

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Report No. STN 50-482/78-04

Docket No. STN 50-482

Category A2

Licensee: Kansas Gas and Electric Company
Post Office Box 208
Wichita, Kansas 67201

Facility Name: Wolf Creek, Unit No. 1

Inspection at: Wolf Creek Site, Burlington, Kansas

Inspection conducted: March 13-17, 1978

Inspectors: W. A. Crossman 03/30/78
for C. R. Oberg, Reactor Inspector, Projects Section Date
(Paragraphs 1, 2, 3, 4, 5, 8 & 9)

L. D. Gilbert 3/30/78
L. D. Gilbert, Reactor Inspector, Engineering Date
Support Section (Paragraphs 6 & 7)

Approved: W. A. Crossman 03/30/78
W. A. Crossman, Chief, Projects Section Date

W. A. Crossman 03/30/78
W. A. Crossman, Acting Chief, Engineering Support Date
Section

Inspection Summary:

Inspection during the period March 13-17, 1978 (Report No. STN 50-482/78-04)

Areas Inspected: Routine, unannounced inspection involving observation of ongoing construction work; review of quality assurance procedures; review of quality records relating to safety related concrete structures, safety related piping fabrication and welding of containment liner. The inspection involved sixty-six inspector-hours by two NRC inspectors.

Results: Of the three areas inspected, no items of noncompliance were identified in two areas. One apparent item of noncompliance was identified in the third area (infraction - failure to follow procedures, paragraph 4).

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DETAILS

1. Persons Contacted

Principal Licensee Personnel

- *J. O. Arterburn, Superintendent of Nuclear Development
- *M. E. Clark, Manager, Quality Assurance, Site
- G. W. Reeves, Quality Assurance Engineer

Daniel International (Daniel)

- *W. E. Hitt, Project Manager
- *C. T. Kenney, Construction Manager
- *A. S. Harper, Engineering Manager
- *D. L. Jones, Quality Control Manager
- *G. W. Pointer, Administrative Assistant
- *I. Hussain, Project QA Manager
- T. Green, Assistant Civil QC Engineer
- *S. K. Chandhary, Civil QC Engineer
- F. Beach, Document Control
- *C. L. Phillips, Project Civil Engineer
- R. Key, QC Supervisor, Testing
- B. Holton, Lead QC Inspector
- J. D. Dennison, Assistant QC Manager
- S. O. Tackett, QC Mechanical/Welding Engineer

Chicago Bridge and Iron (CB&I)

- W. F. Hiser, Project Welding and QA Supervisor
- L. Z. Brooke, Welding and QC Supervisor
- J. W. Fox, Welding and QA Supervisor

The IE inspectors also had contact with several other licensee and construction employees during the course of the inspection. They included members of the QC and Document Control Section and other general office personnel.

*denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Infraction (STN 50-482/77-13): Observation of Work; Containment Base Mat Preplacement Inspection. Daniel Procedure QCP-IV-106, "Concrete Pre-Placement, Placement and Post-Placement," now contains a checklist for preplacement inspection which includes a provision for a check of the construction joint preparation^{1/}. This item was corrected on March 15, 1978.

^{1/}KG&E letter to NRC dated January 25, 1978

(Closed) Unresolved Item (STN 50-482/77-12 and 78-02): Boric Acid Tank Installation. The inspector determined, through conversation with licensee representatives and observation of records, that the Bechtel resolution of the nonconformance, as contained in NCR 1-152-M, dated February 10, 1978, has been completed. This latter NCR (confirmed by the manufacturer) permits the tank to be used without welding washers to the upper bale of the affected tank's mounting legs.

(Closed) Unresolved Item (STN 50-482/77-03): Review of Quality Assurance Records - Concrete Placements. The licensee produced the missing records which document the results of the 90 day compressive strength tests for:

- a. test cylinder, group 6873-6878
- b. test cylinder, group 2055-2060
- c. test cylinder, group 2007-2012

This item is considered closed for record purposes. However, further inspection effort identified an item of noncompliance (see paragraph 4).

3. Inspection of Cadwelds for Reactor Containment

The IE inspector, in company with licensee representatives, inspected Cadwelds in the reactor containment wall and in the reactor cavity and shield wall area. The constructor reported that Cadweld crews are now working thirteen hours per day from Friday through Sunday in order to avoid conflicts with CB&I containment liner work.

No items of noncompliance or deviations were identified.

4. Review of Quality Assurance Records (Concrete Placements)

The IE inspector performed a follow-on review of concrete placement records which had been initiated during a previous inspection.

Records relating to selected placements in the Control Building, Tendon Gallery walls and Containment Building base slabs were reviewed to determine adherence to acceptance specifications, documentation requirements and conformance to procedures.

The review included files of the QA records of the grout utilized in the following concrete placements:

<u>Placement</u>	<u>Grout Mix</u>	<u>Cube ID No.</u>	<u>Set No.</u>
OC221-W01	51-D-1A	D-008A, B & C	181
OC221-W02	51-D-1A	D-008A, B & C	181
OC311-W03	42-C-1AN	C-029A, B & C	417

As a result of the review, the IE inspector made the following determinations:

- a. The data from the compressive strength tests of the specified grout mixture for Placements OC221-W01 and W02 were entered on the wrong form. The test results were recorded on a form for recording results of compression tests for concrete cylinders rather than on a form for results of tests of (non-shrink) expansive grout.

Daniel Procedure QCP-I-04, Appendix A, Exhibit 6.14, Exhibit N- "Test of (Non Shrink) Expansive Grout" is designated for reporting test data for compressive strength of grout cubes.

- b. The form used for recording the test results of the specified grout mixture for Placement OC311-W03 was not an approved form.

Daniel Procedure QCP-I-04, Appendix A, paragraph 4.2.2 requires that the results of concrete materials tests be reported on approved forms.

- c. The compression test results of cube sets D008A, B & C and C029A, B & C did not meet the requirements of ASTM C109-73, paragraph 10, in that the spread of the results were greater than 10% from the average. The results are thus invalidated and the tests must be rerun. In addition, the failure of the cubes to pass the required test was not documented as a nonconformance.

SNUPPS Standard Quality Assurance Manual, Section B-9, paragraph 9.2.2.2 requires that nonconforming items identified during construction be documented by the construction organizations.

Daniel Procedure QCP-I-04, Appendix A, paragraph 4.2.5 requires that the failure of any material to meet specified acceptance criteria shall be cause for rejection and shall be immediately reported to the Project Civil QC Engineer.

Failure to utilize proper and approved forms for reporting of grout cube compressive strength data and failure to document nonconformance of cube sets to ASTM C109-73 in the manner prescribed in Daniel Procedure QCP-I-04 and SNUPPS Standard Quality Assurance Manual represents noncompliance with the requirements of Criterion V of Appendix B to 10 CFR Part 50.

5. Containment Base Mat Ninety-Day Cylinder Breaks

The licensee reported a potential 50.55(e) construction deficiency to the IE inspector on March 15, 1978.

A nonconformance report (NCR), No. 1-0229-C, 3/15/78, reported the compressive strengths of the 90-day cylinder breaks which did not meet the design specification of 5000 psi. Summarized information shows that approximately 57% of the 132 cylinders of the 90-day break test failed to reach 5000 psi. Cylinder set averages not reaching 5000 psi are approximately 50.7%. The licensee is starting a thorough investigation and analysis of the event.

This item is considered unresolved and will be further inspected during a subsequent inspection.

6. Safety Related Piping

The inspector reviewed the Daniel International QA/QC procedures and work instructions related to fabrication and installation of safety related piping. The following procedures and instructions were reviewed for conformance to the commitments specified in PSAR Sections 9 and 17:

a. Quality Assurance Program Manual - Nuclear ASME Section III, Division 1, Rev. 4

b. Administrative Procedures

AP-VI-03, Rev. 1, Material and Equipment Receiving Inspection and Status Control

AP-VIII-03, Rev. 0, Identification, Marking and Inspection

AP-VIII-05, Rev. 1, Material Storage and Control

AP-VIII-07, Rev. 1, Material Issue

c. Quality Control Procedures

QCP-I-01, Rev. 2, Receipt, Storage and Preservation of Safety Related Materials and Items

QCP-VII-200, Rev. 2, Inspection of Welding Process

QCP-VII-201, Rev. 0, Installation/Fabrication of Piping, Components, and Supports

QCP-VII-211, Rev. 0, Hydrostatic/Pneumatic Testing

QCP-XV-500, Rev. 0, Nondestructive Examination

d. Work Procedures

WP-VII-201, Rev. 2, Installation of Piping

WP-VII-203, Rev. 1, Cleaning and Sealing

WP-VII-209, Rev. 3, Preparation and Processing of Traveler

During the review, it was noted by the IE inspector that the Daniel QC procedure for insulation of safety related parts and components had identified QCP-IX-200 in the index, but it had not been issued at the time of the NRC inspection. (The procedure is not needed at the present time.) Also, a procedure for handling safety related material had not yet been issued as required^{3/} by ANSI N45.2.2. These items were previously reported as unresolved^{3/}.

No items of nonconformance or deviations were identified.

7. Containment Liner

The inspector observed the welding activities of Chicago Bridge and Iron (CB&I) in constructing the steel containment liner. Fit-up and welding of insert weld joints 433-C and 433-E were checked for conformance to CB&I Weld Procedure, WPS E7018/74-3750/59, Rev. 2.

The welding electrodes used for welding these joints were found to be certified, including impact testing. The electrode sizes and burn-off rates were observed to be within the above qualified procedure limits.

The storage, care and conditioning of the welding filler material were monitored for conformance to CB&I QA Manual, Issue No. 6, Division 4, Section 8.0 requirements.

The vacuum box testing of the girth weld between plate rings 3-4 for approximately 8 feet at the 31-degree location mark was repeated for monitoring by the inspector; no leaks were observed.

The inspector selectively reviewed two spot radiography films of the girth weld 2-3 at the intersections of vertical seams 2A and 2P for compliance with ASME B&PV Code, Section V, 1974 edition.

No items of nonconformance or deviations were identified.

8. 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. Unresolved items disclosed during the inspection are discussed in paragraph 5.

9. Exit Interview

The IE inspectors met with licensee representatives (denoted in paragraph 1) on March 16, 1978. The IE inspectors summarized the purpose and scope of the inspection and the findings. The item of noncompliance and other findings were discussed with the participants.

INSPECTION PLAN

IE Inspection Report No. STN 50-482/78-04

Licensee: Kansas Gas & Electric Company

Location: Wichita, Kansas

Facility: Wolf Creek, Unit No. 1

Type of Licensee: W, PWR, 1130 Mwe (SNUPPS)

Type of Inspection: Routine, unannounced

Dates of Inspection: March 13-16, 1978

Dates of Previous Inspection: February 21-24, 1978

Inspectors: Oberg, Gilbert, Rosenberg

SCOPE OF INSPECTION

All

30703B Entrance and Exit Interview
92706B Independent Inspection Effort

Oberg

92702B Follow up on Items of Noncompliance
92701B Follow up on Inspector Identified Problems
47053B Containment Concrete, Observation
47055B Containment Concrete, QA Records

Gilbert

55053B Containment Structural Steel Welding, Observation
55055B Containment Structural Steel Welding, Records
49061B Safety Related Piping, Procedure
49063B Safety Related Piping, Observation
49065B Safety Related Piping, Records

* Rosenberg

48063B Safety Related Structures, Observation
48065B Safety Related Structures, Records

*did not participate - trip cancelled

C. R. Oberg 2/16/78
reactor Inspector Date

Wahman 2/16/78
Date