

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-482/86-28

LP: NPF-42

Docket: 50-482

Licensee: Kansas Gas and Electric Company (KG&E)
Post Office Box 208
Wichita, Kansas 67201

Facility Name: Wolf Creek Generating Station (WCGS)

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

Inspection Conducted: November 1 to 30, 1986

Inspectors: James E. Cummins
J. E. Cummins, Senior Resident Inspector,
Operations, (pars. 4, 5, 6, 7, 8, 9, and 11)

12/08/86
Date

Bruce L. Bartlett
B. L. Bartlett, Resident Reactor Inspector,
Operations, (pars. 2, 3, 4, 6, 7, and 9)

12/8/86
Date

R. P. Mullikin for
R. P. Mullikin, Project Engineer
(pars. 3, 8, and 10)

12/19/86
Date

Approved: D. R. Hunter
D. R. Hunter, Chief, Project Section B
Reactor Project Branch

12/19/86
Date

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Inspection Summary

Inspection Conducted November 1-30, 1986 (Report 50-482/86-28)

Areas Inspected: Routine, unannounced inspection including plant status; followup of previously identified NRC items; operational safety verification; monthly surveillance observation; monthly maintenance observation; onsite event followup; licensee event report review, IE Bulletin followup; fire brigade/fire watch training; and 10 CFR Part 21 followup.

Results: Within the ten areas inspected, one violation was identified (failure to comply with surveillance requirements, paragraph 5).

DETAILS

1. Persons Contacted

Principal Licensee Personnel

*B. D. Withers, President, Wolf Creek Nuclear Operating Company
+*J. A. Bailey, Interim Site Director
+*F. T. Rhodes, Plant Manager
+*G. D. Boyer, Deputy Plant Manager
+*R. M. Grant, Director-Quality
+ C. M. Estes, Superintendent of Operations
*M. D. Rich, Superintendent of Maintenance
+*M. G. Williams, Superintendent of Regulatory, Quality, and
Administrative Services
*O. L. Maynard, Manager Licensing
+*K. Peterson, Licensing
+*G. Pendergrass, Licensing
+ W. M. Lindsay, Supervisor Quality Systems
+*C. J. Hoch, Quality Assurance (QA) Technologist
+*W. J. Rudolph, QA Manager-WCGS
J. W. Johnson, Chief of Security
H. Chernoff, Licensing Engineer
J. Ives, Site Health Physicist
V. MacTaggart, Results Engineering Supervisor
+ R. L. Logsdon, Site Chemist
+ J. L. Blackwell, Fire Protection Coordinator
*J. Stokes, Procurement & Materials Manager
*T. M. Damashek, QA Systems
G. W. Reeves, QC Supervisor
*C. G. Patrick, Superintendent of Quality Evaluations
+ J. A. Zell, Nuclear Training Manager
+ C. E. Parry, Quality Engineering Supervisor
+ W. Gaul, Radwaste Engineer
+ C. L. Palmer, Chemistry Supervisor
+ M. H. Megehee, Compliance Engineering
+ R. C. Richardson, Radwaste Coordinator
+ K. M. Thrall, Senior Engineering Specialist
+ A. A. Freitag, Nuclear Plant Engineering Manager-WCGS
+ M. Nichols, Plant Support Superintendent
+ J. Ives, Site Health Physicist
+ B. McKinney, Technical Support Superintendent

NRC Personnel

+*J. E. Cummins, Senior Resident Inspector
+*B. L. Bartlett, Resident Inspector

- + R. P. Mullikin, Project Inspector
- +*G. A. Pick, Reactor Engineer
- + J. B. Nicholas, Radiation Specialist

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 November 21, 1986.

*Denotes those personnel in attendance at the exit meeting held on December 5, 1986.

2. Plant Status

During this report period, the plant was in its first refueling outage. Fuel assemblies were removed from the reactor to the spent fuel pool where the fuel shuffle occurred and then the fuel for the next cycle was placed in the reactor.

3. Followup On Previously Identified NRC Items

(Closed) Violation (482/8530-03): Flow Orifice Installed Backwards

The NRC inspectors verified that Orifice Plates EG FE-64, 83, and 89 were reversed and installed properly. In addition, the NRC inspectors verified that maintenance personnel have been trained on the proper orientation of orifice plates, that maintenance engineers have been trained to specify proper orientation and that quality engineers have been instructed to verify that work instructions provide for proper orientation. This violation is closed.

(Closed) Open Item (482/8621-03): Licensed Operator Requalification Exam Regrade

This item tracked the licensee's commitment to regrade all exams taken in the 1986 requalification exam to insure correct grading. The licensee has performed this task. This open item is closed.

4. Operational Safety Verification

The NRC inspectors verified that the facility is 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 reviewing facility records. The NRC inspectors, by observation of randomly selected activities and interview 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 the high pressure coolant injection (charging) system. The NRC inspectors also visually inspected safety components for leakage, physical damage, and other impairments that could prevent them from performing their designed functions.

5. Monthly Surveillance Observation

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:

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

- . STS BG-100A, Revision 1, "Centrifugal Charging System 'A' Train Inservice Pump Test," conducted on November 11, 1986
- . STS EF-100A, Revision 0, "ESW System Inservice Pump 'A' Test," conducted on November 15, 1986
- . STS EJ-100A, Revision 0, "RHR System Inservice Pump 'A' Test," conducted on November 14, 1986
- . STS KE-002, Revision 5, "CTMT Aux Hoist Refueling Test," (Section 5.3 only) conducted on October 27, 1986
- . STS KE-001, Revision 5, "Refueling Machine Op Test," conducted on November 1, 1986

- . STS EM-202, Revision 1, "Safety Injection System Inservice Valve Test" (EM HV-8835), conducted on November 18, 1986
- . STS EJ-100B, Revision 0, "RHR System Inservice Pump B Test," conducted on November 24, 1986
- . STS MT-016, Revision 3, "Standby Diesel Generator Inspection" (KKJ01B), conducted starting November 1, 1986

Selected NRC inspector observations are discussed below:

During a review of randomly selected surveillance procedures that had been completed and transmitted to the records vault, the NRC inspector observed that Steps 6.3, 6.4, and 6.5 of Surveillance Procedure STS MT-016, Revision 3, "Standby Diesel Generator Inspection," had not been signed, as required. In addition Section 5.6.2 of Administrative procedure ADM 02-300, "Surveillance Testing," states that, "Each reviewer of test results shall ensure that each test package is complete including all test data/signatures required by the subject test." This failure of designated personnel (test performer, supervisor, and QC supervisor/lead) to sign the required procedure steps and of the reviewers to identify and correct the oversight, as required by the above procedures is an apparent violation (482/8628-01). The NRC inspector did not identify any other discrepancies during this review.

6. Monthly Maintenance Observation

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

- . LCOs were met and, where applicable, redundant components were operable.
- . Activities complied with adequate administrative controls.
- . Where required, adequate, approved, and up-to-date procedures were used.
- . Craftsmen were qualified to accomplish the designated task and technical expertise (i.e., engineering, health physics, operations) was made available when appropriate.
- . Replacement parts and materials being used were properly certified.
- . Required radiological controls were implemented.
- . Fire prevention controls were implemented where appropriate.

- . Required alignments and surveillances to verify post maintenance operability were performed.
- . 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>Title</u>
. WR 07178-85,	"Limitorque Operator for EM HV-8814B, Rework Limitorque Operator and Perform Scheduled Maintenance."
. WR 01161-86,	"Implemented PMR 1382 for Snubbers on Pressure Switches-Replacement of Pressure Switch"
. WR 03017-86,	"Cutler Hammer Switches, Implement PMR 1316, Revision 1, Pushrod Replacement for Switches EN HIS-1"
. WR 03951-86,	"Implement PMR 1722 Wiring Change on Limitorque Operator, EM VH 8814B"
. WR 04272-86,	"BG-017-GCB-3, Due to Modifications IAW PMR 00991 a Hydrostatic Test Is Required"
. WR 04516-86,	"AB01-R520-145Q, Remove and Replace the Above to Allow for ISI Injection"
. WR 04761-86,	"Check Valve/EP V8818D, Install Freeze Seal Downstream of Valve EP V8818D on Line 32-BCA-6"
. WR 04863-86,	"BG V201-Seal Injection Throttle Valve, Remove Piping Downstream of BG V201 to Investigate Foreign Objects"
. WR 52520-86,	"Semi-Annual Maintenance on D/G Starting Air Compressor, CKJ01C"

No violations or deviations were identified.

7. Onsite Event Followup

The NRC inspector performed onsite followup of nonemergency events that occurred during this report period. The NRC inspector (when available) observed control room personnel response, observed instrumentation indicators of reactor plant parameters, reviewed logs and computer printouts, and discussed the event with cognizant personnel. The NRC inspector verified the licensee had responded to the event in accordance with procedures and had notified the NRC and other agencies as required in

a timely fashion. Engineered safety feature actuations that occurred during the report period are listed in the table below. Where applicable, the NRC inspector will review the LER for each of these events and will report any findings in subsequent NRC inspection reports.

<u>Date</u>	<u>Event*</u>	<u>Plant Status</u>	<u>Cause</u>
11/14/86	CRVIS	Mode 6	Chlorine Monitor Failed-Root Cause Unknown

*Event

CRVIS - Control Room Ventilation Isolation Signal

Selected NRC inspector observations are discussed below:

- . The CRVIS that occurred on November 14, 1986, was caused by the failure of Chlorine Monitor GK AITS-2. The instrument technicians could not identify a root cause for the failure. The chlorine monitor has been placed back in service and as of November 30, 1986, the failure has not reoccurred.

No violations or deviations were identified.

8. Licensee Event Report (LER) Review

During this inspection period, the NRC inspectors performed followup on selected Wolf Creek LERs. The LERs were reviewed to ensure:

- . Corrective action stated in the report has been properly completed or work is in progress.
- . Responses to the events were adequate.
- . Responses to the events met license conditions, commitments, or other applicable regulatory requirements.
- . The information contained in the report satisfied applicable reporting requirements.
- . That any generic issues were identified.
- . The report conformed to the guidelines contained in NUREG-1022 and Supplements 1 and 2.

(Closed) LER 86-028: "Technical Specification Violation-Failure to Test Sealed Sources"

This LER reported two instances where the requirements of TS 3.7.9 were not complied with. On May 22, 1986, during an internal audit, it was

determined that a sealed source had not been tested as required every six months. This event was caused when licensee personnel, who incorrectly categorized this source as being "in storage" and removed it from the list of sources requiring a leak test every six months. Licensee personnel put the source back on the list when the error was identified and verified through records that all other sources had been tested, as required, and also made it a requirement that the site health physicist had to approve removal of any test sources from the list.

The second event occurred on April 22, 1986, when an incore neutron detector was installed prior to being tested as required by the TS. The licensee placed tags on the storage cabinet for the fission detector instructing warehouse personnel to contact reactor engineering and health physics prior to issuing the detectors. This LER and the related Defect Deficiency Report (DDR) 86-043 were provided as required reading for cognizant personnel. The NRC inspector reviewed the required reading signoff sheets for these items.

(Closed) LER 86-051: "Technical Specification Violation-Use of Improperly Adjusted Spent Fuel Pool Crane"

On September 23, 1986, licensee personnel determined during performance of a routine surveillance that the spent fuel crane overload limit was set 200 pounds greater than the TS (3.9.7) specified 2250 pounds. Contrary to the TS, new fuel was moved between September 23 and 25, 1986, with the crane overload limit set wrong. Discussion with the licensee determined that the overload limit apparently had not been challenged. The NRC inspector verified by review that Procedure STS KE-003, Revision 4, "Spent Fuel Pool Cranes Surveillance Test," had been revised to clarify the proper method for measuring and setting the overload limit stop.

(Closed) LER 86-013: "Technical Specification Violation-Due to Personnel Error"

On March 14, 1986, a containment depressurization was performed with one of the two required containment atmosphere radiation monitors inoperable due to it having been left in bypass. The redundant radiation monitor was operable at all times during this event and no release limits were exceeded. This LER was assigned as required reading for licensed personnel. The NRC inspector verified by reviewing the required reading signature sheets that cognizant personnel had been made aware of this event.

(Closed) LERs 85-052, 85-061, 85-081, 85-085, and 86-002: "Engineered Safety Features Actuation-Control Room Ventilation Isolation"

On July 12, 1985; September 14, 1985; five times between November 26 through December 13, 1985; December 18, 1985; and January 18, 1986; a control room ventilation isolation occurred due to a chlorine monitor signaling high chlorine level in the outside air makeup to the control

building ventilation system. The isolation occurred (except for LER 85-085) due to breakage of the chemically sensitive paper tape used to detect chlorine in the monitor analysis unit. LER 85-085 was caused by the paper tape bunching up resulting in a blown fuse. The NRC inspector reviewed the LERs and the licensee's defect/deficiency reports for each occurrence. The licensee could not determine a specific cause for the tape problem but did replace two monitors with spares and cleaned the tape drive mechanisms. Although the root cause could not be determined the occurrences of this problem have ceased. The NRC inspector will pursue this issue further if this problem reoccurs.

(Closed) LER 86-046: "Error During Surveillance Testing Causes Control Room Ventilation Isolation"

On September 4, 1986, during surveillance testing of a control room air intake radiation monitor, GK RE-04, an unexpected "process radiation monitor failure" alarm annunciated in the control room. The source of the alarm was determined to be a check source test failure on GK RE-04 due to the monitor's signal cable being disconnected for testing. When restoring the system to test configuration, a typographical error was made in a keyboard command. This error indicated that testing was to be performed on redundant control room air intake radiation monitor GK RE-05 which was not in the required bypass position. The licensee provided this LER as required reading for I&C personnel. The NRC inspector reviewed the DDR as well as documentation of the required reading being performed.

No violations or deviations were identified.

9. IE Bulletin (IEB) Followup

The NRC inspector by review of documents and discussions with licensee personnel, verified that the IEBs discussed below had been reviewed and appropriately acted upon by the licensee.

(Closed) IE Compliance Bulletin 86-03, "Potential Failure of Multiple ECCS Pumps Due to Single Failure of Air-Operated Valve in Minimum Flow Recirculation Line"

The purpose of this IEB was to inform the licensee of a design deficiency involving the minimum flow recirculation paths for emergency core cooling system (ECCS) pumps which could allow a single failure to result in a common-cause failure of all ECCS pumps in a system and to request certain licensee actions.

The licensee's response to this IEB (KMLNRC 86-209 dated November 7, 1986) stated, in part, "... the WCGS design configuration of the ECCS pumps and their recirculation paths is not vulnerable to a single failure in the minimum flow recirculation line . . . that could cause a failure of more than one train."

The NRC inspector verified through review of the licensee's response, review of piping and instrumentation diagrams, review of surveillance procedures and field inspections that the design configuration for the ECCS pumps appears to meet the single failure criterion in General Design Criterion (GDC) 35 (10 CFR Part 50, Appendix A).

In addition, the NRC inspector verified that the following systems appeared to comply with the intent of this IEB:

- . Auxiliary feedwater
- . Essential service water
- . Containment spray
- . Main feedwater

This IEB is closed.

(Closed) IEB 86-04, "Defective Teletherapy Timer That May Not Terminate Treatment Dose"

This IEB was reviewed and determined not to be applicable to WCGS. This IEB is closed.

10. Fire Brigade/Fire Watch Training

The NRC inspector reviewed the current control room list of qualified fire brigade and fire watch members. Six individuals from each list were selected to assure that their required training was current. The computer printouts of training received showed that training commitments for these individuals were met.

No violations or deviations were identified.

11. 10 CFR Part 21 Report Followup

The NRC inspector by review of documents and discussions with licensee personnel, verified that the 10 CFR Part 21 reports discussed below had been reviewed and appropriately acted on by the licensee.

(Closed) Cracked Welds in Generator Coil Guards, dated March 6, 1985.

This 10 CFR Part 21 report identified a potential problem with cracked welds on the conical baffle section of the coil guards for the emergency diesel generators. The licensee issued WRs to inspect and repair, if necessary, the welds reported by this 10 CFR Part 21 Report. The NRC inspector verified by review of the completed documents listed below that the licensee performed the recommended inspections and had taken appropriate corrective action.

- . WR 06001-85, inspection of welds in the conical baffle section of the coil guards on Standby Diesel Generator KKJ01A.

- . WR 06704-85, repair cracked welds identified on WR 06001-85. No cracked welds needing repairs were identified.
- . WR 06002-85, inspection of welds in the conical baffle section of the coil guards on Standby Diesel Generator KKJ01B.
- . WR 06706-85, repair cracked welds identified during the inspection performed on WR 06002-85. One cracked weld was identified and repaired.

The four 10 CFR Part 21 reports discussed below have previously been reported, reviewed, and closed as 10 CFR Part 50.55(e) reports by the licensee. These items have previously been reviewed and closed by NRC inspectors. The documents that documented these reviews and closures are identified in the discussion for each of the four 10 CFR Part 21 reports.

- . (Closed) Limitorque Operator Motor Pinion/Worm Shaft, dated November 11, 1986. This 10 CFR Part 21 report was reported as 10 CFR Part 50.55(e) Report No. 53564-K146 by the licensee. This item was discussed and made an open item (482/8455-09) in NRC Inspection Report 50-482/84-55, which was closed in NRC Inspection Report 50-482/85-04.
- . (Closed) Design Deficiency in Field-Run Cables to Valcor Solenoid Valves, dated March 19, 1984. This 10 CFR Part 21 report was reported as 10 CFR Part 50.55(e) Report No. 53564-K127 by the licensee. This item was discussed and closed in NRC Inspection Report 50-482/84-49.
- . (Closed) Material May Be Defective in Workmanship, dated May 15, 1984. This 10 CFR Part 21 Report was reported as 10 CFR Part 50.55(e) Report No. 53564-K114 by the licensee. This item was discussed and closed in NRC Inspection Report 50-482/84-49.
- . (Closed) Valve Stem Bushing Too Loose on Steam Valve Preventing Closing, dated April 9, 1984. This 10 CFR Part 21 Report was reported as 10 CFR Part 50.55(e) Report No. 53564-K156 by the licensee. This item was discussed and closed in NRC Inspection Report 50-482/84-49.

No violations or deviations were identified.

12. Exit Meeting

The NRC inspectors met with licensee personnel to discuss the scope and findings of this inspection on December 5, 1986. The NRC inspectors also attended entrance/exit meetings of the NRC region based inspectors identified below:

<u>Inspection Period</u>	<u>Lead Inspector</u>	<u>Area Inspected</u>	<u>Inspection Report No.</u>
11/17-21/86	G. Pick	Surveillance Procedure Review	86-26
11/03-07/86	L. Gilbert	Inservice Inspection	86-27
11/17-21/86	R. Baer	Radiological Control	86-30
11/17-21/86	B. Nicholas	Liquid Radwaste	86-23
11/17-21/86	R. Mullikin	Fire Protection LERs	86-28