

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/82-19(DPRP)

Docket No. 50-483

License No. CPPR-139

Licensee: Union Electric Company
Post Office Box 149
St. Louis, MO 63166

Facility Name: Callaway Plant, Unit 1

Inspection At: Callaway Site, Reform, MO

Inspection Conducted: November 1 through December 31, 1982

Inspector: J. H. Neisler *for*

1/19/83

Approved By: J. E. Konklin, Chief
Projects Section 1A, DPRP

1/19/83

Inspection Summary

Inspection on November 1 through December 31, 1982 (Report No. 50-483/82-19(DPRP))

Areas Inspected: Inspection by NRC Senior Resident Inspector of safety-related construction, preoperational testing, and operations activities, including piping and pipe supports, electrical installation, IE Bulletins, followup on previously reported items, equipment testing, and fuel receipt. The inspection involved a total of 240 inspector-hours onsite by one NRC inspector, including 12 hours onsite during non-regular hours.

Results: Two items of noncompliance were identified (electrical separation and inadequate inspection of surface mounted plate).

DETAILS

1. Persons Contacted

Union Electric Company (UE)

- *W. H. Weber, Manager, Nuclear Construction
- *R. L. Powers, Superintendent, Site QA
- *R. Veatch, Supervisor, Construction
- *C. Weitzel, QA Consultant
- C. Plows, QA Consultant
- *A. Sassani, QA Consultant
- K. Kuechenmeister, Supervisory Engineer, Construction
- *M. Doyne, Superintendent, Nuclear Construction
- *L. Kanuckel, QA Engineer
- *R. Williams, TSPG Supervisor
- B. Stanfield, Assistant QA Engineer
- *S. Hogan, QA Engineer
- *J. Laux, Supervisory Engineer, Startup QA
- E. Lazarowitz, QA Consultant
- M. Pechar, QA Consultant
- H. Millwood, QA Consultant
- J. McGraw, Supervising Engineer, Nuclear Construction

Daniel International Corporation (DIC)

- *W. J. Petrie, Project QA Engineer
- *J. J. Long, Project Welding Engineer
- *M. Stokes, Project Electrical Engineer
- J. Williams, Lead Civil Quality Inspector
- D. Thomas, Civil Quality Inspector
- S. Martin, Civil Superintendent
- S. Wallace, Civil Engineering
- F. Fuller, Civil Superintendent

During the inspection period, the inspector contacted other persons in the crafts, engineering, inspection, and management areas.

*Denotes those persons attending one or more exit interviews.

2. Inspection and Enforcement Bulletins (IEB)

The inspector examined the licensee's responses and corrective actions relative to the following Inspection and Enforcement Bulletins:

- IEB 80-09 Hydramotor Actuator Deficiencies. The licensee's architect/engineer and NSSS contractor have reviewed those safety-related systems for which they are responsible. Results of the review indicate that AH90 or NH90 activators are not used at the site. Packaged refrigerator units used in air conditioning

systems have AN90 actuators; analysis indicates that sizing and stroke length in these units are adequate. This bulletin is closed.

- IEB 80-23 Failures of Solenoid Valves Manufactured by Valcor Engineering Corporation. The inspector examined results of system reviews by the NSSS contractor and the architect/engineer which indicate that the valves referenced on this bulletin are not used at Callaway. This bulletin is closed.
- IEB 80-06 Engineered Safety Features (ESF) Reset Controls. This bulletin was sent to the licensee for information only. The licensee required the architect/engineer and the NSSS contractor to perform an analysis of ESF reset control circuitry. The analysis resulted in seal-in circuits being provided where necessary. This bulletin is closed.
- IEB 80-04 Analysis of a PWR Main Steam Line Break with Continued Feedwater Addition. This bulletin was sent for information only. The licensee has required his architect/engineer to verify that those concerns identified in the bulletin had been addressed in the design of the plant. This bulletin is closed.
- IEB 77-03 On-Line Testing of the Westinghouse W Solid State Protection System. This bulletin was sent to construction sites for information only. Testing of the on-line solid state protection system will be accomplished by including in the initial issue of the system technical manual such steps as are required to verify proper operation of the circuitry. This bulletin is closed.
- IEB 79-03 and
IEB 79-03A Longitudinal Weld Defects in ASME SA-312 Type 304 Stainless Steel Pipe Spools Manufactured by Youngstown Welding and Engineering Company. The Callaway lead architect/engineer and the NSSS supplier have reviewed plant systems and have determined that SA-312 Type 304 fusion welded stainless steel pipe is not used in systems or components in which the design hoop stresses equal or exceed the 85 percent ASME allowable. These bulletins are closed.

3. Surface Mounted Plate Allegation

The NRC received an anonymous letter alleging deficiencies in the installation of six surface mounted plates in safety related areas of the plant. The allegations and results of the inspection are listed below. All measurements were either performed by the inspector or under his direct observation.

- a. Allegation 1. On plate Log No. 15746, "The drilled hole pattern in the plate did not align with the bolts; therefore, the holes in the plate were reamed beyond the 1/16 inch allowance."

Nuts and washers were removed from the bolts to inspect the holes in the plate. Hole diameters were measured by the senior resident inspector. The bolt hole in the lower right corner of the plate had been reamed to a diameter 1/8 inch greater than allowed by specifications. This condition was not identified in the plate inspection records. Failure to document that the plate had been installed with an out-of-tolerance hole diameter is in noncompliance with 10 CFR 50, Appendix B, Criterion X (50-483/82-19-01) (DPRP).

- b. Allegation 2. On plate Log 15354, "the imbedded anchor bolts were cut off to make it appear they were set deeper in the concrete than they actually were. This violated specs."

The inspector witnessed the measurement of the bolts in this plate with a Branson 303 ultrasonic tester operated by a certified NDE technician. The tests indicated that the embedded bolts were approximately 12 inches long. The ultrasonic tester was calibrated with a 12 inch long bolt before and after the tests on the embedded bolts. The 12 inch length meets specifications for 3/4 inch grouted bolts. This allegation was not substantiated.

- c. Allegation 3. On plate Log 15595, "The hole in the concrete was too big for the bolt to grab hold and torque. Therefore, wire was wrapped around the bolt to increase its size, creating a false torque."

Since the allegor did not indicate which bolt in this plate had been wrapped with wire, all the bolts in the plate were retested in the presence of the inspector. All bolts were tested with a calibrated torque wrench to a torque of 500 psi. The inspector's discussions with cognizant civil engineers from the NRC and onsite indicate that, if wire had been wrapped around the bolt, it would not decrease the structural integrity of this floor mounted plate if the bolts did not pull out of the concrete at the above torque value.

- d. Allegation 4. On plate Log 1622³, "An expansion anchor bolt was cut with a grinder. This reduced the strength of the bolt causing a possible failure."

The plate was removed and the anchor bolts were examined by the inspector. There was an apparent grind mark on the threads of the bolt in the upper left corner of the plate. The damaged area affected two threads on the bolt in an area not engaged by the threads on the nut. The apparent grind mark did not reach the bottom of the threads and, therefore, would not affect the strength of the bolt.

- e. Allegation 5. On plate Log 14659, "The bolt was bent 30 degrees then drove into the wall. This bending of the bolt reduces its strength, again creating a possibility of failure."

Two 15 inch anchor bolts were bent to 30 degrees and used to calibrate a Branson 303 ultrasonic tester. The bolts in the plate were then examined with the calibrated tester. Results of the test indicate that none of the bolts had been bent to an angle of 30 degrees. The inspector also examined the bolts projecting from the plate. All nuts and washers lie flat on the plate which is an indication that bent bolts are not now installed in the plate.

- f. Allegation 6. On plate Log 16232, "The holes drilled in the plate reamed beyond the 1/16 inch allowance."

Nuts and washers were removed from the bolts on this plate and the holes in the plate were measured by the inspector. Although there were indications that some holes had been reamed, none of the hole diameters exceeded specifications.

4. Electrical

The inspector examined activities relative to the installation and inspection of electrical equipment, cables, terminations and raceways. Installed equipment appeared to be adequately protected from damage due to adjacent construction activities. Welding and welding materials for installation of trays and tray supports observed by the inspector appeared to be in accordance with applicable procedures and specifications.

The inspector examined safety related conduit installation in the auxiliary building, reactor building, steam tunnel and turbine building. Flexible conduit at the feedwater flow control valves was in contact with flexible conduit from the redundant safety related system. Bechtel specifications and drawings require a minimum separation of one inch between conduits of redundant divisions. This is an item of noncompliance with Criterion V of 10 CFR 50, Appendix B. (50-483-82-19-02)

5. Preoperational Testing

The inspector observed portions of the secondary system hydrostatic testing. Boundaries of the test included all four steam generators and the main steam and feedwater lines within containment. The test was conducted and inspections were performed according to approved procedures. The inspector was informed that one secondary to primary side leak was detected at row 12, column 107, in Steam Generator "B".

The inspector observed the initial motor test for Reactor Coolant Pump A. The motor was tested disconnected from the pump. Motor vibration was measured and was found to be within the manufacturer's tolerance. No problems were observed with temperature or lubrication.

No item of noncompliance or deviations were identified in this area.

6. Fuel Receipt

The licensee began the receipt of nuclear fuel assemblies during the report period. The inspector observed the receipt activities. Radiation surveys were conducted in accordance with procedures. Security personnel provided physical protection for the fuel during unloading and in the fuel building during fuel storage.

The inspector witnessed the removal of assemblies A28 and A37 from their shipping containers. Prior to removing the assemblies, accelerometers and strain gauges were examined, the containers were upended, and the assemblies were removed from the containers. The required inspections were performed and the assemblies were stored in accordance with the approved procedure.

No items of noncompliance or deviations were observed in this area.

7. Previously Reported Items

(Open) Noncompliance 50-483/82-15-01: Seismic Category 1, electrical conduit attached to a nonseismic Category 1 platform. Subsequent to the inspection, the licensee determined that the platform had been designed as a seismic Category 1 structure. However, the licensee had not been able to produce documentation during the previous inspection showing that the platform had been fabricated, inspected and installed as a seismic Category 1 structure. The noncompliance was later changed from Severity Level IV to Severity Level V by Region III letter dated January 6, 1983, and remains open pending the inspector's examination of fabrication inspection, and installation documentation for the platform.

8. Piping and Mechanical

The inspector observed installation and inspection activities involving piping and pipe support systems in the reactor building, auxiliary building, and the diesel and control building. The inspection included pipe hangers, snubbers and restraints, pumps, valves, pipe welding, and weld rod control.

No items of noncompliance or deviations were observed in this area.

9. Integrated Design Inspection

The inspector participated in the onsite portion of the integrated design inspection performed by an inspection team composed of NRC Headquarters personnel and their consultants. Details of the inspection and any inspection findings will be included in the report prepared by the inspection team.

10. Exit Interview

The inspector met with licensee representatives (denoted under Persons Contacted) at intervals during the inspection period. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the findings as reported herein.