

POSITION STATEMENT

SUMITOMO PRECISION PRODUCTS FABRICATED BRAZED ALUMINUM HEAT EXCHANGERS

Questions

Does Sumitomo Precision Products Co. Ltd (SPP) reported nonconformance with certain aspects of the relevant regional standards regarding certification of welders, weld procedures, and inspectors fabricating header assemblies adversely affect the mechanical integrity of these brazed aluminum heat exchangers? Are any actions needed for their continued safe operation?

Answers

Based on the extensive operating experience of its members, CGA believes that SPP's reported nonconformance does not adversely affect the mechanical integrity of these brazed aluminum heat exchangers and that no new actions are needed for continued safe operation.

Reasons

SPP has supplied brazed aluminum heat exchangers for use in industrial gas plants for many years. Brazed aluminum heat exchangers are integral to the operation of these plants. In March 2020, CGA became aware that header assemblies of certain SPP supplied brazed aluminum heat exchangers had been fabricated using welders, weld procedures, and/or inspectors that were not certified in accordance with certain aspects of the relevant regional standards. This fabrication included header subassembly welds, core to header welds, and nozzle to header welds. Because brazed aluminum heat exchangers are considered pressure vessels, which require fabrication, inspection, and testing to specific regional standards, learning that some brazed aluminum heat exchangers were not manufactured to these specific regional standards raised concerns for CGA and its members.

To understand the breadth of this problem and risks posed by continued operation of plants using SPP supplied brazed aluminum heat exchangers, CGA members conducted an inventory of these heat exchangers and provided CGA with their operating history. This inventory is complete with more than 4,000 SPP supplied brazed aluminum heat exchangers identified. These heat exchangers range in age from newly installed to ones with over 30 years in operation. Taken in aggregate, these identified heat exchangers represent over 66,000 years (580 million hours) of operation. Out of all the brazed aluminum heat exchangers inventoried, only one incident was identified related to the welding of the header assembly. This heat exchanger, manufactured in 2015, experienced a weld crack, which was identified shortly after being put into operation in 2017. The crack allowed process gas to leak; however, there was no injury to either plant employees or the public. There is no indication that this weld crack resulted from SPP's reported nonconformance.

Based on the evaluation of its members' operating experience, CGA believes that SPP supplied brazed aluminum heat exchangers are reliable and safe. SPP's reported nonconformance does not affect the mechanical integrity of these heat exchangers and no new actions are needed for continued safe operation.

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