



U. S. Chemical Safety and Hazard Investigation Board

RECOMMENDATION STATUS CHANGE

SUMMARY

Report:	Enterprise Pascagoula Gas Plant Explosion and Fire
Recommendation Number:	2016-02-I-MS-R2
Date Issued:	February 13, 2019
Recipient:	GPA Midstream Association
New Status:	Closed – Acceptable Action
Date of Status Change:	April 26, 2022

Recommendation Text:

Revise GPA Technical Bulletin: Brazed Aluminum Heat Exchangers, or develop a new bulletin, to incorporate the significant lessons learned from this incident, including but not limited to:

- a. information on the potential of both minor leaks and catastrophic failure as a result of thermal fatigue;*
- b. clarification on the optimal placement of BAHX temperature and pressure sensors to better monitor operating conditions, including temperature rates of change; and*
- c. clarification on the need to safely vent layers that have been blocked off after interpass leak repairs, in all BAHX configurations.*

Board Status Change Decision:

A. Rationale for Recommendation

On June 27, 2016, a major loss of containment (LOC) resulted in the release of methane, ethane, propane, and several other hydrocarbons at the Enterprise Products Pascagoula Gas Plant (PGP) in Pascagoula, Mississippi. The hydrocarbons ignited, initiating a series of fires and explosions, which ultimately shut down the site for almost six months. Two workers were on the night shift when the incident occurred and were uninjured.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) determined that the probable cause of this incident was the failure of a brazed aluminum heat exchanger (BAHX) due to thermal fatigue. The absence of a reliable process to ensure the mechanical integrity of the heat exchanger contributed to the catastrophic failure of the equipment. Given this information, the CSB made three recommendations to GPA Midstream Association, a natural gas energy trade association that conducts research and develops technical reports and publications. This status change summary addresses CSB Recommendation No. 2016-02-I-MS-R2.

B. Response to the Recommendation

In December of 2019, GPA Midstream Association revised the GPA Technical Bulletin: Brazed Aluminum Heat Exchangers to incorporate the significant lessons learned from this incident and

included all of the information required in the recommendation. The revision includes but is not limited to addressing the following:

- *Warns of potential leaks due to thermal fatigue –under Inspection/Repair/Replacement there are two bullets discussing thermal fatigue;*
- *Clarifies optimal placement of temperature and pressure sensors and gives guidance on what to measure and how to measure it; and*
- *Informs that blocked layers should be vented.*

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2016-02-I-MS-R2 to: “**Closed – Acceptable Action.**”