, 1988
- o STS RE-012, Revision 1, "QPTR Determination," performed on August 31, 1988

Selected NRC inspector observations are discussed below:

Surveillance STS RE-006 was observed twice. During the procedure, the operators were to reduce reactor coolant average temperature by approximately 3.5°F while maintaining the temperature difference between the hot and cold legs nearly constant. After data is collected, the plant is returned to normal temperatures. The first performance was on August 8, 1988. The operators did not maintain the hot and cold leg temperature difference nearly constant. This required that the surveillance be terminated and reformed. On August 9, 1988, the surveillance was accomplished. The NRC inspectors concluded that the difficulty that the operators had on the first attempt was training related. The plant was operating in an unusual condition and the operators did not initially anticipate plant response correctly. The NRC inspector suggested that when unusual surveillances and operations are expected, the operator crews have an opportunity to rehearse on the simulator. The NRC inspectors did not find fault with the procedure or crew professionalism. The operator crew discussed their procedural actions before beginning the various portions of the procedure.

No violations or deviations were identified.

6. Monthly Maintenance Observation (62703)

The NRC inspectors observed maintenance activities performed on safety-related systems and components to verify that these activities were conducted in accordance with approved procedures, TS, and applicable industry codes and standards. The following elements were considered by the NRC inspectors during the observation and/or review of the maintenance activities:

- o COs were met and, where applicable, redundant components were operable.
- o Activities complied with adequate administrative controls.
- o Where required, adequate, approved, and up-to-date procedures were used.

- o Craftsmen were qualified to accomplish the designated task and technical expertise (i.e., engineering, health physics, operations) was made available when appropriate.
- o Replacement parts and materials used were properly certified.
- o Required radiological controls were implemented.
- o Fire prevention controls were implemented where appropriate.
- o Required alignments and surveillances to verify postmaintenance operability were performed.
- o Quality control hold points and/or checklists were used when appropriate and quality control personnel observed designated work activities.

Selected portions of the maintenance activities accomplished on the work requests (WR) listed below were observed and related documentation reviewed by the NRC inspector:

<u>No.</u>	<u>Activity</u>
WR 51447-88	Fuel oil supply filter 1 year maintenance
WR 03107-88	IEB 88-05, flange testing on Spool KJ01-S015
WR 60615-88	Preventive maintenance on Isolation Damper GED045
WR 51634-88	Semiannual lubrication of self-cleaning Strainer-Motor DFEF02B
WR 51626-88	Annual maintenance of Centrifugal Charging Pump PBG05B
WR 51680-88	Semiannual oil change of Centrifugal Charging Pump PBG05B

Selected NRC inspector observations are discussed below:

The portions of WR 51447-88 that were observed included postmaintenance operation of the "B" diesel generator. The NRC inspector noted that as the workers encountered problems that were not covered by their procedures, they stopped work until the procedural problems were resolved.

No violations or deviations were identified.

7. Onsite Event Followup (92700)

The NRC inspectors performed onsite followup of nonemergency events that occurred during this report period. The NRC inspectors reviewed control room logs and discussed the events with cognizant personnel. The NRC inspectors verified that the licensee had responded to the events in accordance with procedures and had notified the NRC and other agencies as required in a timely fashion. The events that occurred during this report period are listed in the table below. The NRC inspectors will review the licensee event reports for these events and will report any findings in a subsequent NRC inspection report.

<u>Date</u>	<u>Event*</u>	<u>Plant Status</u>	<u>Cause</u>
8/2/88	CRVIS	Mode 1 (100 percent)	Broken tape on GK AI-3
8/25/88	CPIS/CRVIS	Mode 1 (100 percent)	Failed low bi-stable on GT RE-32

*Event

CRVIS - Control room ventilation isolation signal

CPIS - Containment purge isolation signal

In addition to the above events, the NRC inspector was informed that a 10 CFR Part 21 report was issued by a licensee vendor. On August 16, 1988, the Anchor/Darling Valve Company informed the NRC of a problem related to the cracking of slides used in 4-way valves furnished on actuators for main steam isolation valves. This information was reported to the NRC in accordance with 10 CFR Part 21. This report was issued as a result of information received from Wolf Creek. It appears that, to date, Wolf Creek is the only licensee to experience problems with 4-way slides. Wolf Creek became aware of the problem in 1985 and issued Licensee Event Report 85-075 on December 10, 1985, discussing this issue. The problem has been corrected at Wolf Creek.

No violations or deviations were identified.

8. Engineered Safety Features (ESF) Walkdown (71710)

The NRC inspectors verified the operability of an ESF system by walking down selected accessible portions of the system. The NRC inspectors verified valves and electrical circuit breakers were in the required position, power was available, and valves were locked where required. The NRC inspectors also inspected system components for damage or other conditions that could degrade system performance.

The ESF system walked down during this inspection period was the "High Pressure Coolant Injection System (BG)," and the primary documents utilized by the NRC inspectors during the walkdown are listed below:

- o M-12EM02, "Piping and Instrumentation Diagram High Pressure Coolant Injection System"
- o M-12BN01, "Piping and Instrumentation Diagram Borated Refueling Water Storage System"
- o M-12BG01, "Piping and Instrumentation Diagram Chemical and Volume Control System"
- o M-12BG03, "Piping and Instrumentation Diagram Chemical and Volume Control System"
- o CKL BG-130, Revision 7, "Chemical and Volume Control System Switch and Breaker Lineup"
- o CKL EM-120, Revision 7, "Safety Injection System Lineup Checklists"
- o STS BG-001, Revision 3, "Boron Injection Flow Path Verification"

Several other support documents and procedures were also utilized by the NRC inspectors during this system walkdown.

No violations or deviations were identified.

9. New Fuel Receipt (60705)

The NRC inspectors observed randomly selected portions of the handling, receipt inspection, and storage of the 52 new fuel assemblies received by the licensee. The handling, receipt inspection, and storage of these assemblies were performed in accordance with licensee Procedure FHP 01-001, Revision 9, "New Fuel Receipt." The NRC inspectors reviewed this procedure for technical adequacy and required approvals. The NRC inspectors periodically reviewed the following procedures which are used by the licensee to verify operability of fuel handling equipment prior to use:

- o FHP 03-007, Revision 6, "Spent Fuel Pool Bridge Crane Operating Instructions"
- o FHP 03-008, Revision 6, "Cask Loading Crane Operating Instruction"
- o FHP 03-009, Revision 2, "New Fuel Elevator Operating Instructions"

No violations or deviations were identified.

10. Inservice Inspection Data Review and Evaluation (73755)

The inservice inspection (ISI) summary report for the second refueling outage at Wolf Creek was reviewed in the NRC regional office. A sample of supporting records were identified by the NRC inspector and forwarded to

the region for additional review. The sample included visual inspection of one weld, penetrant testing of three welds, ultrasonic testing of two welds and two repair/replacement packages.

No violations or deviations were identified.

11. Physical Security Verification (71881)

The NRC inspectors verified that the facility physical security plan (PSP) is being complied with by direct observation of licensee facilities and security personnel.

The NRC inspectors by observation of randomly selected activities verified that search equipment is operable, the protected area barriers and vital area barriers are well maintained, access control procedures are followed, and appropriate compensatory measures are followed when equipment is inoperable.

No violations or deviations were identified.

12. Radiological Protection (71709)

By performing the following activities, the NRC inspectors verified that radiologically related activities were controlled in accordance with the licensee's procedures and regulatory requirements:

- o Reviewed documents such as active radiation work permits and the health physics shift turnover log.
- o Observed personnel activities in the radiologically controlled area (RCA) such as:
 - . Use of the required dosimetry equipment,
 - . "Frisking out" of the RCA, and
 - . Wearing of appropriate anti-contamination clothing where required.
- o Inspected postings of radiation and contaminated areas.
- o Discussed activities with radiation workers and health physics supervisors.

No violations or deviations were identified.

13. Exit Meeting

The NRC inspectors met with licensee personnel to discuss the scope and findings of this inspection on September 2, 1988.