

APPENDIX B

US NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-482/86-17

License Permit: NPF-42

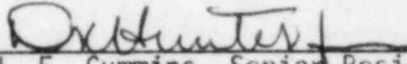
Docket: 50-482

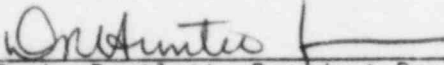
Licensee: Kansas Gas and Electric Company (KG&E)  
Post Office Box 208  
Wichita, Kansas 67201

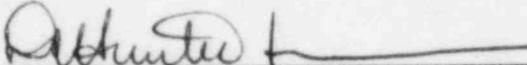
Facility Name: Wolf Creek Generating Station (WCGS)

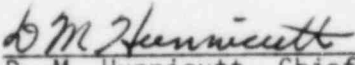
Inspection At: Wolf Creek Site, Coffey County, Burlington, Kansas

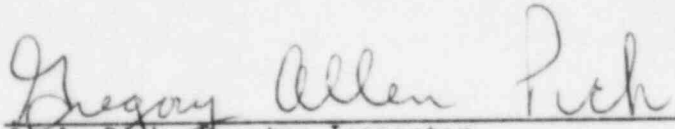
Inspection Conducted: July 6 to August 2, 1986


Inspectors:  10/21/86  
J. E. Cummins, Senior Resident Inspector, Date  
Operations  
(pars. 3, 5, 7, 8, and 13)

 10/21/86  
B. L. Bartlett, Resident Reactor Inspector, Date  
Operations  
(pars. 3, 4, 5, 6, 7, 8, 11, 12, and 13)

 10/21/86  
R. P. Mullikin, Project Inspector Date

 10/20/86  
D. M. Hunnicutt, Chief, Operations Section Date  
Reactor Safety Branch  
(pars. 9 and 10)

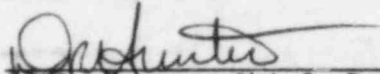
 10/20/86  
G. A. Pich, Reactor Inspector Date  
(pars. 9 and 10)



J. M. Sharkey, Inspection Specialist  
(pars. 4, 5, 6, and 8)

10/21/86  
Date

Approved:



D. R. Hunter, Chief, Project Section B  
Reactor Projects Branch

10/21/86  
Date

Inspection Summary

Inspection Conducted July 6 to August 2, 1986 (Report 50-482/86-17)

Areas Inspected: Routine, unannounced inspection including plant status; followup on previously identified NRC items; LER review; operational safety verification; engineered safety features system walkdown; onsite followup of events; monthly surveillance observation; QA program annual review; design changes; core thermal power evaluation; and radwaste processing.

Results: Within the 11 areas inspected, one violation was identified (failure to perform activities in accordance with specified procedure, paragraph 4).

DETAILS

1. Persons Contacted

Principal Licensee Personnel

- G. L. Koester, Vice President-Nuclear
- +\*J. A. Bailey, Interim Site Director
- + F. T. Rhodes, Plant Manager
- \*G. D. Boyer, Deputy Plant Manager
- + R. M. Grant, Director-Quality
- 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, QA Technologist
- +\*W. J. Rudolph, QA Manager-WCGS
- + C. G. Patrick, Superintendent of Quality Evaluations
- + C. E. Parry, Superintendent of Quality Engineering
- +\*A. A. Freitag, Manager Nuclear Plant Engineering-WCGS
- + D. A. Liston, Nuclear Plant Engineering
- M. Megehee, Compliance Engineer
- B. McKinney, Superintendent of Technical Support
- + P. E. Nichols, QA-Wichita
- + L. W. Stevens, ISEG
- + C. F. Kesinger, HP Training Coordinator
- M. Isom, Health Physics Supervisor-Radwaste
- R. C. Richardson, Radwaste Coordinator
- J. Ives, Jr., Manager Health Physics
- \*G. A. McClelland, QA Auditor
- \*S. A. Henry, Chemistry Supervisor
- \*J. Hawthorne, Chemistry Supervisor

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 August 4, 1986.

+Denotes those personnel in attendance at the exit meeting held on July 18, 1986.

2. Plant Status

The plant operated in Mode 1 during this inspection period except during the time periods described below:

On July 24, 1986, the plant was shut down to Mode 3 to repair a stator cooling water leak in the main generator. During the controlled shutdown, the reactor tripped at approximately 13 percent power due to a lo-lo steam generator water level condition. The plant was returned to Mode 1 on July 26, 1986.

3. Followup on Previously Identified NRC Items

(Closed) Violation (482/8526-02): Temporary changes not incorporated in procedure as required.

The NRC inspector verified by review that the licensee's surveillance procedure cover sheet has been revised to require that the test performer verify that the latest revision of the surveillance test is being used. This item is closed.

(Closed) Violation (482/8535-05): Failure to follow housekeeping requirements.

The licensee took immediate action and cleaned up the areas which created the housekeeping concerns identified in this violation. On subsequent walkdowns, the NRC inspectors have observed that housekeeping was being maintained as required. This violation is closed.

(Closed) Violation (482/8538-01): Failure to establish procedures for certain activities that could affect the performance of safety-related equipment.

The NRC inspector, by review of documents and plant walkdowns, verified the following licensee actions related to this violation:

- o Section 5.3.2 of Administrative Procedure ADM 01-034, Revision 8, "Housekeeping and Cleanliness Control," has been revised to state that hoist hooks shall be fully raised and ladders returned to their designated storage location.
- o Permanent storage brackets for ladders have been installed at seventeen locations in the plant and have been identified by signs.
- o Storage of ladders was discussed at the safety committee meeting held on April 2, 1986. Safety meetings were used to train employees in the use of ladders.

During subsequent plant walkdowns, the NRC inspectors have not identified any further instances where ladders and hoists could have affected the operation of safety-related equipment. This violation is closed.

(Closed) Violation (482/8523-01): Failure to follow plant procedures.

The NRC inspector reviewed the letter which was issued to all organizations which may be called upon to perform work in the plant and verified that it was discussed with the appropriate personnel. In addition, since this violation was first identified no other similar violations have been discovered. This violation is closed.

(Closed) Violation (482/8530-01): Test port not reclosed in accordance with procedure.

The NRC inspector reviewed five randomly selected procedures which remove plugs in HVAC test ports and verified the procedures included clear requirements to reinstall plugs in test ports. In addition, field inspections by NRC inspectors have failed to identify any similar violations to date. This violation is closed.

(Closed) Violation (482/8530-02): Inadequate procedure.

The NRC inspector reviewed STS IC-275A and STS IC-275B and verified that the requirement for damper movement had been removed. In addition, the sample results of the containment atmosphere drawn at 2100 CST on July 26, 1985, was reviewed for abnormal results. This violation is closed.

#### 4. Review of Licensee Event Reports

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

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

The following LERs were reviewed and closed.

- o 482/85-041-00, "ESF Actuation and Reactor Trip"
- o 482/85-042-00, "Engineered Safety Features Actuation and Reactor Trip"

- o 482/85-043-00, "Feedwater Isolation and Auxiliary Feedwater Actuation"
- o 482/85-044-00, "ESF Actuation-Feedwater Isolation, Auxiliary Feedwater Actuation, Steam Generator Blowdown and Sample Isolation"
- o 482/85-045-00, "Reactor Trip and Engineered Safety Features Actuation"
- o 482/85-046-00, "Engineered Safety Features Actuation and Reactor Trip"
- o 482/86-019-00, "Technical Specification Required Shutdown Due To Unidentified Reactor Coolant System Leakage"
- o 482/86-033-00, "Technical Specification-Late Verification of Fuel Oil Properties"

The NRC inspectors had the following comments:

- o Applicable portions of Administrative Procedure ADM 01-033, "Instructions Describing Reportability, Review, and Documentation of Licensee Event Reports (LERs), and Defect Deficiencies," Revision 15, were reviewed for agreement with LER reporting requirements.
- o In general, the quality and adequacy of the licensee's LERs has been improving. However, minor deficiencies were noted in the LER information requirements. For example, five out of six LERs reviewed did not discuss whether any previous similar events at the plant were known to the licensee. These deficiencies were discussed with the licensee during this inspection period.
- o During an inspection of control room area radiation monitor instrumentation and chart recorders while following up on LER 482/86-019-00, the NRC inspector noted that Chart Recorder GT RR-58, "Unit Ventilation Effluent Release Rate," and GH RR-51, "Radwaste Building Effluent Release Rate," were not scaled, but did have a tag saying 0 to 100. None of the licensed operators questioned knew what units the chart recorders used. Instrumentation and control informed the NRC inspector that the chart recorders were calibrated from 10E1 to 10E13 micro Ci/sec. The licensee committed to install the correct scales.
- o On July 18, 1986, during a review of completed surveillances related to LER 482/86-033-00, the NRC inspector observed that STS CH-008A, "Emergency Diesel Fuel Storage Tank," performed on June 1, 1986, was Revision 3 and that the data sheet for STS CH-008B, "Emergency Diesel Fuel Storage Tank," had been used. The plant safety review committee (PSRC) document control records showed that

STS CH-008A, Revision 4 had been issued on May 14, 1986. The records review indicated that the appropriate tank was sampled and that the sample data met the TS criteria. This failure of the test performer to use the correct procedure and revision, even though he had signed off in Section 1 of the cover sheet that he had used the correct procedure and revision, and failure of the surveillance post-performance review cycle to discover this error is a violation. (482/8617-01)

5. 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 and direct interview, verified the physical security plan was being implemented in accordance with the security plan and that radiation protection activities were controlled.

By observing valve position, electrical breaker position, and control room indication, the NRC inspectors confirmed the operability of the residual heat removal system and the emergency diesel generators.

The NRC inspectors also visually inspected safety components for leakage, physical damage, and other impairments that could prevent them from performing their designed function.

No violations or deviations were identified.

6. Engineered Safety Features (ESF) System Walkdown

The NRC inspectors verified the operability of ESF systems by walking down selected accessible portions of the systems. 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 and the documents utilized by the NRC inspectors during the walkdown are listed below:

<u>System</u>	<u>Documents</u>
Essential Service Water (EF)	Drawing M-K2EF01, Revision 14, ESW P&ID(Q)
	Drawing M-02EF01, Revision 10, ESW P&ID(Q)

Drawing M-02EF02, Revision 12, "ESW P&ID(Q)"

STS EF-001, Revision 3, "Essential Service Water Valve Check"

Checklist CKL EF-120, Revision 8, "Essential Service Water Valve, Breaker, and Switch Lineup"

No violations or deviations were identified.

7. Onsite Followup of Event

The NRC inspectors performed onsite followup of a reactor trip that occurred on July 24, 1986, due to a lo-lo steam generator water level condition. The NRC inspectors reviewed logs and computer printouts and discussed the trip with cognizant personnel. The NRC inspectors verified the licensee had responded to the event in accordance with procedures and had notified the NRC as required in a timely fashion. The reactor trip occurred at approximately 13 percent power during a controlled reactor plant shutdown to Mode 3 to support maintenance on the main turbine generator. The lo-lo level in the steam generator was caused while the steam generator feedwater was being transferred from the main feedwater regulator valves to the bypasses. The licensee has experienced this same problem during previous plant startups and shutdowns and is evaluating methods to eliminate the problem. The subsequent startup on July 26, 1986, was accomplished with no significant problems.

No violations or deviations were identified.

8. 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 technical specifications (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 Technical Specification limiting conditions for operation (LCO) were satisfied.



- o Test data was accurate and complete. Where appropriate, the NRC inspectors performed independent calculations of selected test data to verify their 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 STN IC-500, Revision 0, "Channel Calibration Radwaste Building Corridor Basement Area Radiation Monitor SDRE01," performed July 23, 1986
- o STS RE-006, Revision 2, "EOL Core MTC Measurement," performed July 11, 1986
- o STS SE-001, Revision 5, "Power Range Adjustment to Calorimetric," performed July 11, 1986
- o STS SE-001, Revision 6, "Power Range Adjustment to Calorimetric," performed July 27, 1986
- o STS BB-004, Revision 4, "RCS Water Inventory Balance," performed July 29, 1986

No violations or deviations were identified.

9. Quality Assurance (QA) Program Annual Review

a. QA Program Implementation

During a previous inspection (IR 50-482/86-16) the NRC inspector had reviewed the WCGS onsite and offsite review committees. The licensee had a method for informing supervisory personnel of new regulatory requirements by routing to them Inspection and Enforcement Bulletins (IEB), Generic Letters (GL), Information Notices (IN), and so forth.

During this period, the NRC inspector examined the implementation of the QA audit program and their records program.

b. Audit Program

Through discussions with licensee personnel, review of the essential elements manual and review of summary documentation, an understanding of the audit program was obtained.

The basis of the audit program was the essential elements manual, which summarizes into 39 topics (essential elements) the licensee's commitments and/or requirements reflected in 10 CFR Part 50, ANSI 18.7 (Quality Assurance for the Operational Phase of Nuclear Power Plants), WCGS TS, and the Final Safety Analysis Report (FSAR). The essential elements are subdivided into attributes which can be objectively evaluated.

To audit a plant area, the auditor prepared the audit plan from the essential elements manual type of concern. Upon completion of the audit, if any discrepancies existed, methods existed that allowed execution of corrective actions as appropriate. Quality assurance audit frequencies, as required by TS, were on a biennial schedule. The audits were planned on an annual basis; however, if the essential element was voluminous, the audit may have been scheduled in segments over a two year period to assure that the minimum audit requirements would be met. In addition to the mandatory audits, lower tiered audits and surveillances were scheduled to support the main audit.

The following audit packages were reviewed:

<u>Audit No.</u>	<u>Title</u>
TE 50140-K116	Corrective Action dated 6/4/86
TE 50140-K096	Assignment Of Authority, Organization, and Program Description
TE 50140-K086	Corrective Action dated 12/9/85
TE 50140-K066	Records Management
TE 50140-K005	Quality Assurance Records

The audits generally lasted four weeks. Auditors conducted entrance and exit summaries with the plant organization prior to start and at conclusion of the audit. The audit report clearly defined the audit scope and results. Personnel conducting the audit were qualified as determined by NRC inspector review of training records. The audit questions and areas of interest reflected the requirements in the essential elements manual. The audited organizations' response to audit findings were in writing, were timely, and adequately addressed the findings and recommendations.

c. Records Program

During this inspection, the NRC inspector reviewed Section 6.10 of the facility TS, ANSI N45.2.9-1974 (Requirements For Collection, Storage, and Maintenance Of Quality Assurance Records For Nuclear Power Plants), and the WCGS procedures listed below:

- o ADM 01-045, Revision 3, "Document Control Supervisor Duties and Responsibilities"
- o ADM 07-046, Revision 16, "Records, Administrative, and Storage"

The WCGS records program was described in ADM 07-406. Maintenance and retention periods for records were described in the TS and various procedures. The Document Control (DC) Supervisor was assigned responsibility of maintaining the QA records and ensuring implementation of the record storage controls. Responsibilities had been assigned with controls established to ensure transfer and retention of construction phase records. The controls (ADM Procedure 07-406) established for record storage were in accordance with FSAR commitments; i.e., ANSI N45.2.9-1974. This procedure described the storage facility; designated the DC supervisor as custodian of the QA vault; described the filing/retrieval system utilized; established a method to verify that records were in agreement with the transmittal document; made provisions for governing access to files and maintaining accountability of records removed from storage; established methods for correcting information, filing supplemental information and disposing of superseded records with the required reviews and approvals specified.

Individual section supervisors; i.e., instrumentation and control, maintenance, et cetera, were responsible for establishing retention periods of records not covered by the FSAR, TS, 10 CFR, and for authorizing the disposal of records no longer required.

The NRC inspector verified through discussions with licensee personnel and a tour of the QA vault that: The environmental conditions and fire suppression system were in accordance with commitments; records were listed on an index; records were readily retrievable from designated files and were not stored loosely but were firmly attached in folders; and records were stored in suitable file cabinets.

No violations or deviations were identified.

10. Design Changes and Modifications

The NRC inspector reviewed design changes and modifications that the licensee had determined were not required to be approved by NRC and verified they were in conformance with TS and 10 CFR Part 50.59.

a. Design Changes

The NRC inspector selected three design changes that were to be submitted with the annual report to the NRC that is required by 10 CFR Part 50.59(b). For each of the design changes the NRC inspector verified: That the changes were reviewed and approved in a technically adequate manner in accordance with 10 CFR Part 50.59; that the design changes were reviewed and approved according to TS; and that established procedures were used.

The three design change summaries follow:

- (1) Plant Modification Request (PMR) 01446, Revision 0, was originated to reinstall flow elements EM-FE924, 925, 926, and 927, which were originally installed backwards.
- (2) Safety Evaluations (SE) 86-SE-31 was originated to reverse the wires on Terminals TB4-8-01 and TB4-8-04 in Panel RP05BC for the emergency diesel generator "A" day tank level control circuit to make the wiring agree with the schematic.
- (3) SE 86-SE-44 was originated to demonstrate the operability of reactor coolant system pressure isolation valves BB PV8702A and EJ HV8701A by verifying that the measured leakage meets the requirements of TS 4.4.6.2.2.

b. Temporary Modifications

The NRC inspector reviewed the WCGS program for temporary modifications through review of Procedure ADM 02-101, Revision 15, "Temporary Modifications." The NRC inspector verified that temporary modifications were reviewed and approved according to Section 6 of the TS and 10 CFR Part 50.59. The procedure assigned each group supervisor responsibility for approving the temporary modification as correct, necessary, and required the use of detailed approved procedures. WCGS ADM Procedure 02-101 required: That a temporary modification log be maintained; that all outstanding temporary modifications were reviewed periodically; and that temporary modifications be evaluated to determine the need for independent verification.

No violations or deviations were identified.

## 11. Core Thermal Power Evaluation

The NRC inspector verified that the licensee's calculation of core thermal power was correct and that the procedure used was technically adequate. On July 18, 1986, at 0610 CDT, the NRC inspector performed a manual calorimetric using licensee Procedure STS SE-002, Revision 0, "Manual Calculation of Reactor Thermal Power." At that time computer point REV1118 was indicating 3407.3 MWth which corresponds to 99.89 percent of licensed full power. The NRC inspector calculated a power level of 99.82 percent of full power. The NRC inspector then verified that all nuclear instrumentation channels were reading greater than 99.89 percent, but within acceptable margins. The NRC inspector reviewed STS SE-002 for technical adequacy, proper initial conditions, appropriate prerequisites and good engineering practice. The three typographical errors and one usage of incorrect units found were given to the Superintendent of Operations for correction. The correction factor of 0.4 percent for reactor coolant pump (RCP) heat added was found to be incorrect by 0.0254 percent, since this is within instrument error, this difference is not significant and the reactor engineer was notified of the difference. The proper correction factor for RCP pump heat is 0.3746 percent or 43.6 10E6 BTU/HR as identified in the preoperational test procedure results report for SU9-0025, Revision 0, "Reactor Coolant System Heat Loss." The NRC inspector on a random basis verified the correct number was used in Startup Test SU7-SC03.2, Revision 1, "Thermal Power and Statepoint Data Collection at 30 percent Power," and SU7-SC03.8, Revision 1, "Thermal Power and Statepoint Data Collection at 100 percent Power." The NRC inspector randomly reviewed TS Surveillance STS SE-001, Revision 5, "Power Range Adjustment to Calorimetric," performed on June 14-16, 1986, and verified that the power range nuclear instruments were properly adjusted to agree with the results of the heat balance and that data was reasonable, consistent with previous data and properly recorded.

The NRC inspector by review of the STS master schedule verified that the frequency of calorimetrics was as prescribed by the licensee's TS.

The NRC inspector by review of the appropriate surveillances verified that the plant instruments and computer points used for calorimetrics were calibrated in a traceable manor and that evaluation results were reviewed, approved, and documented in accordance with procedures.

No violations or deviations were identified.

## 12. Radwaste Processing

During this inspection period, the NRC inspectors observed activities and reviewed procedures related to the processing of radwaste. A vendor was onsite processing primary and secondary evaporator bottoms concentrates. A licensee procedure was to provide valve lineups for supplying the radwaste to the vendors processing equipment. The vendor would then use his own procedures to process the radwaste.

In discussions with cognizant licensee personnel, the NRC inspectors pointed out that the vendor's procedures and the licensee's procedures had not been integrated together in that they did not reference each other and that there was no definitive vehicle by which the vendor's procedures were implemented or controlled for use onsite.

The licensee resolved this observation by establishing and implementing Procedure STS HC-227, Revision 0, "Vendor Processing of Primary Resins and Concentrates," which addressed interfaces with vendor procedures.

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 August 4, 1986. The NRC inspectors also attended entrance/exit meetings of other NRC region based inspectors identified below:

<u>Inspection Period</u>	<u>Lead Inspector</u>	<u>Area Inspected</u>	<u>Inspection Report No.</u>
7/14-18/86	D. Hunnicutt	QA Program and Design Changes	86-17 (pars. 9 and 10)