

1

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

REGION III

Report No. 50-346/80-28

Docket No. 50-346

License No. NPF-3

Licensee: Toledo Edison Company
Edison Plaza
300 Madison Avenue
Toledo, Ohio 43652

Facility Name: Davis-Besse, Unit 1

Investigation At: Davis-Besse site, Oak Harbor, Ohio

Investigation Conducted: September 29 - October 1, 1980

Investigator:

J. E. Foster
J. E. Foster

12/5/80
(Date)

Inspector:

J. F. Schapker
J. F. Schapker

12/5/80
(Date)

Reviewed By:

C. E. Norelius
C. E. Norelius, Assistant
to the Director

12/9/80
(Date)

D. Danielson
D. Danielson, Chief

Engineering Support Section 2

12/5/80
(Date)

Investigation Summary

Investigation on September 29-October 1, 1980 (Report No. 50-346/80-28)
Areas Investigated: Special unannounced investigation into allegations of
improper welder qualification and welding documentation by contractor
personnel; consisting of a review of pertinent records, interviews with
personnel, inspection of welds. The investigation involved 24 inspection
hours onsite by two NRC personnel.

Results: No items of noncompliance with NRC requirements were identified.

8101290 506

REASON FOR INVESTIGATION

On September 22, 1980, Individual A contacted the NRC Region III (RIII) office by telephone. He indicated that he had been a welder for Catalytic, Inc., which was performing structural steel welding in the containment area of the Davis-Besse plant. He stated that some welders had not qualified according to applicable Code requirements and welder identifications had been changed to conceal this fact. An NRC investigation was initiated on the basis of this information.

SUMMARY OF FACTS

Individual A stated that all initial welder qualifications were performed utilizing pipe pieces. However, some welders later qualified utilizing plate pieces, and some welders had difficulty passing or failed this qualification test.

Individual A indicated that the identification numbers for those welders who passed the plate qualification tests were placed on welds performed by other welders. He also indicated that there had been little, if any, quality control inspections on the welds concerned.

During the period September 29-October 1, 1980, pertinent records were reviewed, interviews held with personnel, and welds on containment structural steel modifications were inspected by RIII personnel.

It was determined that welder qualifications for butt welds had previously been questioned during a quality assurance audit, and dispositioned by Catalytic Nonconformance Reports (NCRs). NCR 80-102, dated September 20, 1980, identified the problem, and later NCRs addressed specific welds and welders. The discrepancy recorded on the NCR was that butt welds on thick plates exceeded the depth variable included in the original welder qualification procedure.

Discussion with Catalytic, Inc. personnel, and a review of records indicated that a limited number of welders had performed butt welds to add extension bars to existing plates. A "book-case" of plates was then added to the original plate and extension for strengthening. Welders identified as having performed welds were requalified, utilizing plate samples. Site personnel stated that these plate samples were chosen so as to be more representative of the welding performed.

An individual named by Individual A had failed the plate qualification test in one position during a qualification test on September 23, 1980, and had passed the requalification by retest on September 25, 1980.

Inspection of butt welds did not indicate that welder identification symbols had been placed on some welds, however, they could have been there and covered by later welding of the bookcase stiffeners. In any case, butt welds had been performed prior to thin plate stiffener welding. The identification of the welder qualification nonconformance occurred later in the

process. This would make the alleged falsification of welder identification markings, and other documentation falsification (rod slips and weld travelers) difficult, if not impossible.

Interviews with site welders did not support the allegations concerning falsification of welder identification.

Site personnel stated that, in compliance with the applicable Code, final visual inspections were done on the welds and no fit-up inspections were required.

Visual inspection of a sample of welds by RIII personnel indicated they met applicable Code requirements.

No items of noncompliance with NRC requirements were identified during this investigation.

DETAILS

1. Personnel Contacted

Toledo Edison Company

*B. R. Byer, Assistant Station Manager
*P. Carr, Maintenance
*C. T. Daft, Quality Assurance Director
*D. Huffman, Administrative Coordinator
 D. Rhodes, Quality Control Supervisor

Catalytic, Inc.

B. Downs
H. Fosholdt
E. Wilcox
J. O'Neil
L. Peneese
S. Shaw
Welders B, C, and D

*Denotes those present at the exit interview.

2. Introduction

Davis-Besse, Unit 1 is an operational, 906 megawat pressurized water reactor, licensed to Toledo Edison Company. The plant is located near Oak Harbor, Ohio, approximately 20 miles east of Toledo, Ohio.

3. Background

The plant was brought to cold shutdown, and a refueling outage begun on April 7, 1980. During this outage, various maintenance and plant modification programs were implemented.

One modification program dealt with strengthening and stiffening portions of structural steel supporting piping systems in the plant containment area. As a part of this effort, some support base plates were extended and a lattice or "Bookcase" of plates were welded to the surface of the enlarged plate, providing added stiffening and strength. This work was done to meet the requirements of the American National Standards Institute (ANSI) B 31.1 Code as applicable to structural steel, with welders being qualified to American Society of Mechanical Engineers (ASME) Code Section IX, 1971 Edition.

Portions of the welding were performed by Catalytic, Inc. and some by the firm of Bentley. Catalytic personnel performed work under their own quality assurance program, and Bentley personnel operated under the Toledo Edison quality assurance program.

On September 26, 1980, when RIII was contacted, almost all welding had been completed and welders were being laid off. On November 3, 1980, the reactor was again brought to criticality and ascension to power was begun.

4. Receipt of Allegations

On September 26, 1980, Individual A contacted RIII by telephone and stated that he was a pipefitter-welder who had been employed at the Davis-Besse site for some nine weeks by Catalytic, Inc. He stated that he had previous nuclear welding experience at several plants.

He indicated he had been involved in structural welding being performed in the containment area, and that this work would be finished the following Monday or Tuesday (September 29 - 30, 1980).

Individual A stated that welder qualifications had been performed on pipe pieces (6 G position). However, he indicated, it had been found that this qualification procedure was not proper since it did not meet Code requirements, and some welders had been requalified on plate pieces.

He stated that not all welders had requalified on plant pieces, and some welders (one individual was named) had trouble passing the requalification test.

He stated that welder identification numbers and symbols for welders who passed the requalification test had been placed on welds performed by other welders to hide the fact that the welds had been made by welders who had not taken (or had not passed) the plate requalification test.

Individual A also stated that no quality control inspections had taken place on the welds involved, i.e., no fit-up inspection had been performed.

5. Contact with Resident Inspector

The NRC Resident Inspector (RI) was contacted on September 26, 1980, and advised that allegations related to welder qualifications had been received at the Regional Office.

The RI advised he was aware that a question had arisen recently on welder qualification and Catalytic personnel had been in contact with ASME personnel for Code clarification. He indicated that the question dealt with what weld thickness a particular qualification test qualified a welder to perform.

6. Management Discussion

On September 29, 1980, site personnel advised that an inspector performing a quality surveillance had questioned whether the Catalytic

welder qualification test weld, which was performed to a depth of 1/2 inch, was acceptable for certain plate butt welds which were 3/4 inch thick.

Catalytic NCR 80-102, dated September 20, 1980, was reviewed. This nonconformance report documented the qualification question and clarification discussions held with ASME personnel in an effort to determine if the qualification test would qualify a welder to perform plate welds over 1/2 inch thick. According to notes on the nonconformance report, ASME personnel stated their opinion that the qualifications were acceptable, and the NCR was therefore initially dispositioned "use as is".

Site personnel stated that Bechtel (plant Architect-Engineer) personnel did not accept this proposed disposition and directed that requalification welds be performed by pertinent welders.

Catalytic representatives indicated that they had reviewed weld travelers, and identified welders who had performed butt welds on thick base plates. They stated that these welders, and several additional welders (as a contingency against further heavy plate welding requirements), had been qualified in the 2G and 3G welding positions utilizing plate samples. They advised that this requalification was chosen as being more representative of the actual welding performed. Qualification by pipe piece in the 6G position would have been acceptable, and qualification for plate in the 2G and 3G positions would also meet applicable Code requirements.

A review of records, including each requalified welder's qualification sheet(s), and a weld tracking matrix, indicated that appropriate welders had been requalified.

Individual A was not identified as having performed thick plate butt welding, nor as having been requalified.

During review of qualification documents, it was found that Individual B who had been named as a welder who had failed the requalification testing, had passed requalification on the 3G position, but had failed the 2G position on his initial requalification attempt on September 23, 1980. He had been retested and qualified on the 2G position on September 25, 1980. This met applicable Code requirements.

7. Procedure Review

Davis-Besse General Welding Procedure (DBGWP) Revision One, dated January 18, 1979, was reviewed. This procedure provides that a welder vibro-etch his identifying code within one inch of a weld he has performed, but this need not be done if impractical (due to inaccessibility or other factors).

Site personnel stated that this method of welder identification was in addition to that required by the pertinent welding Code, since welder identification was also tracked by weld travelers and rod issue slips.

8. Inspection of Welds in Containment

RIII personnel visually inspected welds on base plates on seismic restraints SRG and SR6E (and others). The welds appeared to meet applicable Code requirements.

No welder identification etchings were observed on the thick base additions to SR6 and SR6E or the "bookcase" stiffening plates. Vibro-Etched welder identification marks outlined by an ink field were noted on other more accessible welds.

9. Interviews of Welders

Three welders, including the day shift union steward, were selected at random and individually interviewed. None of the welders corroborated the allegations provided by Individual A. They all stated that no welder would have allowed an improper welder identification to be placed on a weld.

10. Quality Control

Discussions with site personnel indicated that final visual inspections were performed on the subject welds. It was indicated that these inspections would indicate any fit-up error, and were the sole inspection requirement per the ANSI B 31.1. Code, as applicable to structural steel welding.

Catalytic QC personnel indicated that several nonconformance reports had been generated to document and disposition the thick plate butt welds made by welders who later were requalified. They advised that several additional NCRs were in the process of being written.

Catalytic personnel subsequently contacted RIII and advised that all NCRs had been written and dispositioned. The welds in question were dispositioned as being acceptable.

11. Exit Interview

On October 1, 1980, an exit interview was held with licensee and contractor representatives. The allegations and findings were outlined.

No items of noncompliance were identified during the investigation.

A commitment was made by licensee personnel to contact RIII and advise of NCR dispositions, when finalized. As noted above, this commitment was fulfilled.