

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/82-09(DETP)

Docket No. 50-483

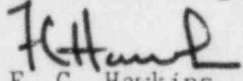
License No. CPPR-139

Licensee: Union Electric Company
P. O. Box 149
St. Louis, MO 63166

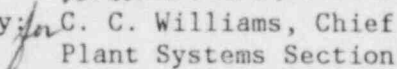
Facility Name: Callaway, Unit 1

Inspection At: Callaway Site, Callaway County, MO

Inspection Conducted: August 23-25, 1982

Inspector: 
F. C. Hawkins

9/9/82

Approved By: 
for C. C. Williams, Chief
Plant Systems Section

9/10/82

Inspection Summary

Inspection on August 23-25, 1982 (Report No. 50-483/82-09(DETP))

Areas Inspected: Review of procedures, observation of work, and review of quality records relative to concrete drilling and coring activities.

Results: Two items of noncompliance were identified (Criterion II-failure to provide control over concrete drilling and coring-Section 3; Criterion XVI-failure to take adequate corrective action-Section 3).

DETAILS

Persons Contacted

Union Electric Company (UE)

- *W. Weber, Manager-Nuclear Construction
- *R. Powers, Superintendent-Site Quality Assurance
- *R. Veatch, Supervising Engineer-Construction Quality Assurance
- *L. Kanuckel, Quality Assurance Auditor
- *C. Weitzel, Consultant

Daniel International Corporation (DIC)

- *A. Arnold, Project Quality Manager
- *E. Armstrong, Project Civil Discipline Manager
- *W. Petrie, Project Quality Assurance Engineer
- *D. King, Construction Manager
- *R. Neal, Project Civil Engineer
- *R. Plautz, Lead Civil Engineer
- *D. Rollins, Quality Engineer
- *P. Roney, Civil Quality Inspection
- *M. Smith, Audit Response Coordinator

Other Personnel

- *J. Neisler, Region III Resident Inspector

*Denotes those attending the exit interview.

Functional or Program Areas Inspected

This inspection was conducted at the Callaway site to assess the adequacy of control over concrete drilling and coring activities. The expressed purpose of the effort was to assure that pertinent information regarding damaged reinforcing steel was being properly assimilated by the responsible site organization and then reported to Bechtel Power Corporation. Specifically, this inspection consisted of procedure and specification review, observation of in process work and review of quality records.

1. Specification/Procedure Review

Specifications and procedures pertaining to drilling and coring activities were reviewed to confirm that they were functional and contained appropriate quality requirements. The following documents were reviewed.

- . Bechtel Specification C-103A, "Technical Specification for Installation of Concrete Expansion Anchor Bolts."
- . Bechtel Specification C-103B, "Technical Specification for Core Drilling of Concrete Structures."

- . DIC Work Procedure WP-100, "Installation of Post-Pour Embedded Items."
- . DIC Work Procedure WP-301, "Installation of Electrical Raceway Supports."
- . DIC Quality Control Procedure QCP-100, "Installation of Post-Pour Embedded Items."
- . The Robert Irsay Company, "Procedure for Installation of Concrete Expansion Anchor Bolts."
- . Bechtel Drawing No. J-07G01(Q), "Instrument Mounting Structure Floor Stand."
- . Bechtel Drawing No. J-0 J02(Q), "Instrument Mounting Structure Wall Mount."

Based on the reviews, it is the inspector's conclusion that an adequate program exists at Callaway relative to concrete drilling and coring activities.

2. Observation of Work

In process drilling work in the radwaste building was observed. The work involved the removal of surface mounted plate EP512AFF and the installation of plate LP137AFF.

To facilitate the installation of plate LP137AFF, four holes were drilled in accordance with Post-Pour Embed Installation Form (PEIF) No. 13798. The work and documentation was confirmed to be in accordance with applicable procedures and specifications.

3. Review of Quality Records

Bechtel specifications and site implementing procedures require that documentation of damaged reinforcing steel be forwarded to Bechtel for review. Specifically, permission to perform drilling and coring work is given on a PEIF, in accordance with DIC Procedure WP-100. The use of the PEIF was instituted on March 26, 1979. From December 18, 1978 to March 26, 1979, damaged reinforcing was identified on Concrete Drilling Approval Forms (CDAF). Prior to that date, damaged reinforcing was reported on nonconformance reports (NCR).

The reporting system is constructed, such that, the details of reinforcing which is damaged during the work operation is noted on the reporting form (i.e., NCR, PEIF) and the information is then transferred to the Paper, Calmenson & Company (PaCal) reinforcing steel detail drawings. The PaCal drawings are then transmitted to Bechtel for their review.

In order to verify the implementation of the program, specific cored holes and surface mounted items were selected. Given the locations of the selected items, the Region III inspector and the responsible DIC engineer attempted to verify that (1) any damage steel was properly documented on either a PEIF, CDAR or NCR, and (2) the information was incorporated into the PaCal drawings in a timely fashion. Following are the results of that verification:

a. No. 1 - Core Hole

- Location: Auxiliary Building
- Field Inspection Results: Identified that two #6 horizontal reinforcing bars were cut during coring.
- *- PEIF: No. 6843 identified one cut #6 horizontal bar.
- *- PaCal Drawing: No. R-0135-253 identifies one cut #6 horizontal bar.

b. No. 2 - Cored Hole

- Location: Auxiliary Building
- Field Inspection Results: Identified four #10 vertical and two #8 horizontal cut bars.
- NCR: No 2-3308-C-A, dated July 21, 1978, identified four #10 vertical and two #8 horizontal cut bars.
- *- PaCal Drawing: The bar cuts were not identified on the PaCal drawings.

c. No. 3 - Cored Hole

- Location: Auxiliary Building, Auxiliary Feedwater Pump Room
- Field Inspection Results: Identified at least one cut #6 horizontal bar; the hole was not totally accessible for inspection.
- *- PEIF, CDAR, or NCR: None were located which identified the reinforcing bar cut.
- *- PaCal Drawing: The bar cut identified by field inspection was not on the PaCal drawings.

d. No. 4 - Two Cored Holes

- Location: Auxiliary Building
- Field Inspection Results: Identified that four #6 bars were cut in one hole and none were cut in the second hole.
- CDAF: No. 26, dated September 9, 1978, identified two cored holes. One of the holes contained four #6 cut bars. No reinforcing was cut in the second hole.
- *- PaCal Drawings: Nos. R-0133-143, 144 and 146 identified one cut #6 bar in one hole and none in the second hole.

e. No. 5 - Cored Hole

- Location: Control Building
- Field Inspection Results: Identified two cut #6 horizontal bars.
- PEIF: No. 921, dated March 15, 1979, identified two cut #6 horizontal bars.
- PaCal Drawings: Nos. R-0341-046 and 047 identify the two cut bars.

f. No. 6 - Cored Hole

- Location: Control Building
- Field Inspection Results: Identified two cut #6 horizontal bars.
- PEIF: No. 922, dated March 15, 1979, identified two cut #6 horizontal bars.
- PaCal Drawing: No. R-0341-046 identified the two cut #6 bars.

g. No. 7 - Cored Hole

- Location: Control Building
- Field Inspection Results: Identified one cut #6 horizontal bar.
- PEIF: No. 919, dated March 15, 1979, identified the cut #6 bar.
- PaCal Drawing: No. R-0341-046 identified the cut #6 bar.

- h. No. 8 - Drilled Conduit Opening
 - Location: Auxiliary Building
 - Field Inspection Results: Hole was not accessible.
 - PEIF: No. 13542 does not identify any damage to reinforcing steel.
 - PaCal Drawing: N/A

- j. No. 10 - Drilled Holes for Surface Mounted Plate (Expansion Anchors)
 - Location: Auxiliary Building
 - Field Inspection Results: Holes were not accessible.
 - PEIF: No. 13898 documents that no reinforcing steel was damaged.
 - PaCal Drawing: N/A

- k. No. 11 - Drilled Holes for Surface Mounted Plate (Expansion Anchors)
 - Location: Auxiliary Building
 - Field Inspection Results: Holes were not accessible.
 - PEIF: No. 2332 documents that no reinforcing steel was damaged.
 - PaCal Drawing: N/A

The instances denoted with an asterisk in Sections 3.a, b, c, and d indicate that the documentation of damaged reinforcing steel is neither accurate nor complete when compared to the as built condition. This failure to provide control over concrete drilling and coring activities is considered an item of noncompliance in accordance with 10 CFR 50, Appendix B, Criterion II. (50-483/82-09-01)

Additionally, the results of DIC QA Audit QAR 81-09-01 were reviewed. The audit resulted in issuance of Stop Work Order #41 on October 2, 1981. Corrective Action Report (CAR) No. 2-C-0016 was written to track the specified corrective actions. In part, the audit identified instances where (1) damaged reinforcing steel was not recorded on the PaCal drawings and (2) PEIF's did not accurately reflect the as built condition. The referenced audit deficiencies are identical to the examples of noncompliance cited earlier in this report.

At the time of this inspection, the corrective actions specified by CAR No. 2-C-0016 were complete. Based on the identification of non-compliance item 50-483/82-09-01, it is evident that inadequate corrective action to preclude recurrence was taken with regard to the

original audit findings. This failure to assure that the cause of the adverse conditions was determined and that corrective action was taken to preclude repetition is considered an item of noncompliance in accordance with 10 CFR 50, Appendix B, Criterion XVI.
(50-483/82-09-02)

Exit Interview

The inspector met with staff representatives (denoted in Persons Contacted paragraph) during and at the conclusion of the inspection to summarize the scope and findings of the inspection.