

November 1, 1979

Interpretation of Para. 195.230(a)(2);
Letter Response to C. R. Brashears,
October 24, 1979, DMT-32; To File DMT-32

W. A. Gloe, DMT-32

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1. We have an indication that there may not be universal agreement with regard to whether or not Para. 195.230(a)(2) would allow local weld repair during the welding operation without identifying the weld as then "previously repaired" to avoid the prohibition against further repair.

2. The case in point is the answer to C. R. Brashear's [sic] Question 2.B.; both question and answer set out below as given:

"B. Is it considered a repair if a welder repairs his weld during the process of making the weld?

"Ex.: A welder has completed the stringer bead and hot pass (Ref: Attachment A) and is aware of incomplete fusion between stringer bead and hot pass. The welder either grinds out the hot pass and rewelds it from the outside or grinds out the stringer bead and rewelds it from the inside. The welder now completes the weld and the x-ray reveals lack of fusion in the same area, can this weld be repaired a second time?

"Answer:

"B. It is not considered a repair within the meaning of 195.230 if a welder takes corrective action during the original welding operation to assure acceptability of his weld. However, the requirements for 195.214(b) should be considered in this regard to assure that there is no departure from the written welding procedure in the welder's corrective action and that "sound, ductile welds" and thus produced. In the case that x-ray reveals lack of fusion in the same area, the weld may be repaired as a first repair, since the use of the term 'repair' in the regulations means repair of the completed weld, not corrective actions taken in the original welding operation."

3. One understanding is that our answer would be more clear and

consistent if we had specified that the welder may make such an in-process repair as described if the weld has not yet cooled.

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In this way, it is felt that we would be consistent with later prohibition of second repair to a weld segment on the basis of adverse effects due to double reheating of the heat affected zone of the weld.

4. One reason for expressing the answer to Question 2.B. in the manner selected is to recognize that it is not possible to avoid cooling of a weld bead other than by following with another weld bead or applying heat by some means. In the situation described, the stringer bead and the hot pass would have undoubtedly cooled, making it necessary to accept this condition as a definitive part of the question.

5. Further, since cooling of a weld may mean different things to different people, it would be necessary to specify a limiting condition, i.e., a specific temperature, or "hot to the touch," "warm to the touch," etc. Since weld cooling rate is an essential factor in weld quality, it is included in the welding procedure, and almost singly mandates the use of a qualified welding procedure. Therefore, the answer to the question rightfully refers to Para. 195.214(b) and specifies that there may be no departure from the written welding procedure.

6. Another view is that the reheating of a weld bead during repair by the welder as described has the same effect as reheating in the repair of a completed weld. This view approaches the essential dividing line in the interpretation as given, although from the opposite point. The answer given is phrased "within the meaning of 195.230," which section discusses repair of defects in completed welds. Therefore, though the view may or may not be correct, the regulations do not prescribe conditions for partially completed welds other than by referring to written welding procedures, and the answer aptly describes this fact. The answer otherwise would appear to assume requirements that do not exist.

7. If the intent of the regulations were to include single bead repair during the welding operation with repair of the completed weld under Para. 195.230(a)(2), it would appear that the control of Section 195.228 would have to be extended to in-process aspects of welding, and the reference to Section 6.0 of API Standard 1104 would have to be qualified or removed. If acceptability of a weld were to be determined at any time before completion, the only disposition that could be made in accordance with Section 6.0 would be to reject the weld.

8. Based on the above, it is concluded that the interpretation given is applicable, notwithstanding the fact that in extreme situations a technical conflict may be posed. It is also

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considered that the interpretation is consistent with both safety and industry standards to the maximum extent possible.

9. Therefore, unless there is other information which should be considered, it is felt that the interpretation should stand as-is.

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Note: This part of the interpretation will be reviewed with Dick Gwinn on 11/2 and his comments will be attached as a part of the record.