

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

Report: 50-482/81-08

Docket: 50-482

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

Facility Name: Wolf Creek Generating Station

Inspection at: Wolf Creek Site

Inspection conducted: May 16 through June 30, 1981

Inspector: *W. B. Hubach* 7/16/81
T. E. Vandell, Resident Reactor Inspector
Projects Section #3 Date

Accompanying Personnel: *J. E. Gagliardo* 7/19/81
J. E. Gagliardo, Director, Investigative and
Enforcement Staff Date

Approved by *W. B. Hubach* 7/16/81
W. A. Crossman, Chief, Projects Section #3 Date

Inspection Summary:

Inspection During May 16 through June 30, 1981 (Report STN 50-482/81-08)

Areas Inspected: Routine, announced inspection by the Resident Reactor Inspector (RRI) and others covering: (1) follow up of investigation concerns regarding safety-related hangers; (2) review and discussion of preoperational testing procedures; (3) review of radiographic film for piping welding work; and (4) plant tour observations of QC Inspection activity, electrical wire terminations by crew E54 in the control room, welding activity of piping penetrations to fluid heads, piping isometric drawing being utilized in the reactor building, and piping storage areas. The inspection activities and investigation follow up activity involved 43 inspector-hours by two NRC inspectors.

Results: No violations or deviations were identified in the four areas inspected.

DETAILS1. Persons ContactedPrincipal Licensee Employees

- G. L. Koester, Vice President, Nuclear
- P. Burch, QA Engineer
- *E. W. Creel, QA Manager, Corporate
- *G. L. Fouts, Construction Manager
- N. L. Hill, Startup Manager
- W. P. Johnson, Startup Turnover Supervisor
- *D. W. Prigel, QA Manager, Site
- *G. W. Reeves, Assistant QA Manager, Site
- *J. L. Stokes, Project Support Supervisor

Contractor Personnel

- *L. D. Bryant, Project Quality Engineer, Daniel International Corporation (Daniel)
- *J. Grabusky, Piping and Welding Manager, Daniel
- H. McGinnis, Piping Superintendent, Daniel
- *L. Warrick, Project Manager, Daniel

Other licensee and Daniel employees were contacted during the inspection period including both craft and QA/QC employees.

*Denotes those in attendance during one or more of the management meetings held during the inspection period.

2. Safety Related Piping

A review was conducted of selected samples of current radiography inspection film for safety related piping welding work. The results of the inspection were as follows:

- a. Several of the older films with examples of bad welding were reviewed for reference (ie: M03 AE 05 (Q) 02; M03 BG 23 (Q); and M03 EN 03 (Q))
- b. Several samples of recent welding film were then reviewed (ie: M03 BG 21 (Q) weld F 021 repair R-2; M03 BG 22 (Q) weld F 018A repair R-1; and M03 BG 23 (Q) repair R-2, and the original F 018A weld film was used as a reference). It was concluded that a common rejectable condition, lack of fusion, is being corrected and not reappearing in repairs of welds, and further that NDE film reader sheets now include notes regarding the evaluation of indications even when the indications are determined to be within acceptance criteria.

- c. In discussions with a Daniel Level III inspector it was learned that considerable improvement in the reject rate has been experienced over the last six months or so with the current rate being approximately 12% whereas in the past the rate had been as high as 84%. It was explained to the NRC inspector that closer attention by supervision and engineering technical people as well as more selective utilization of qualified welders contributed to this improvement.

No violations or deviations were identified.

3. Start-up Preoperational Test Procedures

Some Startup Pre-operational Test Procedures have been provided to NRC inspector's office, currently these are Information Only copies. In discussions with the Start Up Manager and the Start Up Turnover Supervisor it was learned that the safety-related Start Up Tests would be provided to the NRC inspector along with testing schedules, interface diagrams and other information when they become available. The inspector requested that a complete set of Administrative Procedures be provided along with a complete index of all safety tests and all non-safety testing procedures. The inspector reviewed the Information Only copies for:

- a. SV3-NB01 4160 Volt (class 1E) system
- b. SV3-NK01 125 Volt (class 1E) DC system

Comment discussion: will be started at a later date when more procedures are available.

4. Plant Tours

One or more plant areas were toured several times during the reporting period to observe general construction practices, area cleanliness and storage conditions of the plant equipment. Examples of specific observations are as follows:

- a. A Daniel QC inspector was observed conducting an audit of QC hold tags in the motor control center area at elevation 200J of the Control Building.
- b. Control room control panel wiring terminations by termination crew E54 were observed in progress. One termination of cable 1SAZ05EA was witnessed. The computer print out termination instructions were being followed.

- c. Containment Building welding activity was observed on penetration No. P-8 to flued head weld number F040. The weld control record was reviewed for IM03 AE 05 (Q) 02 weld F040 through current revision 5. Weld preheat (to 250^oF) was observed for the 30 inch diameter, 1.375 inch wall joint. Fit up was found to be acceptable as well as cleanliness and preparation for welding. Two Daniel QC inspectors were later observed conducting visual inspection of the weld.
- d. A welder (ID number D-279) was observed beginning to grind out a stainless steel weld to remove a defect outlined in a film overlay sheet. This was on weld number F023 rev. 2 of drawing IM03 BG 22 (Q) rev. 1. In discussion with the welder, the NRC inspector was informed that the RT pipe markings and film overlay sheets have been improved and the welder was confident he would find the defect where it was indicated to be with a minimum of grinding.
- e. A piping isometric drawing observed in use in the Reactor Building was checked for latest revision with document control. The drawing number observed was IM03 EC 02 (Q) rev. 5. Document control informed the NRC inspector that revision 5 was the current revision being utilized in the field.
- f. Several piping and hanger lay down areas and other storage locations were observed for control and protection of material and equipment. The NRC inspector found all areas to be in good order.
- g. The Essential Service cooling pond, dikes and the south dividing dike were visited by the NRC inspector. The dikes appeared in good order and water flow to the essential service pond was in progress. In discussions with KG&E engineers attending the ponds, the NRC inspector was informed that currently three transfer pumps at the Neosho River intake structure are pumping water to the cooling lake, and the engineers estimate that continued pumping at the current rate would fill the lake by the end of the year.

No violations or deviations were identified.

5. Follow-up on Licensee's Investigation of Improper Pipe Hanger Fabrication

a. Background

On April 6, 1981, the NRC (IE Headquarters Duty Officer) was informed by an allexer that a Daniel International Corporation (DI) pipe fitter foreman had instructed his subordinates to fabricate, on site, a safety-related pipe hanger from non-Q materials. The fabricated hanger was to replace the original hanger which was inadvertently destroyed.

The Region IV Office and the licensee investigated the allegation and determined that the hanger had been improperly fabricated as alleged and the foreman involved was terminated.

The licensee committed to conduct an investigation of all of the safety-related hangers installed by the crews which had worked for the terminated foreman. The objective of the investigation was to determine if other hangers had been improperly fabricated and to identify any other discrepancies in the hangers inspected. The licensee committed to discuss the progress of their investigation (re-inspection) with the resident inspector on a regular basis and with the RIV Deputy Director on a weekly basis. The licensee's reinspection began during the week of April 20, 1981, and was completed on May 15, 1981. The licensee found no evidence of additional hangers having been improperly fabricated, but did identify 25 hangers which had discrepancies requiring resolution.

b. Scope of this inspection effort

The scope of this inspection effort included:

1. A review of the licensee's method of identifying the hangers installed by the crews of the terminated foreman.
2. A review of the inspection records for the hangers that were re-inspected.
3. A review of selected weld control records for the hangers that were re-inspected.
4. A physical inspection of selected hangers which had been re-inspected.
5. Interviews with the QC inspectors (and their supervisor) who were involved in the re-inspection.

c. Inspection Findings

The NRC inspector found that the licensee had identified the hangers which were worked on by the terminated foreman's crew through the weld traveler log. Whenever a crew planned to work on a hanger, the crew foreman had to personally check out the weld traveler to document the crew's activities. The checking out of the travelers was recorded in the log, and a search of this log disclosed all of the hangers for which the foreman had checked out travelers.

The licensee found that the foreman's crews had worked on (or at least checked out the travelers for) 129 safety-related hangers in the Auxiliary Building and the Control Building. The inspections of these hangers were performed by DI QC inspectors. The inspectors were provided with special checklists to document the heat numbers of each piece (for material traceability), the welder ID numbers, and dimensions of the weld (actual and as indicated on the drawings).

The NRC inspector reviewed the inspection checklists for all of the hangers inspected. The inspection had disclosed a number of discrepancies involving missing or illegible heat trace and welder ID numbers. There was, however, no indication that any of the inspected hangers had been improperly fabricated. As indicated above, the licensee had committed to keep the Region IV Deputy Director informed about the progress of the inspection. It was found that the licensee's weekly reports were generally accurate. The NRC inspector did find, however, two discrepancies which had not been reported to Region IV. The inspector also reviewed the travelers and associated weld control records for 18 of the inspected hangers. The inspector also physically inspected 11 of the hangers. The NRC inspector's independent review essentially verified the results of the QC inspection. The differences were not significant and will be resolved in the corrective action committed to by the licensee.

Interviews with the QC inspectors, who performed the inspections, substantiated the stated scope and depth of the inspection effort. The results of the interviews added credence to the licensee's contention that the improperly fabricated hanger was an isolated case.

The licensee had not yet completed the deficiency reports (DR) to document the discrepancies that had been found. The NRC inspector was told that the DR's would be completed in mid-June 1981. In response to questions regarding the disposition of the discrepant hangers, the DI QC manager said that the hangers, which do not have traceable materials or welder identifications, will be removed and replaced with fully traceable hangers. This issue will remain unresolved until the NRC inspector has verified documentation of the discrepancies and the corrective action committed to by the licensee (482/81-08-01).

d. Weld Problems

During the review of the hanger checklists, the NRC inspector noted numerous examples of rejectable welds. Most of the rejectable welds were due to undersized welds. Licensee representatives said that based on weld problems which they had identified in small pipe and similar weld problems identified in their sister plant (Callaway),

they had begun a re-inspection of all hanger welds prior to the identification of the improperly fabricated hanger. Licensee representatives said that the reject rate on the hanger welds was about 40-50 percent.

It was noted that the large number of rejectable welds raised three concerns that the licensee needs to address. The concerns are:

1. The structural significance of the large number of weld deficiencies.
2. The implications regarding the apparent inadequacy in the training and/or performance of the site welders.
3. The implications regarding an apparent inadequacy in the training and/or performance of the QC inspectors who initially accepted the hanger welds.

Licensee representatives produced documentation which provided evidence that the structural question is being addressed. A licensee representative (DI QC manager) said that all of the defective welds would be repaired to specification and that the structural analysis was being sought to determine the reportability (10 CFR 50.55(e)) of the problem.

A licensee representative further noted that the weld performance problem had been previously identified by the licensee in the welding of small piping. He indicated that a task force had been established to resolve this issue and was beginning to show results.

At the time of this inspection no action had been taken to look into or resolve the questionable QC inspection issue.

The above concerns are considered to be unresolved and will be followed in detail by the Region IV staff. (482/81-08-02).

No violations or deviations were identified in this area.

6. Unresolved Matters

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. Two unresolved items, disclosed during this inspection, are discussed in paragraph 5.

7. Exit Interviews

The RRI met with licensee representatives identified in paragraph 1 to discuss the various inspection findings on May 28, 1981, and June 30, 1981.

The RRI attended an exit meeting conducted by Mr. J. E. Gagliardo, Director, Investigation and Enforcement Staff on May 28, 1981.