



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

Report:	Motiva Enterprises Sulfuric Acid Tank Explosion
Recommendation Number:	2001-05-I-DE-R1
Date Issued:	August 28, 2002
Recipient:	Occupational Safety and Health Administration
New Status:	Closed – Reconsidered/Superseded <i>(Superseded by 2019-01-I-TX-R7)</i>
Date of Status Change:	June 26, 2023

Recommendation Text:

Ensure coverage under the Process Safety Management Standard (29 CFR 1910.119) of atmospheric storage tanks that could be involved in a potential catastrophic release as a result of being interconnected to a covered process with 10,000 pounds of a flammable substance.

Board Status Change Decision:

A. Rationale for Recommendation

On July 17, 2001, an explosion occurred at the Motiva Enterprises refinery in Delaware City, Delaware. A work crew had been repairing a catwalk above a sulfuric acid storage tank farm when a spark from their hot work tool ignited flammable vapors that were released from a corroded tank. One worker was killed, and eight others were injured. The tank released 264,000 gallons of spent sulfuric acid (e.g., H₂SO₄) which quickly overcame its secondary containment. Environmental damage was significant; approximately 99,000 gallons of acid reached the Delaware River, killing fish and other aquatic life.

After evaluating the storage tank's design elements and components, the U.S. Chemical Safety and Hazard Investigation Board (CSB) investigation determined that if an adequate inerting system had been installed with proper tank integrity, it is likely that there would have been no combustible fuel/air mixture inside the tank. As a part of its investigation the CSB also examined regulatory and industry consensus standards that applied to the inerting of flammable liquids inside storage tanks. These included Occupational Safety and Health Administration (OSHA) regulations and industry consensus standards published by the National Fire Protection Association (NFPA) and the American Petroleum Institute (API).

As a result of the investigation, the CSB issued two new recommendations to the Occupational Safety and Health Administration (OSHA). This status change summary addresses **CSB Recommendation No. 2001-05-I-DE-R1**.

B. Response to the Recommendation

OSHA acknowledged receipt of the recommendation in a letter dated April 22, 2003. In their letter they stated that they do not intend to include atmospheric storage tanks in coverage under

the Process Safety Management Standard (29 CFR 1910.119) (PSM). OSHA states further that Motiva's spent sulfuric acid tank was not a storage tank, but rather a process tank, and so was not exempted from coverage under PSM. OSHA reportedly considered citing Motiva with PSM violations related to this incident, but they ultimately chose not to because of legal considerations that were not described. OSHA committed to developing and implementing a compliance directive to instruct compliance staff with respect to process tanks resulting in a more consistent application of PSM.

In a letter dated June 23, 2004, OSHA reiterated their response to the CSB. It was estimated at this time that the directive proposed by OSHA would be complete within the next six to nine months. As of October 10, 2012, no directive or other substantive response was forthcoming and a status of "Open – Unacceptable Response" was assigned by Board vote.

In a letter dated August 19, 2014, OSHA described a request for information (RFI) issued pursuant to Executive Order 13650 Improving Chemical Facility Safety and Security (EO 13650). The RFI was designed to obtain input on modernizing various parts of the PSM standard and other standards necessary to meet the goal of EO 13650 preventing major chemical accidents. In their RFI OSHA requested input on "Clarifying the PSM exemption for atmospheric storage tanks."

The recommendation was reiterated in the CSB's [Packaging Corporation of America Hot Work Explosion Investigation Report \(2018\)](#).

Shortly after the recommendation was reiterated, OSHA notified the CSB that following the RFI, in August 2016, they completed a Small Business Regulatory Flexibility Review Act (SBREFA) panel to gather feedback from small businesses on updating the PSM standard. OSHA stated further that PSM rulemaking remains on OSHA's Unified Agenda of Federal Regulatory and Deregulatory Actions with the Office of Management and Budget's Office of Information and Regulatory affairs under "long term actions" and that they will continue to consider the matter.

No further response to this recommendation has been received from OSHA. However, PSM rulemaking has been upgraded to the pre-rule stage of the rulemaking process on OSHA's Spring 2023 Regulatory Agenda.

This recommendation was superseded by **CSB Recommendation No. 2019-01-I-TX-R7** from the CSB's [Intercontinental Terminals Company \(ITC\) Tank Fire Investigation Report \(2023\)](#).

C. Board Analysis and Decision

CSB policy allows a recommendation to be superseded when it is replaced by a new more appropriate recommendation to the same recipient and covering the same or similar issues. **CSB Recommendation No. 2001-05-I-DE-R1** directed OSHA to ensure PSM coverage of atmospheric storage tanks interconnected to a process with 10,000 pounds of a flammable substance that could be involved in a catastrophic release. While this would have been desirable it would not have ensured the hazards of atmospheric storage tanks and their contents were addressed. **CSB Recommendation No. 2019-01-I-TX-R7** is a more appropriate recommendation in that it addresses the hazards of atmospheric storage tanks and their contents.

The Board appreciates OSHA's efforts regarding the original recommendation and looks forward to their continued cooperation in implementing the superseding recommendation. Based upon the information above, the Board voted to change **CSB Recommendation No. 2001-05-I-DE-R1** to: "**Closed –Reconsidered/Superseded.**"