

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: STN 50-482/85-22

Construction Permit: CPPR-147

Docket: 50-482

Category: B1

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

Facility Name: Wolf Creek Generating Station

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

Inspection Conducted: April 23-25, 1985

Inspectors:

L. E. Ellershaw  
L. E. Ellershaw, Reactor Inspector  
Project Section A, Reactor Project Branch 2

7-18-85  
Date

G. L. Madsen  
G. L. Madsen, Reactor Inspector  
Project Section A, Reactor Project Branch 2

7-18-85  
Date

Approved:

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

7/22/85  
Date

Inspection Summary

Inspection Conducted April 23-25, 1985 (Report STN 50-482/85-22)

Areas Inspected: Routine, announced inspection of the followup on allegations. The inspection involved 50 inspector-hours onsite by two NRC inspectors.

Results: Within the areas inspected, no violations or deviations were identified.

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DETAILS1. Persons ContactedKansas Gas and Electric Company (KG&E)

W. J. Rudolph II, Manager, Quality Assurance (QA)  
R. M. Grant, Director, QA  
C. A. Snyder, Manager, Quality First  
H. Curry, Supervisor, Quality Control Inspections  
D. Madsen, Quality Control Engineer

The NRC inspectors also interviewed other site personnel during the course of the inspection.

2. Followup on Allegations

- a. (Closed) Allegation 4-84-A-019: The alleged indicated several items of concern principally relating to structural construction. Findings relating to these items follows:

- (1) The alleged indicated that material traceability of structural steel shims was not verified during installation and shim plate sizes may be questionable.

Material traceability (in terms of heat numbers) is not generally considered important since shims are always compressively loaded. Any traceability required would relate to providing a degree of assurance that shims are of a weldable material, since shims are usually welded to assure they will remain in place. The resolution of the structural welding issue has provided adequate assurance that shims are weldable and therefore no further action is warranted. Shim material was a subject included in CAR (Corrective Action Report) 46 which was reviewed by the NRC.

This allegation was considered substantiated, however, there is no safety significance. The licensee's corrective actions to resolve this issue were satisfactory.

- (2) It was alleged that structural steel inspections were not accomplished because of a breakdown in assignment of responsibilities, and QC supervision attempted to cover-up the situation by coloring in control status drawings to show that work had been done.

The above information precipitated an extensive NRC inspection which subsequently substantiated that the inspection program for safety-related structural steel welds was not adequately executed to assure conformance to the requirements, nor were

adequate records kept to document the quality of the welds. The attempted cover-up was investigated by the Office of Investigations and will be documented in a subsequent inspection report.

As a result, the NRC issued a Notice of Violation and an Imposition of Civil Penalty.

KG&E's corrective action included a 100% reinspection of all accessible safety-related structural steel welds. All of the actions required to be taken by KG&E in order to provide adequate resolution to the structural steel welding issue, were performed and are documented in their Final Report Corrective Action Request No. 19, dated January 21, 1985. The NRC performed verification of KG&E corrective actions and documented this activity in NRC Inspection Reports 50-482/85-12 and 50-482/85-13.

This allegation was substantiated, however, appropriate corrective action was taken.

This item is considered closed.

- (3) It was alleged that KG&E's surveillance report S-372 did not adequately address the failure to inspect and/or document the results of structural steel inspections.

Surveillance report S-372 was a precursor to Daniel International Company's (DIC) Corrective Action Reports (CAR) 29 and 31, and subsequently to KG&E's CAR 19. The major findings identified in the surveillance report dealt with electrical support weld inspection documentation. The resolution of the structural steel welding problems has satisfied the technical elements of this item.

This item is considered closed.

- (4) It was alleged that pipe whip restraints were inspected/signed off in a manner similar to structural steel.

CAR-19 was written primarily to address weld deficiencies and missing inspection documentation relative to the structural steel welding program. To assure that problems similar to those identified in structural steel did not exist in other safety-related programs using AWS D1.1 welding, CAR-19 was expanded to require an analysis of those programs, including pipe whip restraints. This effort revealed no similar conditions or causes generic to the pipe whip restraint program.

Programmatic elements utilized in the inspection and documentation of the various applications of AWS D1.1 welding

differed depending upon the Quality discipline responsible for inspection activities. Nondestructive examination (NDE) was identified as a differing element of the pipe whip restraint program. It was determined that pipe whip restraint welds were 100% nondestructively examined and accepted. There were no identified instances of missing NDE reports.

This item is considered closed.

- (5) The allegor indicated that inspection of structural steel bolting was neglected in the radwaste and turbine buildings. Originally these buildings were a part of CAR 26; however, both buildings were subsequently deleted from the scope of CAR 26.

A review of records revealed that the radwaste and turbine buildings were deleted from the scope of CAR-26 in that the purpose of the reinspection program was to determine the status of high strength bolting connections in safety-related structures. The turbine and radwaste buildings (Non Category I structures) were deleted from the scope of CAR 26 based on DIC engineering disposition of deficiency report ISD-7844C.

- (6) The allegor alludes to the improper torquing of the bolts for the rail clips on the Polar Crane or the possible falsification of the inspection records by the day shift inspector who got sick the one time he did go up on the Polar Crane to inspect these bolts. The allegor also said that the second shift QC inspector worked very hard on inspecting these connections, while the day shift inspector did nothing.

A review of the time and attendance records and site first aid records of the individual that allegedly did not perform the above inspections or possibly falsified the inspection records confirms that the inspector did get sick while working on the Polar Crane rail and was subsequently helped down and taken to first aid on site. The inspector did not return to the site for approximately three weeks.

A review of the inspection documentation for the Polar Crane indicates that this inspector had inspected torquing of the rail clip bolting on the one day in question. Structural drawing E-122 also provides positive indication that the other inspections were performed by two other inspectors.

A subsequent interview of this inspector, by OI, confirmed that this inspector had only inspected the torquing of these bolts on the one occasion. Structural drawing E-122 and its attachments also indicates that the bolted connections, after initial alignment were to be welded, which was accomplished.

The allusion to improper inspection or possible falsification of the inspection records for the torquing of the bolts in the clips for the Polar Crane rail was not substantiated.

- (7) It was alleged that bolting holding down fuel rod storage containers had no inspection documentation and the prints were marked up wrong.

Installation of the New Fuel Storage Rack assemblies was controlled and documented on Westinghouse Installation/Fabrication Traveler SAP-WC-018, revisions 0 and 1. Pages 4 and 5 of revision 1 to the traveler document the installation and inspection of bolting and torquing requirements as evidenced by the initials of the operator and the Quality Assurance Engineer, with dates.

The installation of the Spent Fuel Storage Rack assemblies was controlled and documented on Westinghouse Installation/Fabrication Traveler G-SAP-WC-030, revision 0. Pages 10, 11, 14, and 15 of the traveler document the installation and inspection of bolting and torquing requirements as evidenced by the initials of the operator and Quality Assurance personnel, with dates.

This item is considered closed.

- b. (Closed) Allegation 4-85-A-44: The allegor stated that there had been a failure to conduct routine audits of onsite contractors at the required frequency. The FSAR for Wolf Creek states that the management of each SNUPPS' utility is to assess the scope of implementation and effectiveness of the QA program to assure adequate compliance with the utilities' policies and with 10 CFR 50, Appendix B. This assessment will be conducted every six months during the first two years that the program is implemented. Thereafter the evaluation process will be performed on an annual basis. This evaluation process may include audits performed by the utility personnel or outside consultants.

KG&E Quality First received a similar concern from the allegor; however, the concern was focused on procedures in the KG&E construction procedure manual. Quality First investigations disclosed that construction procedures govern activities which are a duplication of quality related functions which are subject to QA audits or in the case of Procedure KP-4503, do not control a quality related function. Quality First determined that a QA audit of the KG&E construction procedure manual is not required. The allegor was contacted by Quality First on January 18, 1985, at which time he acknowledged the receipt of a written summary regarding this concern and he indicated no problem with the findings regarding this item.



During the period 1977-1985, KG&E corporate and onsite QA conducted some 190 onsite audits and 1040 surveillances of Wolf Creek construction activities. In addition to the audits performed by KG&E, the site constructors performed some 545 audits of their own activities.

On the basis of the above, the audit and surveillance of onsite construction is considered adequate.

- c. (Closed) Allegation 4-85-A-45: The allegor indicated several items relating principally to electrical activities. Findings regarding these items follows:
- (1) The allegor indicated that equipment was moved from the warehouse to the field without proper handling and installation procedures. A review of warehouse maintenance and QC inspection records revealed damage to Power Supply Inverter NN13 which had been identified and corrected. However, Quality Inspection personnel failed to initiate the appropriate corrective action documents. In spite of the oversight, the Quality Program identified, resolved, and inspected the deficiency. In order to substantiate the acceptability of the equipment, KG&E QC and QA personnel performed a visual inspection of Inverter NN13 on May 1, 1985. No evidence of damage associated with this allegation was found.
  - (2) The allegor indicated concern about the turnover of the procurement program to KG&E as related to the KG&E Vendor Control and spare parts program. The allegor indicated a concern that the KG&E QA group was performing inadequate reviews of Bechtel and Westinghouse procurement.

The concern relating to vendor program control is believed to be related to the control of vendor instructions manuals which were shipped with the equipment and were taken to the field without benefit of proper approval or control. This concern was identified on November 14, 1984. QC investigations, to determine if procedural control was in place for transmitting vendor generated documents from WCGS Receiving to Document Control for processing, revealed that QCP 7.1, Revision 1, failed to provide instructions for transmittal of Vendor generated documents. QCP 7.1, Revision 2 was initiated on December 17, 1984, to correct this condition.
  - (3) The allegor is concerned over the use of a ground bar used for instrument ground where other grounds are terminated.

Isolated Grounding for Instrumentation is governed by the following documents:

1. WP-XI-300, "Installation of Electrical Equipment and Instrumentation," Revision 9
2. WP-X-301, "Grounding," Revision 3
3. Bechtel Drawing E-OG8900, "Grounding Notes, Symbols and Details," Revision 13
4. IEEE Standard 446, "IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems"

The Inspection of Isolated Grounding for Instrumentation is governed by:

QCP-XI-300, "Inspection of Electrical Equipment,"  
Revision 12

The NRC inspector reviewed the above documents and determined that they were satisfactory.

The isolated grounding system at WCGS is primarily for the purpose of providing a noise free insulated isolated grounding method for instrumentation through a very low impedance path to station ground. The inspector could not identify within the above documents any prohibition against other grounds being terminated on the same ground bar that is used for instrument ground. The technical merits of this concern would only be relevant if it could be identified that a specific non-instrument ground, in fact, resulted in noise being induced into the ground circuit of such a magnitude that the low impedance cable connecting the ground bus to the station ground mat was not properly sized. This would result in a spike being induced into the instrument ground. This spike in and of itself would be highly attenuated due to parallel paths.

This allegation lacks specificity sufficient to pursue in depth, and the grounding practices are typical of those utilized elsewhere in the power industry.

- (4) It was alleged that cables were generally routed over sharp edges at all elevations in the cable spreading rooms.

The NRC inspector conducted an inspection of the two cable spreading rooms in the control building in order to assess the validity of the allegation. Forty cable trays in both the lower spreading room at elevation 2032' and the upper spreading room at elevation 2073' 6" were observed. There were no instances identified where either cables were routed over sharp

edges or that the minimum bend radii had been exceeded. Where cables either entered or exited a cable tray from the side, a cable tray edge guard had been installed.

This item was not substantiated and is considered closed.

- (5) It was alleged that a cable tray in the reactor building had not been cleaned before the covers were put in place. The cable tray location was described as being at floor level to the left of the main personnel hatch two or three levels down, and passing through a wall separating two large tanks.

Reactor building drawings were reviewed to determine the specific cable tray involved and location. A cable tray was located that passed through a wall separating the accumulator tanks. The cable tray was identified as IU2A, and located at the 2009' elevation of the reactor building. The NRC inspector requested that the covers be removed from the four segments of the cable tray in order to observe the internal cleanliness condition. Covers were removed from segments IU 2A-39, -40, -41, and -42. With the exception of some dust, there was no debris observed.

This item is not substantiated and is considered closed.

- (6) The allegor indicated that the inspectors inspecting anchor bolts had neither the proper training nor procedures. It was indicated that a QC inspector had resigned on March 21, 1983, prior to submitting an NCR relating to this matter. He questioned KG&E's corrective action and whether a CAR was issued. He felt that corrective action should include a random audit with pull tests and a review of anchor bolt certifications. He stated that there had been two companies furnishing anchor bolts (one safety-related and one nonsafety-related). He questioned whether or not KG&E maintained proper segregation.

DIC NCR ISN-9711E, dated March 26, 1983, was initiated to address the issue of "improper training and procedures" to govern inspection of expansion anchor bolt installation. This NCR was voided with the following justification: It is the employer's responsibility to qualify the inspectors in each discipline for certification. DIC Quality inspection management reviewed the program in question and determined that the electrical support certification program was adequate for the required anchor bolt inspection criteria established at the beginning of the program. All inspectors were trained and tested prior to being certified and performing any inspections. The approved Architect Engineer disposition of DIC NCR #ISN 3476C, dated July 30, 1981, provided additional installation and inspection criteria to governing documents in effect at that



time. As specified in the approved disposition of DIC NCR #ISN 9711E ". . . All inspectors participating in the program were trained and tested to this criteria prior to being certified and performing any inspections."

A review of DIC Purchasing and Warehouse records revealed that concrete expansion anchor bolts were purchased as safety and nonsafety-related. The primary manufacturer was RAMSET. Some safety related bolting was purchased from Robert Isray Co. These expansion anchors were "Hilti Cinch Anchors." These expansion anchors were subsequently found to be incompatible with site installation procedures and were returned for salvage.

Warehouse storage maintenance practices for segregation of safety and nonsafety-related bolting material is accomplished by storing nonsafety-related bolting material in the area designated as "Tool Room". This area is located on the south end of the warehouse. The safety-related bolting material is stored in the north end of the warehouse. All safety-related expansion anchor bolts are "Trubolt" as manufactured by RAMSET. Visual inspection of the safety-related storage area would readily identify nonsafety-related material inadvertently placed in this area. In addition, all nonsafety-related expansion anchor bolts purchased from RAMSET are "Dynabolts". Though similar in appearance to the RAMSET "Trubolt," the difference is also readily apparent.

Based on the information noted above, it was determined that no corrective action is deemed necessary.

- (7) The allegor stated that there were splices inside of cabinets that were not being properly documented. The cabinets described appear to be located in the vital instrument power rooms. The cabinets were described as being located in a series of small rooms.

The NRC inspector visually inspected cabinets NN01, NK51, NK51A, NK41, NK43, NN03, NK03, NK44 and NK54 in the battery equipment rooms.

Splices were observed on cables IRPK09DA and IRPK09DB in cabinet NK41 and on cables 4RPK09DA and 4RPK09DB in cabinet NK44. A review of electrical termination document E-17000A revealed that pigtail splices were authorized for the subject cables in that the conductor wire size was too large to terminate on equipment terminal blocks or other connection means.

- (8) The allegor related concerns relative to the routing and termination of electrical cables within cabinets. He recalled blue Honeywell cabinets located halfway into the auxiliary

building on the main level as good examples. He indicated that cables in the cabinets were in thick bundles and were laying over the troughs. He stated that some terminations broke on moving cable during a walkdown inspection and indicated the details were in the walkdown notes. He indicated that hairline cracks in lugs were noted and that terminations in the upper level of the pool area were the best examples.

The NRC inspector visually inspected Honeywell Cabinets RJ 160A, B, C and D and RJ 159 A, B, C and D in the south and north penetration rooms on elevation 2026 feet. The inspection revealed no evidence of cable laying over troughs or hairline cracks in lugs. The inspector noticed the presence of a tag within cabinet RJ-159A which indicated lug bends greater than 45 degrees on six cables and referenced Work Request 16654-84 dated December 21, 1984.

A review of the allegers walkdown record dated September 26, 1983, included identification of discrepancies similar to the subject allegations. Records indicate that a reinspection was performed on October 24, 1984, and the conditions were found to be acceptable. However, upon correction of cable training, construction lugs were found bent past 45 degrees. WR 16654-84 was issued for six cables within cabinet RJ 159A. Reinspections of cabinets revealed eight additional lugs bent beyond 45 degrees. These additional damaged lugs were added to WR 16654-84. WR 16654-84 was closed on January 27, 1985.

Inspections of cabinets on the upper levels of the fuel pool building failed to reveal cracking of termination lugs as indicated by the allegers.

### 3. Exit Interview

The NRC inspectors discussed the scope and findings of the inspection, with Messrs. R. M. Grant and W. J. Rudolph on April 25, 1985.