



U. S. Chemical Safety and Hazard Investigation Board

RECOMMENDATIONS STATUS CHANGE

SUMMARY

Report:	Bethune Point Wastewater Plant Explosion
Recommendation Number:	2006-03-I-FL-R5
Date Issued:	March 13, 2007
Recipient:	National Fire Protection Association (NFPA)
New Status:	R5: Closed – Acceptable Alternative Action
Date of Status Change:	June 1, 2015

Recommendation Text:

Revise NFPA 30 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 City of Daytona Beach, Bethune Point Wastewater Treatment Plant in Florida. Two employees were killed and a third was severely burned while they were using a cutting torch on 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 workers. Methanol discharged from the separated pipes that failed, ignited and burned, spreading the fire.

The CSB investigation noted that methanol system designer specified polyvinyl chloride (PVC) piping, valves and fittings for all above- and below ground piping in the methanol system. The methanol tank specification, developed by the methanol tank designer, required that the tank comply with National Fire Protection Association (NFPA) 30, *Flammable & Combustible Liquids Code* (1990).

The National Fire Protection Association (NFPA) is an international, nonprofit organization that develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other similar risks. NFPA 30 applies to the storage, handling, and use of flammable and combustible liquids. While Section 3-3.3 of NFPA 30-1990 required that all valves connected to storage tanks be constructed of steel; Section 3-3.4 permitted plastic piping materials in aboveground flammable liquid systems under certain conditions. Consequently, the CSB issued a recommendation to NFPA to revise NFPA 30 to exclude the use of thermoplastics in aboveground flammable liquid service.

B. Response to the Recommendation

The 2015 edition of NFPA 30, published by the NFPA in December of 2014 incorporated into the Code changes to Subsection 27.4.4 which strengthen the provisions regarding the use of low melting point piping materials. While these changes do not specifically exclude the use of thermoplastics in aboveground flammable liquid service, the additions made to 2015 NFPA 30 do substantially restrict the use of low melting point materials, including thermoplastics, for piping used in aboveground flammable liquid service.

C. Board Analysis and Decision

As the changes made to the 2015 edition of NFPA 30 do substantially restrict the use of low melting point materials, including thermoplastics, in piping used in aboveground ground flammable liquid service, the Board voted to change the status of CSB Recommendation No. 2006-03-I-FL-R5 to: “**Closed – Acceptable Alternative Action.**”