

SSER

Task: Allegation A-337

Reference No.: 4-84-A-47b

Characterization: The twofold Allegation is that (1) Mercury instrumentation and control tube track welding should have been performed to the requirements of AWS welding specification D1.3 for sheet metal rather than to AWS welding specification D1.1 for structural steel, and (2) that because Mercury Procedure 658 was revised on March 15, 1983, to include AWS D1.1 welding requirements, any tube track welding performed prior to this time may be inferior and should be reviewed and upgraded if necessary to the revised procedure.

Assessment of Allegation: For the first part of this allegation, AWS Specification D1.3 covers the welding of thin plate, such as sheet metal. The allogger felt that since the tube track material was thin (0.110 inches), AWS specification D1.3 should be used rather than AWS specification D1.1.

The tube track weld was qualified per ASME Section IX for thickness of between 1/16" (0.0625 inches) and 7/8" (0.875 inches). Since the requirements of ASME Section IX are equivalent to or give broader coverage than those of AWS D1.1 and D1.3, any weld within the applicable thickness range can be successfully performed to conform with code. Accordingly, there is no need to use specification D1.3 for welding thin metal.

For the second part of the allegation, EBASCO General Specification 1C-1 states that that "welding of safety-related structures, systems and components shall be performed in accordance with the requirements of ASME Section IX." The exception is structural steel, which can be welded to AWS D1.1 specifications (see EBASCO specification LOU 1564.724). Welding standards required by ASME Section IX are equivalent to or give broader coverage than those of AWS D1.1. Mercury welders and procedures were qualified to Section IX. Mercury considered tube track welding to be structural welding and designed their related program accordingly.

During an LP&L audit, it was discovered that the required welding inspection was not properly performed. In order to correct the inspection problems, Mercury Procedure 658 was revised to formalize the use of D1.1 welding and its associated inspection requirements.

EBASCO then reviewed the as-weld condition of the tube track welds. They tested the worst-case design loading conditions, choosing samples representing the worst welds obtainable, and found that the strength of the welds far exceeded the strength of the base metal. The test results indicated that the welds performed prior to March 15, 1983 were acceptable for the service intended and that no reinspection or upgrading was necessary.

The NRC staff discussed these findings with the allegor and visually inspected welds during subsequent plant walkdown. The staff concludes that this issue has neither safety significance nor generic implications.

[Potential Violations: None.] 4

Actions Required: None.

References

Statement Prepared By: \_\_\_\_\_  
W. H. Spaulding

\_\_\_\_\_  
Date

Reviewed By: \_\_\_\_\_  
Team Leader

\_\_\_\_\_  
Date

Reviewed By:

\_\_\_\_\_  
Site Team Leader(s)

\_\_\_\_\_  
Date

Approved By:

\_\_\_\_\_  
Task Management

\_\_\_\_\_  
Date

Document Name:

SSER A-337

Requestor's ID:

CONNIE

Author's Name:

Document Comments:

✓  
4

SSER

Task: Allegation A-337

Reference No.: 4-84-A-47b

Characterization: The allegation is that tube track welding by Mercury Construction Company was done to AWS D1.1, rather than AWS D1.3, as they should.

Assessment of Allegation: The original Ebasco Specification 1C-1 was vague in relation to tube track welding and inspection. It was later revised by DCN 1C-1293 which added the following requirement: "Welding details, qualifications and procedures shall conform with AWS Specification D1.1-72, AWS Structural Welding Code. Qualification tests are required for gas-shielded metal arc welding."

An interview with the LP&L QA staff indicated that LP&L audits had identified that Mercury was neither documenting welds nor their inspections. As a result, Ebasco issued NCR-4352 to track tube trace welding problems. Drawing B-430, Sheet 3 of Sheet X-23 was revised to add the statement that "All welding of tube track built up fittings and splices performed in the field shall conform to AWS D1.1. Nondestructive examination shall consist of 100% visual examination of the field weld. Acceptance criteria for visual examination shall be as specified by AWS D1.1." AWS D1.1 governs structural welding. AWS D1.3 governs strip steel welding. Ebasco selected AWS D1.1 for welding of tube tracks.

The NRC review of the requirements in the Ebasco specification shows that the allegation is not valid. Tube tracks were never required to be welded in accordance with AWS D1.1.

The safety significance of this item is minimal and there is no potential violation of regulatory requirements.

[Potential Violations: None.] <sup>4</sup>

Actions Required: None.

References

1. Extract from Ebasco Specification IC-1
2. Extract from DCN 1C 1293
3. LP&L Audit W3 82-62
4. LP&L Audit W3 82-73S
5. Extracts from NCR 4352
6. Interview with Gary Pittman

Statement Prepared By: \_\_\_\_\_  
Name Date

Reviewed By: \_\_\_\_\_  
Team Leader Date

Reviewed By: \_\_\_\_\_  
Site Team Leader(s) Date

Approved By: \_\_\_\_\_  
Task Management Date

Document Name:  
SSER A-337

✓  
4

Requestor's ID:  
PATTYN

Author's Name:

Document Comments: