



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

<b>Report:</b>	Hoeganaes Corporation Fatal Flash Fires
<b>Recommendation Number:</b>	2011-4-I-TN-R11
<b>Date Issued:</b>	January 5, 2012
<b>Recipient:</b>	City of Gallatin, TN
<b>New Status:</b>	Closed – Unacceptable Action
<b>Date of Status Change:</b>	October 4, 2016

### Recommendation Text:

*Require all facilities covered by IFC Chapter 13 (2006 edition) to conform to NFPA standards for combustible dusts including NFPA 484.*

### Board Status Change Decision:

#### A. Rationale for Recommendation

Between January and May 2011, the CSB investigated three iron dust-related incidents at the Gallatin, Tennessee facility of the Hoeganaes Corporation, a worldwide producer of atomized iron and steel powders. The first iron dust flash fire incident killed two workers and the second injured one. The third incident, a hydrogen explosion and resulting iron dust flash fires, claimed three lives and injured two other workers.

The CSB found that the City of Gallatin had adopted the 2006 version of the International Fire Code, which includes general requirements for addressing combustible dust hazards and also incorporates by reference several detailed National Fire Protection Association (NFPA) standards, including NFPA 484: *Standard for Combustible Metals*. The Gallatin Fire Department, which is responsible for enforcement of the IFC, conducted just three inspections of the facility in the previous 12 years, including one just two weeks prior to the third accident investigated by the CSB in May 2011. That report documented observations at the facility related to fire suppression and emergency egress, but did not mention combustible dust hazards despite the fact that accidents had occurred in January and March. The CSB issued three recommendations to the City of Gallatin and the Gallatin Fire Department to promote regular, comprehensive inspections of industrial facilities with combustible dust hazards. This status change summary concerns Recommendation No. 2011-4-I-TN-R11.

#### B. Response to the Recommendation

The City of Gallatin adopted the International Fire Code, 2009 edition, which incorporates the following NFPA combustible dust standards by reference:

- NFPA 484: Standard for Combustible Metals
- NFPA 654: Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids

The CSB reviewed several industrial fire inspections provided by the City of Gallatin, some of which included combustible dust violations. Overall, the inspections reports were poorly documented and

included very little information about the objectivity and completeness of the inspections. The inspections did not provide further information with regards to quantity, remediation and surface area of the dust hazards encountered. The summary information for the inspection should state the objective of inspection and what criteria from a checklist is being observed. There should be zero tolerance for any dust. The Gallatin Fire Department inspects the Hoeganaes facility twice per year and inspections are planned. The CSB communicated these concerns to the City of Gallatin, but no changes have been made to ameliorate the quality of inspections. As a result, CSB is not confident that the IFC 2009 is being adequately enforced.

### C. Board Analysis and Decision

Due to the poor documentation of Gallatin Fire Department's industrial fire inspections, CSB is concerned that Gallatin Fire Department's inspections do not enforce IFC 2009 or adequately prevent combustible dust explosions and therefore the Board voted to designate **Recommendation No. 2011-4-I-TN-R11** be designated with the status "**Closed - Unacceptable Action/No Response Received.**"

The CSB again strongly encourages the City of Gallatin to: conduct comprehensive and fully documented inspections to ensure that all facilities in Gallatin are in compliance with IFC 2009, including the NFPA combustible dust standards incorporated by reference; evaluate the process for conducting inspections to ensure that they are comprehensive, objective assessments rather than paper exercises; and ensure that inspectors receive effective refresher training on combustible dust hazards.