



U. S. Chemical Safety and Hazard Investigation Board

RECOMMENDATIONS STATUS CHANGE

SUMMARY

Report:	US Ink Fire
Recommendation Number(s):	2013-1-I-NJ-R4
Date Issued:	January 15, 2015
Recipient:	New Jersey Department of Community Affairs
New Status:	Closed – Acceptable Action
Date of Status Change:	August 11, 2016

Recommendation Text:

CSB Recommendation No. 2013-1-I-NJ-R4

Develop and implement training for local code officials on the National Fire Protection Association (NFPA) standards referenced in the New Jersey adoption of the International Building Code (IBC) for occupancies with a high hazard classification (Group H); specifically, include training on equipment that handles combustible dust and the hazards involved.

Board Status Change Decision:

A. Rationale for Recommendation

On October 9, 2012, a flash fire caused burn injuries to seven workers, including three who sustained third-degree burns, at the US Ink/Sun Chemical Corporation (Sun Chemical) ink manufacturing facility in East Rutherford, New Jersey. The U.S. Chemical Safety Board's (CSB) investigation into this incident found that, during the start up of US Ink's new dust collection system, a flammable mixture consisting of hydrocarbons and combustible dusts accumulated in the ductwork and ignited, causing a flash fire.

The CSB investigation determined that improper design and operation of the dust collection system was one of the root causes that led to the incident. Minimum design criteria identified in nationally recognized consensus standards developed by the National Fire Protection Association (NFPA) and the American Conference of Governmental Industrial Hygienists (ACGIH) had not been followed when designing the new dust collection system. The New Jersey Uniform Construction Code (UCC) adopts the International Building Code (IBC), which does reference fire protection and engineering standards for facilities that handle combustible dusts. However, the investigation found that the New Jersey Department of Community Affairs (NJ DCA) conducts training for local building code officials on some of the NFPA standards in the New Jersey UCC but does not provide training on relevant NFPA standards that address combustible dust hazards. As a result, the CSB made recommendations to the NJ DCA to develop and implement training on combustible dust for code officials.

B. Response to the Recommendation

NJ DCA issued a request for proposals (RFP) in August 2015 for training that was offered in the Spring and will be offered in the Fall of 2016. The combustible dust training is offered as part of the training program for code officials, which requires that code officials earn 1.5 Continuing Education Units during a licensing cycle (3 years).

NJ DCA contracted with a professional engineer to provide a seminar entitled "Management of Dust Collector Explosion Hazards" on April 6, May 5, June 21, and June 23 of 2016. This professional

engineer is an expert on combustible dust and fire hazards, and sits on the technical committees for several dust consensus standards including NFPA 654, 655, 664 and 72. The program will also be offered in the Fall of 2016. The **“Management of Dust Collector Explosion Hazards”** training was very thorough, and the content exceeded what was recommended by the CSB. A total of 59 inspectors have attended the Spring training, with more expected to attend during the Fall sessions

The objectives of the training were to: understand why dust collectors pose a hazard; know the enforcement path for occupant protection from dust collectors; be aware of the protection features available; and have a protection features checklist for use in the facility. The training also noted that the US Ink dust explosion was the impetus for the training and reviews the investigation findings. The training covered the following topics: basics of explosion; necessary conditions for dust explosion and deflagration to occur; controlling dust; types of dust collecting units; how dust collection systems work; dust collector operations; NJ International Building Code (IBC) requirements; NFPA standards, which includes discussion of the five occupancy standards focused on dust explosion hazard (NFPA 654, 61, 664, 484, 655, 652) and the two additional that NJ requires (NPFA 120, 85); prevention of ignition; spark detection and extinguishing systems; managing dust collector fires; fire suppression; relief venting; and isolation systems.

C. Board Analysis and Decision

Based on the above actions, the Board voted to change the status of CSB Recommendation No. **2013-1-I-NJ-R4** to **“Closed – Acceptable Action.”**