

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

REGION III

Report No. 50-483/78-04

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

Investigation At: Callaway Site, Callaway County, MO

Investigation Conducted: April 24-25, 1978

Investigator: *J. E. Foster*
J. E. Foster

6/12/78

Inspector: *E. R. Schweibinz*
E. R. Schweibinz

6-12-78

Reviewed by: *C. E. Norelius*
C. E. Norelius
Assistant to the Director

6/21/78

Investigation Summary

Investigation on April 24-25, 1978 (Report No. 50-483/78-04)

Areas Inspected: Special, unannounced investigation into allegations regarding failure to follow procedures, qualifications of Quality Control inspectors, and welding qualification testing; review of pertinent records, inspections of construction activities, and interviews with personnel. The investigation involved 14 inspector-hours onsite by two NRC inspectors.

Results: Of the areas investigated, one item of noncompliance was identified in the area of construction procedures. (Deficiency - failure to repair an embedment in accordance with documented procedures - Findings section)

INTRODUCTION

The Callaway Unit 1 nuclear power plant, licensed to the Union Electric Company, is under construction in Callaway County, Missouri, near the town of Reform, Missouri. Bechtel Power Corporation is the Architect-Engineering firm for the plant, which is being constructed by Daniel International Corporation. The facility will be the first of a number of Standardized Nuclear Unit Power Plant Systems, or SNUPPS units.

REASON FOR INVESTIGATION

On April 7, 1978, a letter from Mrs. Kay Drey was received at NRC Region III (RIII). The letter indicated that an individual employed at the Callaway site wished to speak with Mr. James Keppler, RIII Director. On April 12, 1978, Mr. Keppler contacted this individual by telephone. During the conversation, Individual "A" indicated that he had several concerns related to the Quality Control program at the Callaway site. RIII initiated an investigation into the concerns expressed.

SUMMARY OF FACTS

On April 7, 1978, a letter from Mrs. Kay Drey, who had been involved in previous investigations concerning the Callaway site (see IE Investigation Report Nos. 50-483/77-10 and 50-483/77-11) was received at RIII. The letter, attached as Exhibit I, indicated that an individual employed at the Callaway construction site wished to speak with Mr. Keppler, RIII Director.

Mr. Keppler contacted Individual "A" by telephone on April 12, 1978. Individual "A" indicated that he had several concerns related to the cost of construction for the Callaway project, and to the Quality Control program for the site. Specific concerns were not discussed in detail during this conversation.

On April 14, 1978, Individual "A" was contacted by telephone by J. Foster, Investigation Specialist, and E. Schweibinz, Reactor Inspector, to discuss Individual "A"'s concerns in more detail. Individual "A" indicated that he did not know how much he could assist the NRC, as he did not have any objective evidence of improper

experience in welding quality control. The allegation that welder qualification testing had been improperly performed could not be substantiated; however, the information obtained indicated that it would be easy to assume that improper actions had taken place.

Inspection of the embed in the control room which was identified by Individual "A" indicated that the embed had undergone repair work which had accidentally warped the embed. The repairs for the embed were properly covered under a nonconformance report (NCR) but the resulting embed warpage was not covered under an NCR. Ironworkers had heated the embed in order to straighten the embed, which is allowed by applicable specifications, but no method of measuring and controlling the amount of heat applied was used, as required by procedure. This was identified as an item of noncompliance with NRC regulations.

Bechtel Power Corp. (Bechtel), through Union Electric, informed the NRC representatives that the embed was not a load-bearing embed, and its main function was to provide a form for concrete at the top of the stair on which it was located. The embed has no structural significance, but was subject to quality control procedures as a part of a safety-related structure.

CONCLUSIONS

1. One item of noncompliance with NRC regulations, failure to properly control the heat applied to an embed during bending, was developed as a result of the investigation into the allegations made by individual "A". The embed in question does not have structural significance.
2. The allegation regarding a quality control inspector's qualifications was not substantiated.
3. The allegation regarding welder qualification testing could not be substantiated, but conditions described indicated that it would be easily assumed that improper actions were taking place.
4. A number of Individual "A"'s concerns were monetary, and not within the jurisdiction of the NRC and are more properly under the jurisdiction of other agencies.

DETAILS

Personnel Contacted

Union Electric Company

M. I. Doyne, General Superintendent, Callaway Construction
R. L. Powers, Site QA Group Leader
K. W. Kuechenmeister, Assistant Engineer
R. Veatch, QA Assistant Engineer
W. H. Weber, Manager, Nuclear Construction

Daniel International Corporation

L. R. Smith
H. J. Starr, Project Manager
W. L. Sykora

Individuals

Individuals "A" through "E"

Scope

This investigation focused on the allegations received from Individual "A". Quality Control procedures, welder qualification testing, and Quality Control inspector qualifications were general areas inspected.

On April 12, 1978, Individual "A" was contacted by the Director, RIII.

On April 14, 1978, Individual "A" was interviewed by telephone.

On April 24, 1978, Individual "A" was personally interviewed.

On April 25, 1978, RIII representatives visited the Callaway site, interviewed management and construction personnel, inspected an embed in the control building, reviewed welder qualification testing records, reviewed the resume and qualifications for a Quality Control inspector, and reviewed pertinent nonconformance reports. A site exit interview was held on this date.

On April 27, 1978, the findings of the investigation were discussed with Individual "A" via telephone.

FINDINGS

The following allegations are those developed from the information provided by Individual "A":

Allegation

1. A Quality Control inspector was not qualified for his position.

Findings

Individual "A" stated that he had become familiar with Individual "B", a welding Quality Control (QC) inspector, sometime during the months of March or April, 1977. He stated that at that time, work was being done to repair structural ironwork in the Auxiliary Building. Individual "A" stated that Individual "B" had told him that he had no previous experience in welding or QC, but had been a bartender for most of his life, and had been at work at the Callaway site for some eight weeks. Individual "A" indicated that he had questioned individual "B" as to whether he knew how to weld, and Individual "B" had replied that he did not know how to weld.

Individual "A" stated that he only knew the first name of the QC inspector in question, but he was able to provide RIII representatives with the home state and physical description of the QC inspector.

A review of the welding QC personnel employed at the Callaway site during the period mentioned, and a discussion with management personnel of the physical description of the individual indicated that only one person could meet the description given by Individual "A". In addition, only one QC inspector employed during the period mentioned had the first name provided, and his hire date indicated he had been onsite for eight weeks on March 30, 1977.

The RIII representative reviewed the personal resume, vision tests, certificates of qualification, training records, and records of examination pertaining to Individual "B". The records reviewed indicated that in addition to other experience and training, Individual "B" had some four years prior experience at another nuclear plant construction site. This was confirmed by contact with an NRC inspector at the other plant, who obtained a copy of Individual "B"s personnel listing record. The documents reviewed indicated that Individual "B" was fully qualified for his position, and were found to be acceptable.

Individual "B" was found to have left employment at the Callaway site on April 14, 1978, and was not contacted.

No items of noncompliance with NRC regulations were identified.

Allegation

2. Welder Qualification testing had not been properly performed.

Findings

Individual "A" stated that when he had taken a welding test, sometime in February or March of 1977, he had observed the welding supervisor performing a root pass weld for a pipefitter. He stated that the pipefitter had been performing a weld test on carbon steel plates, in the vertical position, when this was observed. Individual "A" stated that this was done so that the pipefitter could successfully complete his welder's qualification test, which he was apparently not able to do on his own. Individual "A" stated that Individual "C" had seen the same actions take place.

Welder Performance Qualification Test Records (form W-103) for the months of February and March of 1977 were reviewed by the RIII representatives, and Individual "A"'s test record was located. The test record indicates that Individual "A"'s test was terminated before completion, an indication that the test was not progressing acceptably. A review of test records for the time period which included Individual "A"'s welding qualification test did not reveal any irregularities, the records reflecting that approximately half of those taking a welding qualification test failed to pass the test.

A review of a four-day time period around the date of Individual "A"'s test indicated that three pipefitters either completed or were in the process of taking welding qualification tests at that time. All three pipefitters had been tested to test procedure N-1-1-BA-1, a GTAW-SMAW welding procedure performed on a pipe test sample. All three pipefitters had passed the test, and their samples had passed radiographic examination, as required. It was not possible to determine if one of the noted pipefitters was actually performing a weld qualification test on the date Individual "A" performed his test, as the test records indicate when the paperwork for the test is begun, and the date of termination or acceptance of the test, which may extend over more than one day. Two of the three noted pipefitters had left employment at the Callaway site.

Individual "C" was interviewed by the RIII representatives, and questioned as to whether he had witnessed Individual "D", the welding superintendent, place a root pass for any individuals taking welding qualification tests. Individual "C" indicated that he did not recall witnessing such actions.

Individual "D" was interviewed by the RIII representatives. Initial discussion was concentrated on allowing Individual "D" to describe the procedures for taking a welding qualification test, and the conditions in the area where the test is performed. Individual "D" indicated that the area

where the welding qualification test is performed also serves as a welding school, and that welding tests and training are often performed at the same time. When questioned concerning welding training, Individual "D" explained that most of the union workers employed at the site had welding experience, and can pass a welding test with little or no refresher training. He indicated that the pipefitters were non-union workers, and few of them could pass a welding test without some instruction in welding. In addition, he stated that a welder who has made several welds in the field which have not passed examination will be sent to him for some refresher training and requalification.

When questioned as to whether he had ever placed a root pass for an individual taking a welder qualification test, Individual "D" denied that he had ever done so, but indicated that it would look like this had occurred. Individual "D" stated that an individual taking a welding qualification test might easily observe him instructing someone in an adjacent welding booth, and that he often performs a root pass in such training. He also stated that if an individual is taking a test, and the test is obviously going to be unacceptable because of the poor quality of the root pass, he will stop the test, take the equipment and demonstrate how to place a proper root pass, and then let the individual practice welding for awhile. Individual "D" stated that he removes the test forms when this is done, and sets up a re-test for the individual at some later time. Individual "D" stated that he had done this many times, and that it could easily appear to someone that he was improperly helping the individual being tested.

During the interview, Individual "D" indicated that there would be no motivation for him to improperly assist a welder with his test, as a welder who could not weld properly would be returned to him for training and re-qualification. He stated that if this happened frequently, his competence would be questioned, and he would be fired.

A review of Individual "D"'s qualifications indicated that he has extensive experience in the welding field, with ten years experience in nuclear power plant welding.

No information which would support the allegation could be developed, and no items of noncompliance with NRC regulations were identified.

Allegation

3. An embed in the Control Building had been improperly heated and bent.

Findings

Individual "A" indicated that an embed at the top of the stair at elevation 2047' in the control building had been heat straightened without an

approved procedure. He stated that the embed was bent when a broken welded stud on the embed was repaired.

On the morning of April 25, 1978, RIII representatives inspected the embed in question. At the time of the inspection, the embed had not been fully repaired in that the welded stud, on the wall side of the embed had not been replaced. The embed appeared essentially straight, with a minimum amount of warpage. Grinding marks were observed on the stud side of the embed at the location of the missing stud, and minor discoloration on the opposite side of the embed indicated that the embed had been heated at that point.

A review of records indicated that a welded stud had been broken during installation of American Bridge Piece Number 59-B3, a twelve foot, one and a half inch long embed located at the top of a stair at elevation 2047'-6" in the Control Building. Nonconformance report 2-1665-C-B, described this nonconformance, and provided that the nonconformance be dispositioned by removing the damaged stud, air arcing the weld and replacing the stud.

Interviews with ironworkers involved in the repairs made on the embed indicated that the damaged stud had been removed and replaced, as required by the NCR, but a QC inspector had not been present to inspect the embed before the stud was replaced. Therefore, the replaced stud was removed, and the embed's surface prepared for another stud, to be placed subsequent to a QC inspection. The ironworkers indicated that the stud removal operations generated enough heat to cause the embed to warp slightly, requiring that it be straightened. They stated that they had attempted to straighten the embed mechanically, as provided by site specifications, but were unable to bend the metal.

The ironworkers interviewed indicated that a discussion of repairing the embed had taken place between a QC inspector and an Area Superintendent, and they decided that it should be heated, and then straightened. The ironworkers stated that they did not receive any instructions to perform the heat-straightening from their foreman (the normal communication channel), but assumed that it was correct to go ahead and straighten the embed after heating, and they did so. They stated that the heating was not controlled or checked by any means. One ironworker indicated that he had wire brushed the area which had been heated, on his own decision.

Interviews with the QC inspector and Area Superintendent involved corroborated the above information. Both individuals indicated that they had decided on a recommended course of action, but had not ordered the ironworkers to do the work since such orders go through the foreman. It appears that the two ironworkers may have erred in proceeding without direct orders.

Individual "E", the QC inspector, stated that he had consulted the applicable specification following his discussion with the Area Superintendent, decided that the embed should not be heat straightened, and notified the Construction Supervisor that the work should not be done. Individual "E" stated that when he returned to the area, the embed had already been heat straightened. Individual "E" indicated that he advised the ironworkers to wire brush both sides of the embed, and told them that he would "get back to them". He stated that the ironworkers may not have understood that he planned to write an NCR concerning the heat straightening of the embed.

Individual "E" stated that he was going to write an NCR for the heat straightened embed, but had not done so as yet due to the volume of inspections. When questioned as to whether he could show any note or rough paperwork to show that an NCR was planned, individual "E" stated that he had made no notes on the subject, but relied on his memory.

A review of applicable procedures indicated that procedure WP-115, Repair of Structural and Miscellaneous Steel (Safety Related), refers to Specification No. 10466-C122. Specification No. 10466-C122(Q), in section 10.9.2 (b and c), allows the use of heat for straightening embeds such as the embed in question, but indicates that the applied heat must be controlled and checked "by temperature-indicating crayons or other suitable means during the heating process."

Although the QC inspector involved indicated that he had observed that the procedure followed in straightening the embed was improper, and intended to write an NCR, and a limited amount of time had been available to write the NCR, no objective evidence or note was available to indicate this. Therefore, failure to adequately control the heat applied during the straightening process is an item of noncompliance with NRC regulations, in that it is contrary to 10 CFR 50, Appendix B, Criterion XV, which indicates, in part, that "Nonconforming items shall be reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures". (483/78-04-01)

Bechtel Power Corp. was questioned, through Union Electric, as to the structural importance of the particular embed, and the reason for its classification as being safety-related. Bechtel Power Corp. advised that the embed is not a load-carrying member, and is not structurally significant. It was indicated that the embed is classified as being safety-related only as a consequence of being present in the Control Building, most of whose components are classified as being safety-related. Bechtel indicated that the embed serves as a form for the concrete at the top of the stairway upon which it is located.