

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

NRC Inspection Report: STN 50-482/85-20

Operating License: NPF-32

Docket: STN 50-482

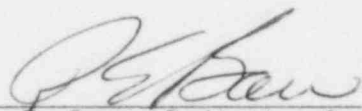
Licensee: Kansas Gas and Electric Company (KG&E)
P. O. Box 208
Wichita, Kansas 67201

Facility Name: Wolf Creek Generating Station (WCGS)

Inspection At: WCGS Site, Burlington, Kansas

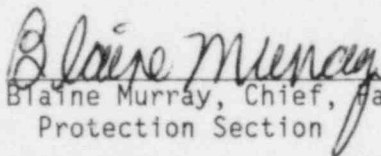
Inspection Conducted: April 23-26, 30, and May 1-3, 1985

Inspector:


R. E. Baer, Radiation Specialist, Facilities
Radiological Protection Section

5/3/85
Date

Approved:


Blaine Murray, Chief, Facilities Radiological
Protection Section

6/4/85
Date


L. E. Martin, Chief, Project Section A
Reactor Project Branch 2

6/10/85
Date

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Inspection Summary

Inspection Conducted April 23-26, 30, and May 1-3, 1985 (Report STN 50-482/85-20)

Areas Inspected: Routine, announced inspection of the licensee's radioactive waste program including: gaseous radwaste, liquid radwaste, solid radwaste, air cleaning, and radiation monitoring systems. The inspection involved 66 inspector-hours onsite by one NRC inspector.

Results: Within the 5 areas inspected, no violations or deviations were identified. Three open items involving gaseous radwaste system representative sampling, process monitor calibration, and process and effluent monitor calibration procedures were identified (paragraph 4).

DETAILS

1. Persons Contacted

KG&E

- *F. T. Rhodes, Plant Manager
- *C. C. Mason, Director Nuclear Operations
- *G. D. Boyer, Superintendent Technical Support
- G. R. Bramlett, Instrument and Calibration (I&C) Supervisor
- *D. R. Byerley, Senior Instructor
- T. W. Coates, I&C Assistant Supervisor
- A. A. Freitag, Nuclear Plant Engineer
- J. C. Guimbellot, System Test Supervisor
- *C. J. Hoch, Quality Assurance (QA) Technician
- *J. M. Isom, Radwaste Coordinator
- D. J. Kinoshita, Operations Test Engineer
- *W. M. Lindsay, Quality Systems Supervisor
- R. L. Logsdon, Site Chemist
- T. J. McFall, Nuclear Plant Engineer
- T. S. Morrill, Chemistry Supervisor
- *M. M. Nichols, Site Health Physicist
- C. L. Palmer, Chemistry Supervisor
- *L. E. Paulson, Corporate Radwaste Engineer
- *K. R. Petersen, Licensing
- J. Robertson, I&C Technician
- R. Stadobaugh, QA Auditor
- *C. A. Swartzendruber, Manager Radiological Services
- *M. G. Williams, Regulatory, Quality and Administration Superintendent
- R. Wollum, I&C Coordinator

Others

- W. D. Allen, Allen Nuclear Associates, Consultant
- *B. L. Bartlett, NRC Resident Inspector
- H. F. Bundy, NRC Resident Inspector
- J. E. Cummins, NRC Resident Inspector
- R. Fell, Nuclear Reactor Regulation (NRR) Meteorology and Effluent Treatment Branch
- E. L. Geiger, Bechtel Mechanical Engineer Lead
- T. E. Moskel, Bechtel Plant Facilities Designer
- P. W. O'Conner, NRR, Project Manager WCGS

The NRC inspector also interviewed other licensee and contractor employees including health physics, chemistry, operations, and test personnel.

*Denotes those individuals present during the exit meeting on May 3, 1985.

2. Licensee Action on Previously Identified Open Items

(Closed) Open Item (482/8323-06): Solid Radwaste Management - This item involved the lack of preoperational test procedures, representative sampling of resins, and an ALARA review of the installed system. The licensee had completed preoperational test procedures and tests on the solid waste, filter handling, and resin transfer systems, verified representative sampling, and performed an ALARA review. This item is considered closed.

(Closed) Open Item (482/8323-07): Air Cleaning Systems - This item involved the lack of preoperational test procedures. The licensee had developed preoperational test procedures and completed testing on all nine air cleaning systems. This item is considered closed.

(Closed) Open Item (482/8323-08): Area Radiation Monitors - This item involved the lack of approved preoperational test, surveillance, calibration, and operational procedures. The licensee had developed and approved procedures which addressed preoperational testing, surveillance, calibration, and operation of the area radiation monitoring system. This item is considered closed.

(Closed) Open Item (482/8323-09): Process and Effluent Radiation Monitors - This item involved the lack of preoperational test procedures, determination of calibration sources, and issuance of surveillance, calibration, and operational procedures. The licensee had developed preoperational test, surveillance, calibration, and operational procedures, and established calibration sources for the process and effluent radiation monitors. This item is considered closed.

(Closed) Open Item (482/8323-10): Technical Specifications - This item involved the lack of a process control program for solidification of radwaste. The licensee had developed a process control program for solidification of waste and received approval from NRR for implementation. This item is considered closed.

(Closed) Open Item (482/8406-02): NUREG-0737, Item II.F.1-1, Noble Gas Monitor - This item involved the lack of calibration and operating procedures and training of personnel. The licensee had implemented calibration and operating procedures and provided training for shift chemistry personnel. This item is considered closed.

(Closed) Open Item (482/8406-03): NUREG-0737, Item II.F.1-2, Sampling and Analysis of Plant Effluents - The licensee had resolved all of the NRC's concerns regarding system evaluations, testing, and personnel training. This item is considered closed.

(Closed) Open Item (482/8406-04): NUREG-0737, Item II.F.1-3, Containment High Range Monitor - This item involved the lack of installation of the two required detectors and development of calibration procedures. The

licensee had installed and calibrated two high range containment monitors. This item is considered closed.

(Closed) Open Item (482/8425-29): Radwaste Laboratory and Sampling System - This item involved the lack of a complete and functional radwaste laboratory and sampling system for collecting and analyzing effluent liquid waste samples. The licensee had completed testing of the sampling system and the radwaste laboratory was operational. This item is considered closed.

3. Licensee's Action on Operating License NPF-32, Attachment 1

(Closed) License Condition 1.a.: The primary containment high range radiation monitors shall be source checked and calibrated (482/8406-04). The licensee had source checked and electronically calibrated the two containment high range radiation monitors GT-RE-59 and GT-RE-60 as required. This item is considered closed.

(Closed) License Condition 1.f.: Establish by test, the operability of process radiation monitors SJ-RE-01 (CVCS Letdown Monitor), GE-RE-92 (Condenser Air Discharge Monitor), and GH-RE-23 (Waste Gas Decay Tank Vent Monitor). The licensee had completed preoperational and calibration testing of the three process radiation monitors and demonstrated their operability. This item is considered closed.

(Closed) License Condition 1.g.: Preoperational testing and calibration of area, process and effluent radiation monitors (482/8323-08, 09). The licensee had completed preoperational testing and calibration of all area, process and effluent radiation monitors. This item is considered closed.

4. Open Items Identified During This Inspection

Open items are matters that require further review and evaluation by the NRC inspectors or the licensee. Open items are used to document, track, and ensure adequate followup on matters of concern to the inspector.

<u>Open Item</u>	<u>Description</u>	<u>Paragraph</u>
482/8520-01	Gaseous Radwaste System Representative Sampling	5
482/8520-02	Calibration of Process Radiation Monitors	9b
482/8520-03	Calibration Procedures for Process and Effluent Monitors	9b

5. Gaseous Radioactive Waste Management

The NRC inspector reviewed the licensee's actions to resolve the NRC inspector's concerns regarding outstanding test deficiencies associated

with preoperational test SU3-HA01, "Gaseous Radwaste System," and verification of representative sampling.

The licensee had completed preoperation test procedures, preoperational testing, an ALARA review, and verified the tank volumes of major tanks used in the waste gas system.

The licensee had not verified that the samples taken of gaseous effluent would be representative of the entire waste gas tank volume. The licensee's representative stated that this verification would be performed within 6 months after the reactor had been operated and radioactive gases had been generated and collected.

This is considered an open item (482/8520-01) pending verification by the licensee that gaseous effluent samples are representative of the discharged volume.

The licensee was in the process of completing corrective action on Test Deficiency Reports (TDRs) generated during the preoperational test of the gaseous waste system. Two identified problems were associated with the hydrogen/oxygen analyzers and the hydrogen recombiners. As a result of the identified problems, the licensee was installing new controllers on the analyzers and a moisture separator on the recombiners. Open Item (482/8323-04) remains open pending completion of corrective actions on the analyzers and recombiners and demonstration of their operability.

No violations or deviations were identified.

6. Liquid Radioactive Waste Management

The NRC inspector reviewed the licensee's liquid waste management system to determine compliance with Final Safety Analysis Report (FSAR) commitments.

The licensee had developed and performed two preoperational tests, SU4-HB01, "Liquid Radwaste System," and SU4-HB02, "Waste Evaporator" of the liquid radioactive waste systems. Test deficiencies noted during the preoperational tests had been resolved. The licensee had also performed an ALARA review of the "as built" liquid radwaste system, developed a sampling program of clean and potentially contaminated liquid systems, and verified tank volumes and discharge flow rates.

The licensee had not completed testing to verify tank recirculation times and flush times for sample lines to assure representative sampling of effluents. Open Item (482/8323-03) will remain open pending completion of the representative sampling program.

No violations or deviations were identified.

7. Solid Radioactive Waste System

The NRC inspector reviewed the solid radioactive waste system to determine compliance with FSAR commitments and Technical Specifications (TS).

The NRC inspector reviewed the preoperational tests and procedures, SU4-HC01, "Solid Waste System," SU4-HC02, "Filter Handling System," and SU4-HC03, "Resin Transfer," the licensee had conducted on the solid radioactive waste system. The inspector noted that the TDR generated during the conduct of these test had been resolved except for the transport of the filter cask. The spent filters are removed from the filter cubicles, placed in a transfer cask, and then lowered onto the ground floor of the radwaste building. The problem identified in the TDR involved the lack of a method of transporting the cask from the ground floor to the radwaste solidification area. The licensee could not transport the cask to the solidification area. The NRC inspector also noted that during the conduct of test SU4-HC01, the licensee was not able to demonstrate the structural stability requirement of 10 CFR Part 61.56(b).

The licensee elected to utilize a vendor supplied portable solidification system for the solidification of evaporator bottoms, filters, and resins. The licensee had not amended the FSAR to include the capability of transferring the evaporator bottoms and resins to a portable solidification system. This matter was previously discussed in NRC Inspection Report 50-482/83-23. The NRC inspector discussed with licensee representatives those elements that would be expected to be addressed to satisfy TS 6.15.1 and the 10 CFR 50.59 safety analysis. The NRC inspector also stated that the licensee should review and consider the recommendations of Regulatory Guide 1.143.

The licensee had received approval of the solid waste Process Control Program (PCP) from the NRC on April 17, 1985. This approval was for the original installed solidification equipment and the process used in preoperational procedure SU4-HC01.

The NRC inspector discussed with licensee representatives the elements needed to satisfy the requirements of TS 6.13, including the revision of the PCP to include the portable solidification process.

No violations or deviations were identified.

8. Air Cleaning Systems

The NRC inspector reviewed the licensee's air filtration system to determine compliance with FSAR commitments.

The licensee had completed preoperational testing, SU3-0006, "HEPA Filter/Charcoal Adsorber Test," of all air cleaning systems. This test included visual inspection of filter housing and ducts, airflow capacity and distribution, air-aerosol mixing uniformity test, in-place leak test of HEPA filter banks, and in-place leak test of the charcoal adsorbers.

The NRC inspector reviewed the preoperational test package including the test results for the auxiliary/fuel building normal exhaust filter adsorber unit, condenser air removal filter adsorber unit, emergency exhaust filter adsorber unit, radwaste building exhaust filter adsorber unit, containment atmospheric control filter adsorber unit, containment purge filter adsorber unit, access control exhaust filter adsorber unit, control room filtration system filter adsorber unit, and control room pressurization system filter adsorber unit.

The NRC inspector noted that the calibration for the Freon generator (instrument number 83102-6) was due on January 18, 1985, and on January 23, 1985, charcoal testing was still in progress. The licensee had also noted on TDR-003, that the test equipment calibration date had expired. The resolution of this TDR included the vendor providing a telex stating that the generator was verified as still in calibration. The NRC inspector noted that the vendor did not always record the instrumentation used to perform the test on the test data sheets and that the vendor test procedures are not included in the SU3-0006 test package.

The NRC inspector expressed concern that: (1) the licensee had not included the calibration data showing the required reading, as found, and as left data for the Freon generator that was out of calibration; (2) the test data sheets did not include the instruments used to perform the test; (3) the vendor test procedures were not included in the test package so that the methodology used could be audited; and (4) no procedure was referenced which addressed the loading of charcoal into absorber filter trays and test canisters. The licensee stated that the necessary data would be incorporated in the SU3-0006 test package.

The NRC inspector noted that the licensee was not able to test the second HEPA filter bank air distribution because the system design did not permit access to the filter bank. This same deficiency had been previously noted at the Callaway Plant which is similar in design as Wolf Creek.

No violations or deviations were identified.

9. Radiation Monitoring Instrumentation

The NRC inspector reviewed the licensee's inplant radiation monitoring systems for compliance with the FSAR, NUREG-0737, and TS.

a. Area Radiation Monitoring System

The NRC inspector reviewed preoperational test procedure SU4-SD01, "Fuel Building Area Radiation Monitors," and SU4-SD02, "Area Radiation Monitors (excluding fuel building)." The licensee had not provided for calibration over the full range of operation for the area radiation monitors during the preoperational test, but provided the NRC inspector with data sheets which demonstrated that full range calibration had been performed just prior to preoperational testing. The NRC inspector reviewed procedure STN 1C-503, "Channel Calibration

Radwaste Building Corridor Ground Floor Area Radiation Monitor SDRE04" which is typical of all area radiation monitor calibration procedures. Section 5.3 of STN 1C-503 addresses full scale calibration of the radiation detectors.

No violations or deviations were identified.

b. Process and Effluent Radioactivity Monitoring System

The NRC inspector reviewed preoperational test SU3-SP01, "Process Radiation Monitoring System." The test package contained a test deficiency, (TD) 012, which stated that testing was not performed on selected monitors not required for fuel load, and TDR-001 listed the 24 monitors not tested. At the time of this inspection, the licensee had performed preoperational testing of those monitors listed in TDR-001. The NRC inspector reviewed the tests and test results of 9 of the 24 monitors listed in TDR-001. Three of the nine test results reviewed, SJ-RE-01, "CVCS Letdown Monitor," GE-RE-92, "Condenser Air Discharge Monitor," and GH-RE-23, "Waste Gas Decay Tank Vent Monitor," had been listed in Attachment 1 to the facility operating license as required to be operational prior to initial criticality.

The NRC inspector discussed with licensee representatives the fact that effluent monitors had been calibrated using radioactive gases with gaseous monitors and radioactive liquids with liquid monitors; however, the 24 process monitors listed in TDR-001 had only been calibrated with a single transfer source and electronic calibration methods. The licensee stated during the exit interview on May 3, 1985, they would calibrate the process monitors using radioactive gases and liquids within 6 months after issuance of the operating license. The inspector stated this would be considered an Open Item (482/8520-02) pending completion of this calibration.

The NRC inspector also discussed with licensee representatives the fact that calibration procedures for the process and effluent monitors did not address full range calibrations for each monitor although this was performed during the acceptance testing of the monitors. The licensee stated that calibration procedures would be revised to include full range, one point per decade calibrations and would be completed within 6 months after issuance of the operating license. The NRC inspector stated this would be considered an open item (482/8520-03) pending revision of the calibration procedures.

No violations or deviations were identified.

10. Exit Interview

The NRC inspector met with licensee representatives identified in paragraph 1 at the conclusion of the inspection on May 3, 1985. The NRC inspector discussed the scope and findings of the inspection. The licensee committed to completion of the open items identified in paragraph 4 within 6 months after issuance of the operating license.