

Appendix

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

NRC Inspection Report: 50-482/84-30

CP: CPPR-147

Docket: 50-482

Category: A2

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: August 1-31 and September 1-28, 1984

Inspectors: *Spin D. Reyes for*
M. J. Farber

10/10/84
Date

Spin D. Reyes for
D. L. Williams

10/10/84
Date

M L McCormick-Barger
M. L. McCormick-Barger

10-10-84
Date

Approved By: *Spin D. Reyes for*
M. A. Ring, Acting Chief
Test Programs Section

10/10/84
Date

L. E. Martin
L. E. Martin, Chief
Wolf Creek Task Force

10/18/84
Date

R. P. Denise
R. P. Denise, Director
Wolf Creek Task Force

10/19/84
Date

Inspection Summary

Inspections conducted on August 1 through September 28, 1984 (Report No. 50-482/84-30(DRS))

Areas Inspected: Routine announced inspection of approved preoperational test procedures; preoperational test results packages; approved startup test procedure reviews; equipment preservation and housekeeping; administrative controls

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for test results packages; scheduling of preoperational test activities in support of licensing; and concrete expansion anchor bolt installation. The inspection involved a total of 110 inspector-hours onsite and 112 inspector-hours offsite by three NRC inspectors, including 25 inspector-hours onsite during off-shifts.

Results: Of the seven areas inspected, no items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

*F. T. Rhodes, Plant Manager
*R. B. Glover, Startup Manager
*R. L. Stright, Licensing
F. D. McLaurin, Assistant Startup Manager
*K. R. Ellison, Startup Technical Support Supervisor
*W. M. Lindsay, Quality Assurance Systems Supervisor
W. B. Norton, Reactor Engineering Supervisor
T. G. Dempster, Startup Quality Control

*Denotes those attending the exit interview on September 28, 1984.

Additional plant technical and administrative personnel were contacted by the inspectors during the course of the inspection.

2. Preoperational Test Procedure Reviews

Below is a list of preoperational tests for which the inspectors have completed their test procedure review during the inspection period. Unless otherwise noted, the inspectors have no further questions on these procedures.

SU3-AB02B, Rev. 0, Main Steam Safety Valves
SU3-AE01, Rev. 0, Main Feedwater System
SU3-AE02, Rev. 0, Main Feedwater Control System
SU3-BG01, Rev. 0, CVCS Major Components
SU3-NB01, Rev. 2, 4160 VAC Class 1E Electrical System
SU3-NG01, Rev. 2, 480 VAC Class 1E Electrical System
SU3-NG02, Rev. 0, 480 VAC Class 1E Electrical System (Essential Service Water)
SU3-NN01, Rev. 0, Instrument AC Class 1E Electrical System
SU-3-NF01, Rev. 0, Load Shed and Emergency Load Sequencer
SU3-NF02, Rev. 0, LOCA Sequencer
SU3-NF03, Rev. 0, Shutdown Sequencer

The inspector commenced review of the following procedure during the inspection period. The review will be completed during the forthcoming inspection and comments will appear in the next report:

SU3-SB01, Rev. 0, Reactor Protection System

The procedures were reviewed against the Final Safety Analysis Report (FSAR), Safety Evaluation Report (SER), and applicable Regulatory Guides, Standards, and portions of 10 CFR 50. The inspectors had the following comments with respect to the review of:

a. SU3-AE01, Rev. 0, Main Feedwater System

- (1) Review of the procedure revealed that the override of the exercise mode of the Feedwater Isolation Valves by a Safety Injection Signal (SIS) had not been verified. The licensee acknowledged having missed testing this function. This is considered an unresolved item (482/84-30-01(DRS)) pending inclusion and verification of the testing of this design feature.
- (2) The methodology for testing the loss of motive force of Air Operated Valves (AOV) does not appear to be consistent or acceptable. The licensee has committed to prepare a listing of all AOVs that are tested and verify that all safety-related AOVs have been tested for the failure position on loss of electrical power and loss of instrument air. This is considered an open item (482/84-30-02(DRS)) pending completion of the list and verification of testing methods.

b. SU3-NG01, Rev. 0, 480 VAC Class 1E Electrical System

During the review of this preoperational test procedure it was noted that Acceptance Criteria 2.8 and 2.9 verified that actuation of an isolation switch prevented tripping of electrical breakers from the control room. Research revealed that these switches are installed in response to a commitment made by the licensee for fire protection. Placing these switches in the "isolate" position will prevent tripping the class 1E breakers on an electrical short coincident with a fire. The inspector expressed concern that there was no administrative control for the switches or no annunciation in the control room when the switches were placed in the "isolate" position. Discussion with the licensee indicated that the concern was understood and action will be taken to place protective covers over these switches to prevent inadvertent actuation. This is considered an open item (482/84-30-03(DRS)) pending installation of the covers and issuance of appropriate guidance in system operating procedures.

c. SU3-NF02, Rev. 0, LOCA Sequencer

The inspector noted that no provisions had been made to assure that the diesel generator would be evaluated for its ability to carry rated load without exceeding temperature specifications during limiting environmental conditions such as those existing during a design basis accident. Parameters which would be indicative of these conditions would be room temperature and essential service water temperature. Discussions with the licensee revealed that a number of resolutions are being considered. This is an open item (482/84-30-04(DRS)) pending selection of an acceptable test method and review by the inspector.

d. SU3-NF03, Rev. 0, Shutdown Sequencer

- (1) The SNUPPS FSAR indicates that a voltage dip of 25% may be seen during diesel generator transient operation. The inspector noted that the test did not attempt to verify the ability of emergency loads to start and accelerate to full load within allowable time limits under a 75% nominal voltage condition. The licensee has proposed a number of acceptable methods to meet this requirement. Selection of an acceptable method and review by the inspector is considered an open item (482/84-30-05(DRS)).
- (2) The inspector noted that motor current was being used as a parameter to determine that emergency pumps reached rated speed during the acceleration tests at 90% nominal voltage. This is acceptable provided that the pump is operated at full-flow (full load). In this procedure all pumps are lined up for recirculation which result in a lower running motor current. The inspector questioned the validity of this test since it does not approach accident conditions. The licensee is considering other test methods to resolve this discrepancy. Selection of an acceptable test method and review by the inspector is an open item (482/84-30-06(DRS)).

3. Preoperational Test Results Packages Evaluations

The inspectors completed review of the following preoperational test results packages during this inspection period:

SU3-AB02, Rev. 0, Main Steam Safety Valves
SU3-AE02, Rev. 0, Main Feedwater Control System
SU3-NG02, Rev. 0, 480 VAC Class 1E Electrical System (ESW)
SU3-BG01, Rev. 0, CVCS Major Component Test

The packages were reviewed to assure that test results are being adequately evaluated, test data meets acceptance criteria, deviations are properly identified and resolved, review procedures are being followed, and administrative practices are adequate with respect to test execution and data evaluation.

No items of noncompliance or deviations were identified.

4. Initial Startup Test Procedure Review

Below is a list of startup test procedures for which the inspectors have completed their review:

SU7-0024, Rev. 0, Natural Circulation Test

The procedures were reviewed against the FSAR, and applicable Regulatory Guides, Standards, and portions of 10 CFR 50. The inspector had the following comments with respect to the review of:

SU3-0024, Rev. 0, Natural Circulation Test

- a. Flux mapping is being used as the basis for meeting an FSAR objective for the natural circulation test as opposed to thermocouple mapping.
- b. A quantitative limit should be provided for the phrase "wide range T_{hot} is approximately equal to core exit T/C average temperature" which is contained in step 6.12, Note b.

These comments were discussed with the licensee and are an open item (482/84-30-07(DRS)) pending the licensee's evaluation and response.

No items of noncompliance or deviations were identified.

5. Equipment Preservation and Housekeeping

The inspectors conducted plant tours for the purpose of determining that equipment preservation and cleanliness were adequate to support the conduct of preoperational testing. The following items were noted:

- a. A flammable liquids storage container, with rags piled near and on top of it, was stored next to an open safety related 480 VAC motor control center in the B Diesel Generator room.
- b. The chain from a small hoist was wrapped around the conduit for the cables of the B Diesel Generator voltage regulator resistors.
- c. A coil of lock-wire was hung on a Main Steam pressure transmitter in the turbine-driven auxiliary feedwater pump room.

The inspectors immediately contacted site fire protection personnel to correct the flammable materials condition in the diesel generator room. At a subsequent meeting the inspectors indicated to the licensee that preservation and cleanliness conditions were only marginally acceptable and that further degradation would be considered an item of noncompliance. The licensee agreed to take immediate steps to improve and maintain plant conditions.

6. Administrative Controls for Preoperational Test Results Packages

While reviewing the preoperational test results packages noted in paragraph 3, the inspector noted that the results report was missing from the Main Feedwater Control System package although the completion checklist was initialed as containing the report. On further examination the inspector realized that he could not be assured that the results package that he was reviewing was complete. The Component Status Index and the Open Item List were not numbered. The completion checklist indicated that "supporting documents" were included in the package. The inspector could not determine that all supporting documents were in fact included since there was no listing. The inspector interviewed startup personnel and reviewed administrative procedures in an attempt to determine where the

responsibility lay for ensuring that test packages were complete on transfer to the vault and the mechanism that ensures completeness. This is an open item (482/84-30-08(DRS)) pending presentation by the licensee of an acceptable program for assuring that test results packages are maintained complete and protected from loss or damage.

No items of noncompliance or deviations were identified.

7. Scheduling of Preoperational Test Activities in Support of Licensing

The inspectors reviewed the licensee's schedule for the completion of preoperational test activities in support of licensing. These activities include test completion, results correlation, internal review, external review, comment resolution, Joint Test Group review, and final approval. It was noted that a number of important tests were not scheduled to be completed until a few days before the scheduled start of fuel load and that the necessary processes of review and approval were not indicated as being complete prior to fuel load. The inspectors also noted that the schedule did not allow time for NRC review of vital results packages prior to fuel load. The licensee was informed that the schedule as shown could not support the issuance of a license since it did not provide for completing reviews and approvals as required. The inspectors also indicated to licensee management that attempts to speed up the review and approval process could not be made at the expense of quality reviews.

No items of noncompliance or deviations were identified.

8. Concrete Expansion Anchor Bolt Installation

During a plant tour the inspector noted that concrete expansion anchor bolts did not appear to be uniformly installed and that full thread engagement was not obtained in many cases. The inspector reviewed Bulletin 79-02, the licensee's response, and the installation and inspection procedures for these bolts. The installation procedure required that the threaded end of the bolt be flush with the surface of the nut. Because of the configuration of the bolt it is possible to have the top of the bolt flush with the top of the nut without having the ends of the threads flush with the top of the nut. This results in less than full thread engagement. The inspector questioned the acceptability of this installation. The licensee has committed to analyzing the condition to determine if less than full thread engagement is acceptable. This is considered an open item (482/84-30-09(DRS)) pending results of the analysis and review by the inspector.

No items of noncompliance or deviations were identified.

9. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC, the licensee, or both. Open items disclosed during the inspection are discussed in Paragraphs 2.a.1, 2.b, 2.c, 2.d.1, 2.d.2, 4, 6, and 8.

10. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item disclosed during the inspection is discussed in Paragraph 2.a.1.

11. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) on September 28, 1984 to discuss the scope and findings of the inspection. The licensee acknowledged the statements made by the inspectors with respect to items discussed in the report.