



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

Report:	Bethune Point Wastewater Plant Explosion
Recommendation Number:	2006-03-I-FL-R6
Date Issued:	March 13, 2007
Recipient:	Occupational Safety and Health Administration (OSHA)
New Status:	Closed – Reconsidered/Superseded
Date of Status Change:	September 7, 2019

Recommendation Text:

Revise OSHA 29 CFR 1910.106 to specifically exclude the use of thermoplastics in aboveground flammable liquid service.

Board Status Change Decision:

A. Rationale for Recommendation

On January 11, 2006, an explosion and fire occurred at the Bethune Point Wastewater Treatment Plant in the City of Daytona Beach, Florida. Two employees were killed and a third was severely burned while they were using a cutting torch to remove a roof above the methanol storage tank, accidentally igniting vapors coming from the tank vent. The flame flashed back into the storage tank, causing an explosion inside the tank that precipitated multiple methanol piping failures and a large fire that engulfed the tank and the workers. Methanol was released from the failed piping, ignited and burned, spreading the fire.

As a part of its investigation, the U.S. Chemical Safety and Hazard Investigation Board (CSB) examined how the State of Florida addresses occupational safety and health requirements as well as regulations promulgated by the Occupational Safety and Health Administration (OSHA) for the safe handling of flammable liquids, such as methanol. The OSHA regulations for *Flammable Liquids* (29 CFR 1910.106) has an exception that allows materials other than steel, nodular iron, or malleable iron for aboveground flammable liquid piping. In this case, the CSB investigation noted that the methanol system designer specified polyvinyl chloride (PVC) piping, valves and fittings for all aboveground and underground piping in the methanol system. Consequently, the CSB issued a recommendation to OSHA to revise 29 CFR 1910.106 to exclude the use of thermoplastics in aboveground flammable liquid service.

B. Response to the Recommendation

In its 2007 response to CSB, OSHA stated that OSHA Standard 29 CFR 1910.106(c)(2) requires the use of steel, nodular iron, or malleable iron for aboveground piping. They state the exception that could have allowed the use of PVC would only be applicable if PVC is “required by the properties of the flammable or combustible liquid [methanol] being handled.” Additionally, they concurred with the CSB assessment that “no necessity to use PVC pipe existed.” The further

stated that, “with respect to the Bethune Point incident, the use of plastic was not "required by the properties of the flammable or combustible liquid being handled," and the employer violated the standard. We therefore do not agree that a revised standard would have changed the outcome of the incident.”

C. Board Analysis and Decision

The Board concurred with OSHA’s assessment that the OSHA Standard 29 CFR 1910.106 was violated as methanol did not require the use of PVC and that steel (same material as the tank) was an acceptable material and, therefore, should have been used. Additionally, the Board found that the factual information and analysis in the report was not sufficient enough to support the elimination of PVC (thermoplastics). Lastly, the recommendation did not address the ambiguity of the OSHA Standard language that was raised in the investigation report.

Based upon the fact that this recommendation is more than 12 years old, OSHA has rejected the recommendation with a valid reason with which the Board concurs, and the additional information above, the Board voted to change the status of **CSB Recommendation No. 2010-6-I-WV-R1** to: “**Closed – Reconsidered/Superseded.**”