

FOR TYPING

SSERCLEAN REWRITE
FROM J'A MARKUP
& phone conversations
6/12-6/13Task: Allegation A-215, A-175, A-240, A-239, A306LReference No.: 4-84-A-06/103, 109, 126, 144, 184L

Characterization: ^{it is alleged} The allegation is that ^{questionable} welder qualifications were ^{improper} as follows: (1) ^{because} Welders were not qualified; (2) Welders were not on the project at the time welding was performed, ^{and} (record deviations); (3) Welders ^(DE) were not qualified to correct procedure/technique ^{and} and (4) ^{and} Deficiency report on welder qualification was destroyed, and that the quality of welding was

Assessment of Allegation: The implied significance of this allegation is that ~~improper welding could have occurred that~~ could place the quality of construction in question.

The NRC staff reviewed the welder qualifications for ^{randomly selected EBASCO, Thompson-Bachman (T-B), NISCO, and Merawing welders who may have} Ebasco and the following ~~contractors that performed safety-related welding on site systems.~~

1. Ebasco

The NRC staff selected

A random sample of 25 ^{EBASCO} welders were selected from travelers, weld rod control forms, ^{and} the welder qualification ^{EBASCO} summary. The welder qualification records were reviewed for compliance to applicable Codes and ^{EBASCO} procedural requirements. ^{The NRC staff found the EBASCO} All welders were found to be qualified or partially qualified to the referenced weld procedures. ^{in each case} The welder qualification status record identified the limitations of ^{qual} certification for each welder, when partial qualification (thickness range) was required. ^{NRC staff found EBASCO} The welder qualification records ^{files} and status records were found to be ^{acceptable} in compliance to applicable requirements.

unqualified welders may have performed welding on safety-related systems, which

FLUSH LEFT ALL

2. Tompkins-Beckwith (T-B)

The NRC staff selected a random sample of 57 T-B

Fifty-seven welder qualification records were randomly selected for review. In some cases it was noted that the welder qualification records for a specific Weld Procedure Specification (WPS) was not included in the welders' file. However, further review of WPSs, welder qualification cross-reference list, and Welders Qualification Summary, verified that all the T-B welders reviewed were properly qualified in accordance with the ASME and AWS Codes and T-B procedures. The NRC staff found T-B welder qualifications records to be acceptable.

3. NISCO

The NRC staff selected 11 NISCO

A random sample of eleven welders' qualification records were selected from completed quality records. The weld procedure applicable to this review was NISCO 80.3.2. The welding was performed on large bore pipe (30") on welds identified P4W1 and P5W1. Certifications for the selected welders was in accordance with the requirements of the applicable code (ASME Code Section III and IX) and procedure requirements, and were acceptable.

4. Mercury

The NRC staff selected a random

INSERT (A) (see back)

Sixty-two welders' qualification records were evaluated. There were eleven initial "discrepancies" identified and addressed as stated below:

(1. see p. 3)

2. a. Welder M-109 - The NRC staff found that the welder's S problem was weld procedure specification (WPS) WP-Y certification dated November 26, 1982, was subsequently voided on October 22, 1983; the welder qualification status sheet did not show qualification or welding performed to WPS-Y. The welder apparently was hired on January 25, 1980 and terminated on February 8, 1980 (from information obtained in welders qualification package). Ebasco issued NCR-W3-7724 to address this finding. The NCR has not been adequately dispositioned. The disposition does not detail how it was

INSERT (A) p. 2 under Mercury

(NO 9) Of the 62 sampled, the staff initially found problems with 12 welders. Following the NRC staff's identification of these problems, EPASCO issued Nonconformance Report (NCR) W3-7724. However, EPASCO's disposition of this NCR failed to adequately address these problems with Mercury welders and was not acceptable to the NRC staff.

(P) The following problems were identified by the NRC staff, and in some cases were inadequately addressed in the EPASCO NCR.
~~In addition,~~

→ START REORDERING
WITH

#1 on p. 3 ...

changes to records

(qualification dates, specific welding procedure
(WPS), specification)

These problems identified by the NRC staff included possible falsifications of records (changes to qualification dates and to specific welding procedure specifications) and have been forwarded to the NRC Office of Investigations (OI) for their review.

determined ^{if} the welder had ~~not~~ performed welding to ^{WPS-Y} this procedure "at any time." ^{Maximum} The welder qualification status records were not kept current as required by procedure, ^{and could not be relied} therefore cannot be depending upon as a ^{quality control} record. A review of all ^{he} Quality Control Weld Data Reports (Form 197-2) ^{must} needs to be performed to determine ^{by LP&L} this welder had ~~not~~ welded to ^{WPS-Y} this process. (This applies also, to Welder M-101.)

It is alleged that an EBASCO DR was destroyed.
 1. Welder M-44 - ^{the} An allegation was made specifically addressing ^{ad the} this welder's qualification record, ^{high noted that welder was} Originally qualified to WPS-B, ^{but that the} record had ^{been} retyped for clarity November 26, 1982 which incorrectly indicated the welder qualified to WPS-Y. ^{NRC staff reviewed the} The welder's qualification record, ^{was but} could find no qualification to WPS-Y, and found reviewed. The retyped form, referenced above, is no longer in the welders file; the allegor supplied a copy of the welder qualification certification form to the NRC. ^{No documentation concerning the DR.} finding or disposition of this error was found. The allegor ^{for the NRC staff} supplied a copy of ^{an} unnumbered Ebasco deviation report (DR) ^{copy} which ^{and a copy of the} addressed this finding. This DR ^{could not be located} could not be located in Ebasco's file. This item needs to be addressed by the licensee to assure the welder in question did not perform ^{to WPS-Y} welds for which he was not qualified.
 LP&L must determine if this action on DR ??

3. Welder M-9 - ^{is} The welder's qualification status record ~~included in this~~ reflects ^{ed} different dates than that recorded on ^{those} welder qualification test record for procedure (WPS)-E. ^{the} The test record ^{had been} was revised on January 23, 1983 to change the dates from December 18, 1979 to December 18, 1978. ^{However,} The welder qualification status record indicates the qualification test was performed on December 18, 1979 as originally dated. It appears the date on the welder qualification test record was changed to reflect the date at the top of the form. The actual date of ^{the} welder qualification ^{test} needs to be ascertained, ^{must} and ^{by LP&L} assurance that the welder ~~did not~~ perform safety-related welding on systems prior to this date.

The NRC staff found that this

4. d. Welder M-101 - ^{was} Welder originally qualified by test to weld procedure specification (WPS)-B, ^{but that} the welder's qualification test ^{record} form (WQT) ^{qualification} was "revised for clarity" on November 26, 1982 and the WPS on the revised WQT was changed to WPS-Y. WPS-Y is a combination weld process gas tungsten arc welding (GTAW) and shielded metal arc welding (SMAW). WPS-B is a SMAW weld process only and does not qualify the welder to the WPS-Y procedure. This finding is addressed ^{EPASCO issued} in Nonconformance Report (NCR) W3-7724 ^{to address this change but the}. This NRC disposition is inadequate. The method utilized to determine the welder did not weld to this procedure is not stated; ^{LP&L must} 100% review of all Quality Control Weld Data reports made was not performed to assure ^{determine if this} the welder ^{performed} did not weld ^{to WPS-Y} in this process.

5. d. Welder M-129 - ^{This} Welder's qualification test record ^{indicated qualification} for WPS-D was not signed by Mercury representative. ^{The NRC staff reviewed the welder's qualification records} Welder was qualified to WPS-G, ^{but} the same date which also qualified the welder to perform welds to the WPS-D weld process. ^{The staff found} NRC finds this acceptable. ^{and determined that this}

6. f. Welder M-142 - ^{The NRC staff found that this} Welder's qualification status record shows ^{ed} welds accomplished to WPS-D and WPS-Y; ^{however} The welder's file contained no welder qualification records. ^{welder qualification data located} The welder's qualification records were misfiled at the time of the review. The records were reviewed by the ^{NRC} staff, with no adverse findings, and found acceptable.

7. g. Welder M-85 - ^{This} Welder ^{had} performed qualification test to WPS-D, ^a but February 16, 1981, the test ^{report had been} was subsequently voided on November 8, 1983 for an unspecified reason. A welder's testing laboratory test report dated August 6, 1982 for ^{qualification for} WPS-D ^{was in the welder's file, but the NRC staff found} is included but no Mercury company welder qualification record ^{for this test}. In addition, the welder's qualification status record indicated ^{that} welds ^{were} performed during periods when the published welder qualification status record did not include the welder's name; ^{the NRC staff learned} The welder was originally

The NRC staff discovered that the welder's qualification record had been

with Mercury. <

that the welder had qualified to WPS-D on December 12, 1979, retested on February 16, 1981 after a break in employment. This test record was "voided" due to because of improper changes to the form, that is "tape applied over" for record attributes "diameter," "thickness range" and changed the numbers. EBASCO issued to address these changes but the NCR was unacceptable to the NRC staff. Subsequently, NCR W3-7724 was issued. The disposition of this item was not adequately addressed in the NCR.

The welder had performed welds for Mercury while he resigned and was employed by Fischback & Moore; the parent company for Mercury. He had been "loaned" to Mercury, and WPS-D His qualifications were still current at the time the welds were performed.

Welder M-190 - The welder's file shows a termination date of November 29, 1982; however, the welder's qualification status record shows the welder had performed welds thru January 11, 1983. The welder was terminated on November 29, 1982, however employment records which were not in the qualification file indicates he was rehired on late December 26, 1982. Therefore, this is not a problem. The NRC staff reviewed these records and determined that this welder was employed at the site and was qualified during the time he performed welds.

Welder M-177 - The name of the welder is typed over that of another welder for WPS-G. There is no qualification records for WPS-Y but the welder qualification status indicates welds were performed to WPS-Y. this procedure. The typed over document has been turned over to the NRC Office of Investigation. The qualification records for WPS-Y was located and filed with the welder's records, therefore this qualification issued was resolved. However, the document with the name typed over

Welder M-197 - The welder's file contained a report of test results which contained a report of test results indicating failure to meet acceptance requirements for WPS-D qualification. However, the welder's qualification status record indicates the qualification was accepted on June 19, 1981. No qualification record was found in welder's file to substantiate this.

records did not indicate why this welder had performed welds since his termination.

for their review of qualification records.

The NRC staff subsequently verified the welder's WPS-D

- 6 -

20 (9)
Previous ^{WPS-D} qualification records ^{were eventually} located and inserted in the welder's file. Qualification date was January 23, 1981, and the welder qualification status records ^{was found to be acceptable} indicate this process was maintained for 3/8" O.D. and greater diameters. The test the welder failed was for 1/4" O.D. tubing. The weld records reviewed indicate the welder performed welds within the original qualification only. This issue is no longer a problem.

staff reviewed Weld Data Report OCR 1020 and discovered that the
11. K. Welder M-315 - ^{This} Welder performed welding to WPS-D, ^{but the NRC staff found} no record of ^{however, the staff was able to verify this} WPS-D qualification to this procedure was in the welder's file. Welder was not qualified to ^{WPS-D} this procedure. The welder ^{had} started one weld to ^{his} this procedure which was rejected at fit-up for being an "unqualified welder" ^{and for his welds being} under cut and cracked tack welds. ^{and that} Subsequently, the defective weld ^{had been} removed and rewelded by a qualified welder. (Reference - Mercury Quality Control Weld Data Report OCR # 1020 System 52A-2 sheet 2 of 6.) ^{LP&L must} Ebasco needs to ^{that} undertake an indepth review to assure ^{that} this welder did not perform any welds for which he was not qualified. This review should include Quality Weld Data reports should be made as the welders qualification status sheet are not reliable QC records to determine this was the only weld performed to this procedure. ^{supplied by the allegor}

100% of weld data reports
12. T. Welder M-55 - ^{The NRC staff reviewed examples of welder qualification records} Allegation ^{ed to contain} of improper utilization of combined welding processes [gas tungsten arc welding (GTAW) and shielded metal arc welding (SMAW)] to qualify ^{the} welder(s) beyond the thickness actually welded. Examples of welder qualification records with information applicable to this alleged deviation was provided. (Allegation exhibit 25.) Review of these record examples and others in the QA records vault were performed. ^{that the correct process} The welder qualification records clearly indicate which weld procedure (WPS) was utilized to qualify the welder. ^{to} In this case WPS-Y was indicated. WPS-Y for base metal thickness .344 specifies a thickness of .1555 deposit for GTAW and ^{The staff also reviewed} .1875 for the remainder with SMAW as qualified on Procedure

In this case, welder's case, the staff found that

and verified that ^{procedure} ~~the~~ WPS-V ~~qualification~~ was in accordance with the ASME Code.

^{Record}
Qualification Report (PQR) No. Y1679, ~~The Welder Qualification~~
~~Record (WOR) is correct, as written.~~ The thickness range for the
combination process is 1/16 to .688 [2 times thickness of material
thickness (Tm)]. ^{The Code does} ~~It is not required to specify the thickness range~~
^{for each process, on the welder qualification record, because these ranges}
~~are specified in the weld procedure specification to which the welder is qualified.~~
~~performed the qualification and is identified on the WOR.~~
→ INSERT (B) (see back), then

⇒ GO TO HANDWRITTEN

In conclusion, the welder qualifications for all contractors except Mercury were found to be in compliance with ASME code requirements. Because of improper maintenance of welders qualification records, as required by Mercury procedures; inadequate documentation of supervision of the weld test lab where the welders performed some of the qualification test; problem with welder qualifications as illustrated above were identified and need to be resolved to assure compliance to code. This allegation has safety significance and generic implications pertaining to Mercury Company only.

Potential Violations: The lack of incomplete and incorrect records is a violation of 10 CFR 50 Appendix B, Criterion XVII and the ASME Code. The use of unqualified weld is a violation of 10 CFR 50, Appendix B, Criterion IX and the ASME Code.

Actions Required: LP&L shall prior to fuel load:

1. Review 100% of Mercury welders to assure proper qualification to the ASME and AWS codes.
2. Assure all problems previously identified and to be identified on NCR are proper dispositioned (corrective action) and adequately closed.
3. For welders identified specifically on this allegation evaluation, a review of all weld records are required to assure unqualified welders did not perform welding on safety related systems.

INSERT (D) p. 7

(F) In its ~~review~~^{the 62} of Machinery welder qualifications^{records},
the NRC staff identified the 12 problems cited above
~~previously and~~ found the disposition of
EPASCO NCR W3-7724 inadequate. In addition,

W. CONTINUE

WITH

HANDWRITTEN

the NRC staff found that welding filler material was not being controlled as required by the ASME or AWS Codes for low hydrogen rebaking process. welding electrodes (e.g., E-7018) ~~for the~~ ^{ASME}

The staff learned that this was common site practice.

④ During this ~~last review~~ ^{ASME} The staff observed that welding electrodes, Low hydrogen were being ~~reheated~~ ^{reheated} at temperatures of 180°F to 220°F ~~in the~~ ^{the} ~~EPASCO~~ ^{EPASCO} ~~warehouse~~ for a period of 4 hours. The ASME and AWS Codes require ^{THAT} a low hydrogen ^{WELDING} electrodes, ^{THAT WHICH} except ~~the~~ ^{the} 4-hour issue ^{TIME} constraint, or in the case of loss of power ^{WHICH} ~~that~~ exceeds the 4-hour time period, to be reheated between 450°F to 500°F for 4 hours. EPASCO and site contractual procedures allowed the lower temperatures at ^{THE} longer holding time, ~~to be reheated~~ ^{BUT}. Proper justification could not be furnished to the NRC ^{STAFF} during this review.

⑤ Additionally, the ^{NRC} staff observed ^{Low hydrogen E-7018} a electrode being issued from the ^{REBAKE OVER} ~~Rebake Over~~ during this review. Controls do not ~~allow~~ ^{PROVIDE FOR} issuance until ^{the} a rebaking process is completed.

on site

The ^{welding electrode} ~~reheating~~ ^{ON SITE} ~~over~~ ^{did} not have the rebake capability. Low hydrogen electrode coating are ^{IS} ~~susceptible~~ ^(SUSCEPTIBLE) to moisture absorbing, ^{WHICH IS} ~~is~~ a major contributing cause of ^{UNDER BEAD} ~~under bead~~ cracking.

based on our review of this allegation, THE NRC STAFF CONCLUDED THAT EPASCO, T-B, and NISCO WELDER QUALIFICATIONS

In conclusion, the welder qualifications for all contractors except Mercury were found to be in compliance with ASME Code requirements. However, the staff found that Mercury welder qualifications were not in accordance with ASME Code requirements due to improper maintenance of welder qualification records, as required by their procedures, in adequate supervision of the welder testing laboratory where the welders performed some of the qualification tests. The discrepancies in welder qualifications as illustrated above were identified and need to be resolved to assure compliance to code. This allegation has safety significance and generic implications pertaining to Mercury Company only. However, the problem with the low hydrogen electrode rebake process appears to be generic and may have safety significance and generic implications.

In addition, the staff found that the

on site was not in accordance with the ASME and AWS Codes.

⊕ This allegation has safety significance and generic implications.

Also, enter the unnumbered
EPASCO DR in the system,
and resolve the DR.

Potential Violations:

The presence of incomplete and incorrect records is a violation of 10 CFR 50, Appendix B, Criterion XVIII, and of the ASME Code.

The use of unqualified welders and improper control of welding electrodes is a violation of 10 CFR 50, Appendix B, Criterion IX, and of the ASME and AWS Codes.

Action Required: LP&L shall, prior to fuel load:

1. Review 100% of Mercury welder qualification records to assure proper conformance to the ASME and AWS Codes, and take corrective action as required.
 2. Assure that all ^{Mercury} ^{welder} ^{qualification} ^{by the NEC staff} ^{discrepancies} identified, and those noted on the ^{EPASCO} ^{NCR}, are properly dispositioned and adequately closed.
 3. Review 100% of ^{Mercury} ^{welder} ^{qualification} records to assure that unqualified welders did not perform welding on safety-related systems, and
 4. Review the improper control of low hydrogen electrodes for rebaking requirements, and for proper issuance control, and take corrective action as required.
- Variance from the ASME Code requires ASME approval.
- for compliance with the ASME and AWS Codes,

SEE REWRITE, BACK of PG. 9

Known Violations:

1. ~~presence~~ of incomplete and incorrect records is a violation of 10 CFR 50, Appendix B, Criterion ~~IX~~, and the ASME Code. The use of ~~unqualified welders~~ ^{and improper control of welding electrodes} is a violation of 10 CFR 50, Appendix B, Criterion ~~IX~~ ^{and} the ~~ASME Code~~ ^{AWS and}.
~~The improper control of welding electrodes is a violation of 10 CFR 50.~~
Action Required: Appendix B, Criterion

LP&L shall, prior to fuel load:

1. Review 100% of Mercury welders ^{qualifications} to assure proper ^{conformance} ~~operation~~ to the ASME ~~Code~~ ^{and AWS}.

Take corrective action to

2. ~~Assure that all problems previously identified~~ ^{discrepancies} ~~those to be assigned on NCR are properly dispositioned~~ ^{by the staff} and adequately closed.

3. ~~For welders identified as unqualified, an evaluation is required to assure that unqualified welders did not perform welding on safety-related systems.~~ ^{Review of all weld data records}

4. Review the improper control of low hydrogen electrodes for rebar ^{process} requirements and proper issuance control, and take corrective action as required.

THIS
IS
THE
ASME
STAMP

References

1. ASME Section IX, Section III NB, NA.
AWS D1.1

~~add AWS 3~~

11?

2. Mercury Procedure:

MCP-2100-N49720 - Welding Control Procedure, Revision 13.

WPS-E-N49720 - Welding Procedure Specification, Revision 11.

WPS-Y-N49720 - Welding Procedure Specification, Revision 9.

WPS-D-N49720 - Welding Procedure Specification, Revision 13.

3. Ebasco Procedure:

WPS-89R5 - Welding Control Procedure

WPS-43R18 - Welding Control Procedure

CP-684, Revision H - Qualification of Welders

4. NISCO Procedure:

WPS-80.3.2 - Welding Procedure Specification 30" P4W1 P5W1

5. Tompkins-Beckwith Procedure:

WPS-8.4 - Welding Control Procedure

WPS-8.6 - Welding Control Procedure

WPS-1.8 - Welding Control Procedure

WPS-1.4 - Welding Control Procedure

WPS-1.7 - Welding Control Procedure

6. ~~Manufacturing OCR~~ ~~Package~~ 1020. ~~System 52A-2 sheet 2 of 6~~

7. Exhibit 25 ~~DR & WQR for~~ ~~(Welders M-55)~~

add 10 CFR 50 App B
Criterion XVII
Criterion IX

Statement Prepared By: _____
J. Schapker _____ Date _____

Reviewed By: _____
Team Leader _____ Date _____

Reviewed By: _____
Site Team Leader(s) _____ Date _____

Approved By: _____
Task Management _____ Date _____

Document Name:
SSER X A-215

Requestor's ID:
CONNIE

Author's Name:

Document Comments:
comm from displaywriter 5/29/84

Document Name:
SSER A-186B

Requestor's ID:
PATTYN

Author's Name:
V. Wenczel

Document Comments:

FINAL
6.19.84
Rev. 2

Document Name:
SSER A-186B

Requestor's ID:
PATTYN

Author's Name:
V. Wenczel

Document Comments:

FINA
6.19.84
REV 2