



U. S. Chemical Safety and Hazard Investigation Board RECOMMENDATION STATUS CHANGE SUMMARY

Report:	LyondellBasell La Porte Fatal Chemical Release
Recommendation Number:	2021-05-I-TX-R6
Date Issued:	May 17, 2023
Recipient:	Valve Manufacturers Association of America Technical Committee (VMA)
New Status:	Open – Awaiting Response or Evaluation/Approval of Response
Date of Status Change:	Not Applicable – Initial Status

Recommendation Text:

Work with ASME and API and develop a white paper to the Valve Manufacturers Association of America addressing the issue of plug valve design with a focus on the following:

a. Recommend as an industry good practice that facilities using plug valves establish written procedures detailing the correct way to remove the plug valve actuator or gearbox for each specific plug valve design.

b. For existing plug valves, recommend as an industry good practice for facilities to clearly mark all pressure-retaining components (for example, with paint, accompanying warning signs, etc.). Work with ASME and API to ensure a consistent methodology is specified to the industry.

c. Recommend new plug valves be designed, consistent with Prevention through Design principles, to prevent the inadvertent removal of pressure-retaining components when removing the actuator or gearbox. Evaluate past plug valve incidents, and the associated plug valve designs involved in those incidents, when formulating a new plug valve design recommendation. Work with ASME and API to ensure a consistent design is recommended to the industry.

Board Status Change Decision:

A. Rationale for Recommendation

On July 27, 2021, three contract workers at the LyondellBasell La Porte Complex in La Porte, Texas were removing an actuator from a plug valve in the site's acetic acid unit. While attempting to remove the actuator, the pressure retaining components of the valve were inadvertently removed causing the eventual ejection of the plug from the valve body and a release of acetic acid.

Approximately 164,000 pounds of acetic acid mixture was released from the unit. All three contract workers were sprayed with the acetic acid mixture fatally injuring two of the workers and seriously injuring the third. An additional twenty-nine personnel were transported to offsite medical facilities for evaluation and treatment.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including a lack of procedures, hazard awareness, training, as well as the potential for improvement related to plug valve design. As a result of these findings, the CSB issued one recommendation to the Valve Manufacturers Association of America Technical Committee (VMA). This status change summary addresses **CSB Recommendation No. 2021-05-I-TX-R6**.