

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

REGION III

Report No. 50-483/80-10

Docket No. 50-483

License No. CPPR-139

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

Facility Name. Callaway Nuclear Plant, Unit 1

Dates of Investigation: March 26-27, and May 2, 1980

Investigation At: Callaway Site, Fulton, MO

Investigator: Robert M. Burton
Robert M. Burton
Investigator

6/6/80
(Date)

RC Knopf
William A. Hansen
Resident Inspector

6/9/80
(Date)

Reviewed By: Charles E. Norelins
Charles E. Norelins
Assistant to the Director

6/6/80
(Date)

RC Knopf
R. C. Knop, Chief
Project Section 1

6/9/80
(Date)

Investigation Summary: Investigation on March 26-27, and May 2, 1980
(Report No. 50-483/80-10)

Areas Investigated: Investigation was conducted into an allegation of the detection of a weld crack in a section of stainless steel pipe leading from an accumulator tank. Twenty-one manhours were spent on the investigation involving one inspector and one investigator.

Results: The allegation was not substantiated. No items of noncompliance were identified.

REASON FOR INVESTIGATION

On October 11, 1979, the Region III office received a phone call from a Daniel's Construction Company employee at the Callaway Nuclear Plant. He alleged that he had detected a crack in a stainless steel pipe weld in the vicinity of the accumulator tank. He further stated that he informed his supervisor of the weld crack, however the supervisor was reluctant to report it to quality assurance personnel.

SUMMARY OF FACTS

On October 11, 1979, an allegation was received by phone from a person requesting that his identity be kept confidential. This alleged stated he was a welder at the Callaway Nuclear Plant, and while employed there had detected a three quarter inch crack in a weld located near a valve in a fifteen foot long section of stainless steel pipe running from under an accumulator tank. He further stated that he informed his supervisor of the crack, however his supervisor was reluctant to inform quality assurance personnel, because he was of the opinion the weld had already been accepted.

On March 26 and 27, 1980, an on-site investigation of the allegation was conducted. During the course of the investigation it was determined that there were a total of fifteen welds encompassed in the area described by the alleged. Visual inspections of the fifteen welds were conducted independently by both the NRC resident inspector and a Daniel International Quality Control inspector. There were no visible cracks detected in any of the welds inspected. Two foremen, who were determined to be in charge of welding operations during the course of the welds' completion, were questioned as to their receiving any reports of a weld crack in the accumulator tank area. They both responded to the effect that they did not recall any of the company's employees ever reporting a weld crack to either of them.

Subsequent contact from reporters of the Witchita Eagle revealed they had been in contact with the alleged. Through their efforts, the alleged again contacted the NRC and provided a more detailed description of the weld crack both orally, and by indicating the location on an isometric drawing of the accumulator tank area which was mailed to the alleged and returned to the NRC. This description of the location indicated that the crack was on the inside of the pipe on a longitudinal seam weld, rather than on an outside surface weld as originally suspected.

A Deficiency Report and a related Noncompliance Report were secured for the location described by the alleged. These documents showed a repair of a weld overlap at the described location was made by grinding an area of excess reinforcement and poor fusion in November, 1979.

On May 2, 1980, a liquid penetrant test was conducted on the area of that repair and no cracks were detected. The excess reinforcement ("fall through") was also measured and found to be within ASME welding code tolerances.

No items of noncompliance were identified during the conduct of this investigation.

DETAILS

1. Personnel Contacted

Union Electric Company

M. I. Doyne, General Superintendent, Callaway Construction
F. D. Field, Manager, Quality Assurance
J. V. Laux, Assistant Engineer, Quality Assurance
R. L. Powers, Supervising Engineer, Quality Assurance
W. H. Weber, Manager, Nuclear Construction

Daniel International (Contractor)

J. R. Cook, Manager, Quality Control
J. A. Holland, Manager, Project Quality Assurance
T. W. Linder, Piping Foreman
J. D. Prince, Pipe Fitters' General Foreman
H. J. Starr, Project Manager
W. L. Sykora, Assistant Project Manager

The inspector and investigator also contacted and interviewed other licensee and contractor personnel, including craftsmen, QA/QC, technical and engineering staff members.

2. Introduction

On October 11, 1979 the Region III office received by phone, an allegation from a welder at the Callaway Nuclear Plant. He alleged that he had detected a crack in a stainless steel pipe weld in the vicinity of the accumulator tank. He further stated that he informed his supervisor of the weld crack, however, the supervisor was reluctant to report it to quality assurance personnel.

Prior to the initiation of the on-site investigation on March 26-27, 1980, efforts to recontact the allegor in an attempt to secure a more accurate location of the alleged weld crack were unsuccessful.

3. Allegation

The allegor stated he had detected a three-quarter inch crack in a weld located near a valve in a fifteen foot long section of ten-inch stainless steel pipe that ran from under an accumulator tank. He further stated that he informed his supervisor of the crack, however, his supervisor was reluctant to inform quality assurance personnel because he was of the opinion the weld had already been accepted.

Finding - An on-site investigation was made on March 26 and 27, 1980. Based on the description of the location of the weld crack supplied by the allegor, it was determined from the piping isometric drawings that a total of 15 welds (both vendor and field welds) were encompassed.

(Exhibit A - Location of Welds Inspected). (Field welds may be described as those welds made on-site by Daniel International welders in the process of fitting and installing pipe. Vendor welds are those welds made in the assembly of the pipe, (either longitudinal or circumferential) by a supplier prior to its delivery to the plant site).

Weld Control Records (F101's) were examined for each field weld made by Daniel International welders to verify that all finished welds had been accepted after radiographic testing, or appropriate repairs made. The stainless steel pipe welds involved, being Class 2 pipe welds, required radiographic testing prior to acceptance.

For welds requiring repair, related Nonconformance Reports (NCR's) were examined to determine which welds were repaired and for what reason. Of the 15 welds involved, three had been repaired. The NCR's for these three welds showed each repair was made because of internal weld defects, rather than external weld defects (i.e., surface crack in weld). Based on these records, the possibility of the alleged weld crack (in the field welds only), being repaired between the time of the allegation and the time of the investigation was eliminated.

Visual inspections of the 15 welds were subsequently made by the NRC Resident Inspector (using a low power magnifying glass), and by a certified Daniel International Quality Control inspector (visually unassisted). These inspections were conducted in a manner which allowed each inspector to conduct a separate and independent inspection of each weld involved. During the course of these inspections, no visible cracks were detected in any of the welds (field or vendor).

It was further ascertained that two foremen were in charge of welding operations in the "15 weld" accumulator tank area during the course of the welds' completion. J. D. Prince was in charge of welding operations from January 6, 1979 to August 6, 1979. T. W. Linder was in charge subsequent to August 6, 1979. On March 27, 1979, both J. D. Prince and T. W. Linder were interviewed as to whether either of them had ever received a report of a weld crack in the "15 weld" accumulator tank area. Both responded to the effect that neither could recall any such weld crack ever being reported, or ever existing.

On April 8, 1980, the NRC Resident Inspector was contacted by Gary Hayden, a reporter for the Witchita Eagle. Hayden informed Hansen that he and another reporter, Julie Charlip, had been in contact with a person who made an allegation concerning the detection of a crack in a stainless steel pipe weld at the Callaway Nuclear Plant. The description supplied by their source was consistent with the one received by the NRC on October 11, 1979, except that the crack was described as "in a seam weld on the inside of a stainless steel pipe" running from an accumulator tank.

Both Hayden and Charlip were contacted by telephone and they verified this allegation. They declined to disclose the identity of their source, but stated their source would be requested to contact the NRC.

On April 11, 1980, a phone call was received from Hayden's source who identified himself as being the same person who made the Callaway weld crack allegation to the NRC on October 11, 1979. He furnished a description of the crack indicating it was in a seam weld on the inside of a stainless steel pipe running from Accumulator Tank Tepo 1A. The alleged agreed to mark the location of the crack on a copy of the isometric drawing and return it to the NRC. A copy was mailed to him for that purpose on April 11, 1980.

On April 14, 1980, the NRC Resident Inspector obtained a NCR dated May 5, 1979 and a subsequent DR (Deficiency Report) dated September 6, 1979 for the pipe fitting the alleged's description and location. (Exhibit B - Deficiency and Nonconformance Reports). The DR showed a repair had been made (an area of excess reinforcement and poor fusion was removed by grinding), to a defect referred to as a weld overlap (a condition which has been known to be visually interpreted as a crack, since it has a similar appearance). This repair was made in the longitudinal seam weld of the S002 piping at weld F004 on November 5, 1979.

On April 23, 1980, the isometric drawing was received by the NRC from the alleged with the location of the weld crack indicated. (Exhibit C - Isometric Drawing marked by alleged). A letter from the alleged transmitting the drawing, stated the crack was approximately 4 to 6 inches from weld F004 in the S002 piping, and there appeared to be an excessive amount of "fall through" in the seam weld from the 45 degree pipe elbow to weld F004.

Subsequent visual examination by the NRC Resident Inspector revealed that the grinding repair indicated on the Deficiency Report had been performed in the area of the alleged weld crack beginning at the end of the pipe at weld F004 (which had not yet been completed) and extending approximately 14 inches inward. On May 2, 1980, the NRC Resident Inspector observed while a Daniel Quality Control Inspector performed a liquid penetrant test on the area of repair. No cracks were detected by the NRC Inspector or the Quality Control Inspector. The remaining reinforcement ("fall through") in the pipe was measured and found to be within ASME welding code tolerances.

Management Discussion

At the completion of the investigation the findings were discussed with F. D. Field, Manager UE Quality Assurance, J. V. Laux, Assistant Engineer UE Quality Assurance, W. H. Weber, UE Manager of Nuclear Construction, J. R. Cook, DI Quality Control Manager, J. A. Holland, DI Project Quality Assurance, H. J. Starr, DI Project Manager, and W. L. Sykora, DI Assistant Project Manager.

They were advised no items of noncompliance were identified during this investigation.