



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

Report:	CAI/Arnel Chemical Plant Explosion
Recommendation Number:	2007-03-I-MA-R3
Date Issued:	June 20, 2008
Recipient:	Commonwealth of Massachusetts Office of Public Safety, Department of Fire Services
New Status:	Closed – Acceptable Action
Date of Status Change:	March 31, 2015

Recommendation Text:

Incorporate the Flammable and Combustible Liquids Code (NFPA 30) and Standard for the Manufacture of Organic Coatings (NFPA 35) into the Massachusetts Board of Fire Prevention Regulations.

Board Status Change Decision:

A. Rationale for Recommendation

On November 22, 2006, a powerful explosion and fire occurred at the CAI/Arnel ink and paint products manufacturing facility in Danvers, Massachusetts. CAI Inc. (CAI) manufactured solvent-based inks and stored alcohols, heptane, other solvents, pigments, resin, and nitrocellulose in its Danvers facility. The CSB investigation concluded that an unattended mixing tank overheated in an unventilated building, causing the release of flammable vapors which subsequently ignited, triggering an explosion. The resulting fire, fueled by other flammables stored inside, destroyed the facility and heavily damaged numerous homes and businesses nearby, some beyond repair. Minor injuries were reported from the community.

The report found that the fire safety code of the Code of Massachusetts Regulations (527 CMR) provided rules for storing and handling flammable liquids and solids, such as those stored at the CAI/Arnel facility. It contained the threshold quantity for each material and required a separate license for each material type that exceeds the threshold quantity. The investigation found, though, that CAI/Arnel was not licensed for every material type that it was storing because it had not obtained a separate license for flammable liquid storage.

The report also found that Massachusetts fire code does not require companies that handle flammable and combustible liquids to apply the *Flammable and Combustible Liquids Code* (NFPA 30), or require organic coatings manufacturers that use flammable and combustible liquids to apply *The Standard for the Manufacture of Organic Coatings* (NFPA 35).

B. Response to the Recommendation

The Massachusetts Board of Fire Prevention Regulations voted to promulgate a revised fire safety code that adopts, in large part, NFPA 1 (2012 edition) on August 7, 2014.¹ The new code

¹ See <http://www.mass.gov/eopss/agencies/dfs/dfs2/osfm/fire-prev/comprehensive-model-fire-code.html> (Accessed December 23, 2014).

incorporates NFPA 30 and NFPA 35, as documented in the Commonwealth of Massachusetts 527 CMR 1.00 Massachusetts Amendments document.² Therefore, its adoption by Massachusetts satisfies the intent of the recommendation. The new code officially took effect on January 1, 2015.

C. Board Analysis and Decision

The CSB concluded that the recipient's response to this meet the intent of the recommendation, and the Board has voted to designate CSB Recommendation No. 2007-03-I-MA-R3 as: "**Closed – Acceptable Action.**"

² Available at <http://www.mass.gov/eopss/docs/dfs/osfm/boards/specific-meetings/publichearingdraftofmassamendmentstorevisedfiresafetycode-2-.pdf> (Accessed December 23, 2014).