

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

Report: STN 50-482/82-09

Docket: STN 50-482

Category: A2

Licensee: Kansas Gas and Electric Company
P. O. Box 208
Wichita, Kansas 67201

Facility Name: Wolf Creek Generating Station

Inspection At: Wolf Creek Site, Burlington, Kansas

Inspection Conducted: May 1 through June 30, 1982

Inspector: J. P. Jaudon 6/14/82
for F. E. Wandel, Senior Resident Reactor Inspector Date

Approved: J. P. Jaudon 6/10/82
J. P. Jaudon, Acting Chief, Reactor Project Section C Date

Inspection Summary

Inspection Conducted May 1 through June 30, 1982 (Report STN 50-482/82-09)

Areas Inspected: Routine, announced inspection by the Senior Resident Reactor Inspector (SRI) covering licensee action with regard to construction deficiency reports (50.55(e)), IE Bulletins and Circulars, and previously identified inspection findings; review of welder qualification activities; review of instrumentation program procedures; observations of instrumentation installation activities; review of safety-related piping traveler documentation; and general plant tours. The inspection activity involved 152 inspector-hours by the SRI.

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

DETAILS1. Persons ContactedPrincipal Licensee Personnel

- A. L. Beat, QA Technician III, Kansas Gas and Electric (KG&E)
- *R. A. Bird, QA Engineer, Wolf Creek Generating Station (WCGS)
- *P. M. Burck, QA Engineer, WCGS
- E. W. Creel, QA Manager, Corporate, KG&E
- *J. V. Palermo, Assistant Construction Manager, Kansas City Power & Light
- *G. L. Fouts, Construction Manager, WCGS
- *C. J. Stewart, QA Scheduling Clerk, KG&E
- *D. A. Colwell, QA Technologist, WCGS
- W. A. Eales, Jr., Project QA Coordinator, KG&E
- O. L. Maynard, Senior Engineer, Licensing, KG&E
- *C. E. Parry, QA Systems Supervisor, WCGS
- *D. W. Prigel, QA Manager, WCGS
- *G. W. Reeves, Assistant QA Manager, WCGS
- *J. L. Stokes, Project Support Supervisor, Construction, WCGS
- *O. L. Thero, QA Surveillance, Supervisor, WCGS

Other Personnel

- *J. M. Harvey, Construction Manager, Daniel International Corporation (DIC)
- G. Martin, Instrumentation Engineering Lead Manager, Westinghouse, (W)
- D. Kent, QA Manager, Site, W
- *C. D. Mauldin, Project Quality Engineer, DIC
- *C. E. Hackney, Senior QA Engineer, DIC
- A. Saleido, ASME Code Coordinator, W
- *B. G. Stennett, Senior QA Engineer, DIC
- *V. J. Turner, Project Quality Engineer, DIC
- *J. L. Walker, Hartford Steam Boiler, Authorized Nuclear Inspection

*The above identified personnel attended one or more of the management meetings held on May 14 and 27, June 8, and July 1, 1982.

Other licensee and contractor personnel were contacted during the course of inspection activity.

2. Licensee Actions of Previous Inspection Findings

(Closed) Unresolved Item (STN 50-482/8206-01): Weld buildup of pipe counterbores shall be treated as a weld repair of material under ASME B&PV Code, Section III, and nondestructively examined (as provided by ASME Code Interpretation III-1-79-14). Daniel personnel issued an Interim Change to Procedure (ICP) Number ICP 525, Revision 0, to Construction Welding Procedure (CWP) 504, Revision 10, that adds to paragraph 8.2.2 the requirement that "Weld prep areas on ASME III Piping which have been buttered shall be PT/MT inspected." This procedure change will be automatically incorporated into the applicable procedure. Daniel response, dated May 17, 1982, to KG&E Surveillance Report S-478, open item from NRC Report STN 50-482/82-06, stated that only one other ASME fitting, in addition to the one identified in Surveillance Report S-478, had been buttered due to minimum wall violation caused by counterboring. This operation was performed in accordance with CWP 504, and, in addition, the buttered area had been examined and accepted by PT.

This item is closed.

3. Licensee Activity on 50.55(e) Items, IE Bulletins and Circulars

a. 50.55(e) Deficiency Report Items

(1) Gulf and Western Piping Assemblies (file # 53564-K07)

The rework of the rejected 32 safety-related piping assemblies has been completed and the reworked spools are now back on site.

The licensee, in their final report KMLNRC-82-216, dated June 30, 1982, had reviewed and accepted the assemblies for use in safety-related systems.

An NRC inspector conducted a review of the radiography results of the reworked spools in conjunction with an unresolved item identified in NRC Report STN 50-482/79-09 (79-09-003), the results of which are included in NRC Report STN 50-482/82-06.

This item is closed.

(2) Gould Nema 3 Starters (file # 53564-K16)

The deficiency in regard to faulty Nema 3 starters was reviewed again (previously reported in NRC Reports STN 50-482/81-02, 81-05, and 81-19). A discrepancy had previously been identified as to the total

number of starter units in which the carrier assemblies had been replaced. Four nonconformance reports (NCR's) identified the faulty carrier assemblies that were replaced as follows:

- . 1SN1275E listed 15 starters for safety-related equipment in which the carrier assemblies were replaced.
- . 1NN1274E listed 18 starters for nonsafety-related equipment in which the carrier assemblies were replaced.
- . 1NN1426ER listed 6 starters for nonsafety-related equipment in which the carrier assemblies were replaced.
- . 1NN1373ER listed 35 starters for nonsafety-related equipment, 34 of which had the carrier assemblies replaced. One starter unit DCGE07E for a nonsafety-related piece of equipment was listed as Nema 3 starter with a carrier assembly to be replaced. The remarks column had a note stating that the carrier assembly had not been replaced since the modified carrier was already installed in the unit (noted by the manufacturer with a white dot on the assembly).

Therefore, although a total of 74 Nema size 3 starters were involved, only 73 carrier assemblies were actually replaced with the one nonsafety-related starter unit left without its carrier assembly having been replaced.

This item is considered closed.

(3) Fuel Pool Liner Plates (file # 53564-K19)

Leak chase channels in the refueling pool liner had previously been pressurized by construction error, and liner plate buckling had occurred. Even though the liner plate is a nonsafety-related piece of equipment, this deficiency was reported and will be investigated as for affected safety equipment. It was found that concrete damage had occurred, with the top 4-6 inches of concrete (safety-related) damaged. The A-E assessment of the damaged concrete was that the damage to the concrete was not significant, and that this item is no longer considered to be a reportable deficiency. The NRC inspector agreed with that assessment.

(4) GE Switchgear Wiring - Incorrect Color (file # 53564-K35)

This item has been the subject of NRC inspector review with a deviation being cited in NRC Report STN 50-482/81-05 and followup review and closeout of the deviation in NRC Report STN 50-482/81-17.

General Electric Company (GE) supplied Class 1E 4160 volt switchgear (NB01) with their own standard sleeves and wire (yellow and gray). This was for primary separation group 1 (red) with the exception that in Cubicle NB0116, there are 10 wires that are separation group 4 (yellow). GE obtained approval from the A-E to use green as a distinct identification for the minority separation group. The deviation cited in NRC Report STN 50-482/81-05 noted the failure to comply with the commitment in the FSAR in that Section 7.1.2.3 stated, as standard, the following:

"Protection Set I	Separation Group 1:	Red with white lettering
Protection Set II	Separation Group 2:	White with black lettering
Protection Set III	Separation Group 3:	Blue with white lettering
Protection Set IV	Separation Group 4:	Yellow with black lettering
	Nonsafety-related:	Black with white lettering"

While the Bechtel Specification 10466-E-009, Appendix 7, Revision 6, paragraph 5.2.2 states, "Wiring of the various separation groups within the switchgear shall be identified (color-coded) in accordance with the following:

"Separation Group 1: Red
Separation Group 2: White
Separation Group 3: Blue
Separation Group 4: Green"

The resolution reviewed and reported in NRC Report STN 50-482/81-17 acknowledged Revision 6 of the FSAR, modifying Section 8.3.1.3, to be consistent with the Bechtel specification and eliminated the deviation cited. The NRC inspector further stated in NRC Report STN 50-482/81-17 that the 4160 volt switchgear was consistent with the Bechtel specification.

The SRI noted that the A-E approved green color as a distinct identification of the minority separation group and is acceptable for the current FSAR requirement in Section 8.3.1.3 as follows:

"In cases where the majority of the wiring within a cabinet or panel is primarily one separation group, standard color wire and/or sleeves for the majority separation group is used. The remaining wiring is identified, using the appropriate color, as defined in applicable specifications or drawings."

The licensee's final report concludes that "had this condition gone unreported, no unsafe condition would have resulted at any time."

This item is considered closed.

(5) Dispersive Soils (file # 53564-K42)

Sampling of the ultimate heat sink (UHS) dam materials indicated that the materials were typical of a dispersive clay rather than non-dispersive as expected. A consultant who was contracted by the A-E stated in conclusion:

"The UHS dam should be completely safe. With 4:1 side slopes, excavation to impervious bedrock, and presence of a sand filter at the downstream side, the likelihood of piping due to erosion is negligible. The reservoir should be filled first with water on only one side and the downstream toe be kept dry for observation."

The licensee proceeded, as instructed, to fill the UHS dam area prior to filling the surrounding lake area. As committed in writing, timely notification was provided to the NRC for their observation. No leakage was observed at the toe of the dam.

This item is considered closed.

(6) Undersized Socketwelds (file # 53564-K45)

Some socketwelds for ASME III Code piping were determined to have been deficient per the code even though having been inspected and accepted. Approximately 10 percent of previously accepted welds were determined to be rejectable. Daniel Procedure WCP-VII-200 was determined to be deficient in that it did not clearly state the requirement for 360 degree sweep inspection by measurement and throat determination. Therefore, the welds were being accepted by a sampling inspection of each weld.

The SRI review of the current revision of the procedure established that the above requirement is not in the procedure. It appeared that a previous revision (Rev. 7) had incorporated the requirement; however, the requirement apparently was dropped in subsequent revision.

This construction deficiency item remains open for future review.

(7) Reported Deficiency Items Reviewed

Other deficiency items were reviewed but remain open for further review upon completion as follows:

- . Fisher Control Valves (file # 53564-K52)
- . GE AKR-30 and AKR-50 Breakers (file # 53564-K52)
- . GE AKR-30 and AKR-50 Breaker Springs (file # 53564-K58)

b. Bulletins and Circulars

The SRI conducted a review of IE bulletins and circulars. None reviewed were deemed inadequate in terms of licensee response, handling, and corrective action. Listed below are the bulletins and circulars reviewed.

- . Bulletins 79-12, 78-12A, and 78-12B, "A typical Weld Material"
- . Bulletin 78-14, "Buna-N Components in Asco Solenoids"
- . Circular 78-03, "Packaging Radioactive Material for Transport"
- . Circular 78-05, "Inadvertent Safety Injection"
- . Circular 78-06, "Potential Common Mode Flooding"
- . Circular 78-08, "Environmental Qualification"
- . Bulletin 79-02, 79-02R, "Pipe Support Base Plate Design"
- . Bulletin 79-03, 79-03A, "Weld Defects in ASME 312 SS Pipe"
- . Bulletin 79-04, "Incorrect Weight Velan Swing Check Valves"
- . Bulletin 79-07, "Seismic Stress Analysis of Safety-Related Piping"
- . Bulletin 79-08, (Applicable to BWR's)
- . Bulletin 79-09, (Not applicable to Wolf Creek)
- . Bulletin 79-10, (Not applicable to Wolf Creek)
- . Bulletin 79-11, "Faulty Overcurrent Trip Device"
- . Bulletin 79-12, (Applicable to BWR's)
- . Bulletin 79-13, "Cracking in Feedwater Piping"
- . Bulletin 79-15, "Deep Draft Pumps"

No violations or deviations were identified.

4. Instrumentation

Instrumentation installation activity in progress was reviewed during the reporting period with the following results:

a. Westinghouse Program

The Westinghouse Nuclear Service Division Nuclear Code Quality Assurance Program Manual, control copy number 32, was reviewed for application to the instrumentation work. The licensee's assessment and approval of the program were reviewed and discussed with the KG&E QA coordinator. It was learned that the program manual was reviewed in 1980, and the program was accepted by letter, dated July 3, 1980. This letter of acceptance to Westinghouse stated, in part, ". . . acceptable work at Wolf Creek site is covered under the Westinghouse Nuclear Services Division ASME Certificate of Authorization." In response to questioning by the SRI, it was found that this program was deemed acceptable and authorized by the licensee for instrument installations.

The SRI, after review of the manual, accepted the licensee's position.

b. Westinghouse Installation Control

A detailed review was conducted of the Westinghouse Procedure QAP No. 5.0, Revision 4, effective December 1, 1981, of "Control of Installation/Fabrication Processes", and its application to the selected sample of RHR flow sensing piping at the RHR heat exchanger EEJ01B. The Bechtel defined scope of work included, as shown on Isometric Drawing M-03EJ02(Q), Revision 2, was installation of sensing lines, transmitters, and instrument cable terminations. The documentation reviewed, included the following:

- . Traveler Package Number SAP-J-04EJ06
- . Concrete expansion anchor installation instruction
- . Material list
- . Sequence sheets
- . Reference list for specifications, procedures, and drawings
- . Weld status log

It was recognized that the installation was not yet complete and, therefore, only part of the required information and sign-offs had been completed.

c. Licensee Audit/Surveillance

The SRI was informed of quality assurance auditing and surveillance activity performed during the reporting period. Those activities included the following:

- . Daniel International Corporation (DIC) Audit Report No. 81 included an audit of "Instrumentation - Safety-Related" (paragraph 3) that established an open item regarding adequacy of DIC procedures.
- . KG&E Surveillance Report Number S-523 documenting the surveillance activity conducted to date of the Westinghouse installation work.

d. Installation Review

RHR system flow sensing instrumentation installation, at the RHR heat exchanger EEJ01B, located in Cell 1309, was inspected by the SRI. Although the installation was incomplete at the time of the inspection, the following installation activities were observed:

- . Sensing line runs installed from the flow element (flow orifice) root valves FE 611, FE 619, and FE 988 to transmitters mounted outside the cell
- . Sensing line connections to flow transmitters EJ FIS 611, EJ FT 619, and EJ FIT 988
- . Flow transmitter wall mounted field installation
- . Instrumentation cabling connected to two of the three transmitters (FT 619 and FT 988)
- . Conduit and junction box installation for the instrument cabling.

It was observed that instrument cabling identification, redundant channel color coding, and appropriate separation of channels had been provided for the instrument cabling; however, no provision had been included for the extension of the identification and color coding to the sensing lines.

Identification of protection system instrument sensing lines has been the subject of discussion with NRR Instrumentation and Control Systems Branch (ICSB) and Licensing Project Management Branch (LPM) for the SNUPPS projects. The position has been offered by a draft memorandum prepared by E. Rossi, ICSB, that appropriate identification and distinguishing between redundant channels (color coding) is required in order to assure that sensing lines for redundant protection channels are appropriately separated and protected from external hazards. In support of this view, IEEE 279-1971 states "For purposes of these criteria, the nuclear power generating station protection system encompasses all electric and mechanical devices and circuitry (from sensors to actuation device input terminals) involved in generating those signals associated with the protective function." In addition, it is believed that Sections 4.5, "Channel Integrity," and 4.6, "Channel Independence," are applicable to sensors and sensing lines.

This matter of identification for sensing lines and wall mounted transmitters, as well as appropriate separation requirements, remains unresolved subject to clarification by NRR and/or licensee commitment. (8209-01)

No violations or deviations were identified.

5. Welder Qualification

a. Review

The SRI performed a review of the qualification activities for welders to access the day-to-day controls that assure that a welder undergoing qualification testing is actually the individual performing the welding.

The following controls checked by the SRI are outlined in the Daniel International Procedure CWP-502, Revision 9, "Qualification of Welders."

- (1) All welders to be tested are placed on the list for qualification by the mechanical superintendent (welding). The results of testing go to the superintendent who then adds the welder to the qualified list.
- (2) The tool room attendant, who issues the test coupons, stamps each weld test piece with the welder's badge number and the test position when issuing a test coupon. He also stamps the bend test specimens with the welder identification (ID), technique, and weld positions.
- (3) The test shop welding general foreman supervises each performance test, conducts the bend tests, and completes the Form W-103, "Qualification Test Record."

- (4) The Daniel quality inspector (QI) visually inspects the completed test coupon, including markings, observes the bend tests, and records the results of testing on the QCP 150 form.
- (5) The QI also checks the ID listed on the forms against the ID stamped on test coupons.
- (6) If the test coupon (pipe) is to be radiographically inspected (RI), the NDE technician performing the RT places the welder ID information and qualifying technique on the RT film.
- (7) The standard weld rod control form (W-100) is filled out by the general foreman-welding, including the welder ID to permit the welder to draw rod. This form is maintained as a record separate from the qualification verification forms.

b. Checks

The SRI conducted several sampling checks of qualifying activities for assurance of controls as follows:

- (1) Welder D-622 was asked to show his ID badge. The badge, ID Number 70-270, which included the welder's picture, was confirmed as being the welder and being the ID number shown on the W-103 form and as stamped on the coupon.
- (2) A set of bend tests was reviewed and it was confirmed that the correct information was reflected on the records and that the documented results were factual.
- (3) Radiographic film of a welder's coupon inspected by RT was reviewed. The welder identified above, Badge Number 70-270, had completed a piping test coupon observed by the SRI. This coupon was required to be RT examined in accordance with ASME, Section IX. The completed RT film (2 sets of 4 film) was reviewed by the SRI along with the Daniel Level II interpreter. The identification on the reader sheet, the NDE request tag, and each film included the welder number (D-622), the welder badge identification number (70-270), and the technique being qualified (N-1-1-BA-1). The radiography report (reader sheet) Number PBT-RT-7931, dated May 25, 1982, indicated that the welding was acceptable. The SRI observed the Daniel Level II interpreter review, the film and reader sheet, and accepted the indicated results by sign-off of the reader sheet.

c. Conclusion

The SRI concluded that sufficient checks and controls were established that would detect any intentional compromise of required performance qualification controls.

No violations or deviations were identified.

6. Piping Travelers Review

The SRI conducted a review of piping travelers for safety-related piping. Component cooling water system piping shown on Isometric Drawing M03 EG26 (Q), Rev. 1, was utilized for the sample selection. The ½-inch pipe spools (numbered SP526 and SP527) were installed from the orifice taps associated with flow element FE-89 to the root valves V239 and V240. Review was conducted of the travelers for the piping fabrication (P travelers) and of the travelers for the installation work and inspection (I travelers). The following items were reviewed:

- . Daniel Drawing Sheet D-1, C-MO-3EG26 (Q), Revision 12
- . Piping material sheets for pieces PC 626 and 627
- . Fabrication and installation welds records for W612, W613, W614, W615, W616, FW617, W618, W619, W620, FW621
- . Welding records for seal welding of orifice FE-89; FW662, FW663, FW664, FW665

The latest inspection signoff was for the visual inspection of the orifice seal welds on May 18, 1982.

No violations or deviations were identified.

7. Plant Tours

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

a. Fire Prevention and Protection

The SRI performed fire protection checks throughout the plant during the course of several plant tours during the month. The individual items checked are as follows:

- . No unnecessary accumulations of combustible material (from lumber, packaging materials, wood scaffolding, etc.) were identified in the auxiliary building or in the control building.
- . Fire protection and suppression equipment was checked. This included: six fire extinguishers checked were found to be current for reinspection control; eight post indicator valves (yard valves) were checked with all but one observed to be open and locked, while one was locked closed (PIV-35) due to construction activity on the fire water line.

b. Electrical Cable Terminations

The SRI observed cable terminations of the 4160 volt feeders for the containment spray pump (DPENOIA) and for the safety injection pump (DEPMOIA) at the 4160 volt Class 1E switchgear. The 250 MCM 3-single conductor feeders for pump motor were in the process of being penciled bare at the ends, tied to bus terminals, and installed in Cubicles NBO102 and NBO103 of the switchgear. Although no stress cones were required by the Bechtel specification, the tape insulation was built up in the preferred stress cone shape.

c. Lifted Lead Tagging

In review of control room main control consoles RL 23, RL 24, RL 25, KL 26, RL 27, and RL 28, it was noted that a number of indicating instruments were absent from the control board and the attaching leads were loose but tagged for the proper instrument. The noted missing indicators were as follows:

- . CC TI-28
- . AE FI-540A
- . AE FI-521A
- . AE FI-510A
- . AD PI-25
- . AC PI-505

In response to inquiry, it was learned that DIC Deficiency Report (DR) 1SD7461E was issued on July 23, 1981, that identified the above listed indicators, among others, as requiring vendor rework. It was further learned that, although the vendor had attached tags that indicated the appropriate instrument number for the leads, permanent lead tags were in place on the leads at the terminal lugs. The DR remains in an open status as of this writing.

No violations or deviations were identified.

d. Post Tensioning Tendon Installation

Vertical tendon V-28 was observed recoupled while the permanent shims were in the process of being realigned. The SRI observed the return to the proper tension load for the tendon.

e. Cable Damage Review

The SRI requested a computer printout for cable damage listed by nonconformance reports (NCR's) or by (DR's) for 1978 through 1982. It was found that although a string of reports were recorded in June 1981 for cable cuts (eight), no further trends were identified.

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. One unresolved item disclosed during the inspection is discussed in paragraph 4.

9. Exit Interviews

The SRI met with licensee representatives denoted in paragraph 1 in conjunction with Region IV engineering inspectors on May 14, 1982, and May 27, June 8, and July 1, 1982. The scope of inspection activity and the resultant findings were discussed with the licensee representatives.