

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

REGION III

Report No. 50-483/80-22

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 18-20, 1980

Inspectors: R. B. Landsman

RB Landsman

9-22-80

J. F. Schapker

J. F. Schapker

9/22/80

Approved By: D. W. Hayes, Chief
Engineering Support Section 1

D. W. Hayes

9/22/80

Inspection Summary

Inspection on August 18-20, 1980 (Report No. 50-483/80-22)

Areas Inspected: Routine, unannounced inspection: followup of previously identified items; observation of NDE and welding activities and observation of soils and concrete activities. The inspection involved a total of 42 inspector hours on site by two NRC inspectors.

Results: Of the three areas inspected, three items of noncompliance were identified (infractions - failure to identify safety related rip-rap; failure to perform necessary soil tests to assure quality; and failure to indoctrinate and train craft personnel).

DETAILS

Persons Contacted

Union Electric Company

- *H. H. Hess, QA Consultant
- *J. Laux, QA Engineer
- *R. L. Powers, Superintendent, Site QA
- *R. Veatch, Quality Assurance Engineer
- *M. I. Dwyne, General Superintendent Construction

Daniels International Company

- *G. M. Warblow, Services Manager
- *J. A. Holland, Civil Engineering Manager
- *W. L. Petrie, QA Engineer
- *M. K. Smith, Audit Response Coordinator
- *H. J. Starr, Project Manager
- *A. D. Arnold, Assistant Quality Control Manager
- *M. K. Armstrong, Project Civil QC Engineer
- *J. J. Long, Welding Engineer
- G. McClendon, Piping Engineer
- J. Linder, Welding Superintendent

Hartford Steam Boiler Insurance Company

- *H. J. Potter, Authorized Nuclear Inspector

Westinghouse

- S. Martinez, Site Representative
- T. Nader, Site Engineer

*Denotes those attending the exit meeting on August 20, 1980 at the Callaway site.

Licensee Action on Previous Inspection Findings

(Upgraded) Unresolved Item (483/80-11-03) - Rip-rap on Ultimate Heat Sink not classified as safety related. An inspection was made of the rip-rap on the slopes of the heat sink. The material appears to be not properly placed in that it is not very well graded, i.e., there are pockets of fine material on the surface. The inspector requested the material acceptance tests during the previous inspection and again during this inspection. The test results could not be located.

The inspector also reviewed Bechtel letter to Union Electric, dated April 11, 1980, addressing the fact that the rip-rap is not safety related. It is the view of the NRC that the rip-rap on the Ultimate Heat Sink is safety related and should be handled as such. The licensee failed to identify the rip-rap

as safety related and this is contrary to requirements of Criterion II of 10 CFR 50, Appendix B, as discussed in Appendix A of the report transmittal letter (483/80-22-01).

(Closed) Unresolved Item (483/80-11-04) - Instructions to perform modified proctor tests on clay. The inspector reviewed QCP-102, Revision 9, dated June 23, 1980, Section 4.8.2 to which has been added ". . . Perform additional modified proctor test when it appears that property changes in cohesive material."

(Closed) Unresolved Item (483/80-11-06) - Changing lift thickness of clay from six inches to nine inches without documentation. The inspector reviewed Daniel memo dated August 19, 1980, and test results which indicate that compaction can be achieved with nine inch lifts.

(Open) Unresolved Item (483/80-11-07) - Recording actual loose lift thickness of fill. In reviewing some density tests, it was determined that it appears that some lifts were thicker than allowed by specifications. Discussions with soil inspectors indicated that the elevation they are recording on the moisture-density form is at the point of the test; it does not reflect the average elevation of the fill. The merits of recording the average elevation of a lift and not the one point test elevation were discussed with the licensee. They indicated they would review changing the density form and the requirements to measure the average elevation and not one point. This item remains open pending further review.

(Open) Unresolved Item (483/80-11-08) - Not testing every lift for areas less than 2500 square feet. Discussions with soil inspectors indicated that they check clean-up, thickness, and material type on the other lift; if they are doubtful they perform a density test. However, they do not watch the compaction all the time. Dames and Moore's response states that it is not necessary to perform a density test on every layer for such a small area; adequate inspection can be obtained by visually watching placement and compaction. The inspector agrees with this; however, the intent of visual inspection of compaction is to watch and document the compaction. The licensee is looking into changing the procedure to have QC watch and document the compaction on the other lift. This item remains open pending a review of the procedure change.

(Upgraded) Unresolved Item (483/80-11-09). Testing granular fill properties. Dames and Moore's response indicates that in their opinion a slight variation in gradation would not significantly change the material properties, i.e., required compaction densities. The inspector determined that since the PSAR was written in 1975, over 800,000 tons of granular material has been placed on site, and no proctors have been performed, or when requested by the inspector, no proctors are going to be performed. A review of gradations of granular fill indicated variations have occurred during the last five years. In view of this, the licensee failed to perform necessary tests of material to assure quality and this is contrary to Criterion X of 10 CFR 50, Appendix B, as discussed in Appendix A of the report transmittal letter (483/80-22-02).

SECTION I

Prepared by R. B. Landsman

Reviewed by D. W. Hayes, Chief
Engineering Support Section 1

1. Concrete

It was previously reported that poor concrete vibration placement practices were taking place (noncompliance item 483/80-06-02 and unresolved item 483/80-11-01); the licensee informed the inspector that discussions were subsequently held with site personnel. The inspector was told that indoctrination and training of personnel is administered at the foreman level. The licensee expects his foreman to teach his crews accordingly. No documentary evidence was made available to show that the foreman administered training to his crews. The inspector also interviewed at least six vibrator operators and all stated that no formal indoctrination and training is being conducted. Further, discussions with licensee personnel confirmed that training of craft personnel is only given if the NRC raises a concern.

In light of this, it is evident that the licensee failed to indoctrinate and train craft personnel and that this is contrary to Criterion II of 10 CFR 50, Appendix B, as discussed in Appendix A of the report transmittal letter (483/80-22-03).

2. Soils

The inspector reviewed audits relative to site soil placement and compaction activities. The inspector established that during the past four years Union Electric conducted only one audit of soil activities during April 17-21, 1978. Records indicate that the audit was a small portion of a larger audit and was confined to a relatively small portion of the soil placement and compaction activities and included a review of two folders of soil checklists, 14 material placement cards and a statement on April 20 the auditor observed some placement and compaction in a specific area.

In addition to the above licensee audit, the contractor, Daniels, performed two audits representing the licensee's planned and scheduled audits. Review of the two audits dated July 6, 1977 and September 7, 1979 indicates that secondary emphasis was placed on soil placement activities as it was only a small portion of a larger audit titled "Quality Assurance Report." Furthermore, the inspector determined that the major portion of the subsections, one titled "Unscheduled Audit of Backfill . . ." was in fact an audit on the rock quarry and its accompanying crushing operation.

During the inspection, no other Union Electric/contractor audits on soil placement activities could be located.

The inspector determined that the above audits performed by the licensee and his contractor were neither comprehensive nor planned periodically relative to soil placement activities. The inspector informed the licensee that he failed to perform a comprehensive system of planned and periodic audits to verify compliance of site soil activities to assure that the soil is being properly placed and compacted. This item is considered unresolved pending reviewing other audits that could not be located when the inspector was on-site (483/80-22-04).

Section II

Prepared by J. F. Schapker

Reviewed by D. H. Danielson, Chief
Engineering Support Section 2

1. Observation of Technical Services Laboratory (TSL) Nondestructive Examination (NDE) Activities

The inspector observed the following NDE activities on ASME Class 1 and 2 piping welds:

- a. Magnetic particle examination (MT) of Essential Service Water piping field weld #F-018, pipe #2-EF-03-S-018/134 to 2-GN-01-S-030. NDE inspectors E. Taylor, MT Level II, and N. Cagnale, MT Level I, performed examination. Parker probe serial No. 4150 D.C. yoke was utilized. Calibration of yoke was witnessed by the inspector using calibration block serial No. 40-2 D.C. Examination was performed to TSL MT procedure #7.4A.
- b. Liquid penetrant examination (PT) of incore instrument tube to reactor vessel instrument nozzle field weld #FW 324 R1, welded to Daniels International Corporation (DIC) specification #N-8-43-B-4W. NDE inspector T. Willbanks, (PT) Level II, performed to TSL procedure #NDE 7.3c Revision 2.

No items of noncompliance or deviations were identified.

2. Observation of Welding Activities on ASME Class 1 Piping

The inspector observed welding activities on the following equipment:

- a. Reactor coolant loop to reactor coolant pump intake, component assembly #2-BB-01-S-205, field weld #F-207; Daniels International Corporation (DIC) weld procedure #N8-8-BA-2 Revision 2, Weld Procedure Qualification #PQT-94.

Welders identification numbers J-18 and J-27 were observed in process of welding. At the request of the inspector, DIC welding QC inspection verified amperage setting by use of Tong meter identified AX55817 and displaying the proper calibration sticker. The amperage and other welding variables were within the parameters specified in the referenced weld procedure.

- b. Reactor vessel instrumentation nozzles to incore instrument piping, field weld #198, Weld Procedure N-8-43-B-4W, P-43 to P-8 with ERNI-CR3 filler metal. The inspector interviewed the welder performing the above weld in regard to the applicable welding parameters. The following is the information obtained:

Wire material - ERNI-CR3
Wire size - 3/32"
Tungsten size - 3/32"
Cup size - #7
Argon purge - 15 CFM
Electrode extension - unknown
Amperage range - unknown

The welder stated that although he did not know the amperage range he was welding, he had welded approximately two weeks earlier on the same type weld in the same area and set his machine accordingly (between 40 and 50). The inspector was unable to verify actual amperage setting due to the shift ending and the weld machine was not equipped with amperage or voltage gauges. The amperage normally is checked with tong meters. There were two welding machines in the same area. The welder had been welding in this area for two days without checking his amperage. The inspector also questioned the welding superintendent in regard to the above. The welding superintendent stated that tong meters were readily available along with the Welding Procedure Specification (WPS).

The inspector verified the amperage the next day and found it to be within WPS requirements. However, no assurance that the weld amperage was within requirements had been made by the welder prior to the inspector's inquiry. The need for verification of the welding amperage was emphasized by the inspector at the exit meeting. The licensee acknowledged this need for verification.

No items of noncompliance or deviations were identified.

3. Review of Welder Qualification Records

The inspector reviewed welder qualification records for the following welders and referenced welding specification:

Welder #	Specification
J-18	N-8-8-BA-2
B-75	" " "
B-34	" " "
J-27	" " "
W-22	N-8-8-B-4W

The following omissions from the welder qualification records were identified and acknowledged by DIC Welding Engineer:

- a. Welder W-22, weld procedure N-8-8-B-4W - Position of test was not indicated on welder performance qualification test record, form W-103, in accordance with DIC Procedure WP-502, Appendix III (position 4F).

- b. Record copy maintained by Quality Control did not contain sectioning sample reports as required by DIC Procedure WP-502, Appendix III.

The inspector ascertained that the weld qualification test was performed in the 4F position by interview with cognizant DIC supervisors in charge of administering welder qualifications, and review of other welder qualifications with position correctly indicated. Although quality control records did not contain sectioning sample reports as required, Welding Engineering supplied the appropriate records for the inspector's review. Subsequently, DIC Welding Engineering agreed to update referenced welder qualification records and supply Quality Control with completed copies. In addition, Welding Engineering agreed to revise procedure WP-502 to add instructions to the "Interim Welder Performance Qualification Test Sheet" to include weld position of test. This is considered an unresolved item (483/80-22-05).

Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, or items of noncompliance, or deviations. Unresolved items disclosed during this inspection are discussed in Section II, paragraph 3.

Exit Interview

The inspectors met with licensee representatives (denoted under Persons Contacted) at the conclusion of the inspection on August 20, 1980. The inspectors summarized the scope and findings of the inspection. The licensee acknowledge the information.