



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

<b>Report:</b>	AL Solutions Fatal Dust Explosion
<b>Recommendation Number(s):</b>	2011-3-I-WV-R1 through R4
<b>Date Issued:</b>	July 16, 2014
<b>Recipient:</b>	AL Solutions, Inc.
<b>New Status:</b>	Open – Acceptable Response or Alternate Response
<b>Date of Status Change:</b>	August 12 <sup>th</sup> , 2015

### Recommendation Text(s):

#### AL Solutions, Inc.

##### **2011-3-I-WV-R1**

*For all new and existing equipment and operations at AL Solutions facilities that process combustible metal dusts or powders, apply the following chapters of NFPA 484-2012, Standard for Combustible Metals:*

- Chapter 12, Titanium
- Chapter 13, Zirconium
- Chapter 15, Fire Prevention, Fire Protection, and Emergency Response
- Chapter 16, Combustible Metal Recycling Facilities

##### **2011-3-I-WV-R2**

*Develop training materials that address combustible dust hazards and plant-specific metal dust hazards and then train all employees and contractors. Require periodic (e.g., annual) refresher training for all employees and contractors.*

#### AL Solutions, Inc. Burgettstown, PA facility

##### **2011-3-I-WV-R3**

*Prohibit the use of sprinkler systems and water deluge systems in all buildings that process or store combustible metals.*

##### **2011-3-I-WV-R4**

*Conduct a process hazard analysis as defined in NFPA 484-2012, Section 12.2.5, and submit a copy to the local fire department or the enforcing authority for the fire code.*

### Board Status Change Decision:

#### A. Rationale for Recommendation

On December 9, 2010, a metal dust explosion and fire occurred at the AL Solutions, Inc. facility in New Cumberland, West Virginia, which resulted in three employee fatalities and one contractor injury, and ultimately caused the shutdown of the plant. Pursuant to its investigation, the CSB found that AL Solutions did not follow the requirements of the prevailing national consensus standard, the National Fire Protection Association's NFPA 484: *Standard for Combustible Metals*, in order to control combustible metal dust hazards. The CSB also found that AL Solutions failed to sufficiently train employees in combustible metal dust hazards. Following the 2010 incident, AL Solutions constructed a new manufacturing facility in Burgettstown, Pennsylvania. CSB issued two recommendations to AL

Solutions, Inc., as well as two recommendations specifically to the Burgettstown, Pennsylvania facility, in order to prevent a similar incident at the new facility.

B. Response to the Recommendation

With regards to **2011-3-I-WV-R1**, AL Solutions, Inc. has stated that all AL Solutions facilities are now built to NFPA 484 -2012 requirements, with particular attention paid to chapters 12, 13, 14, 15 and 16.

With regards to **2011-3-I-WV-R2**, AL Solutions, Inc. has stated that, along with a third party safety consultant, it has developed training materials relating to plant specific metals, and that an annual refresher training is provided.

With regards to **2011-3-I-WV-R3**, AL Solutions, Inc. has stated that it prohibits the use of water deluge systems in all buildings that process or store combustible metals.

With regards to **2011-3-I-WV-R4**, AL Solutions, Inc. stated that several process hazards analyses (PHA) were performed in the design of the facilities operated by AL Solutions and the PHAs were shared with the local fire departments.

The Board considers the above actions to be acceptable in meeting the intent of the CSB recommendations. Closure will be contingent upon CSB receipt of documentation that the above actions were taken.

C. Board Analysis and Decision

As a result of AL Solutions actions to implement the CSB's recommendations, the Board voted to designate recommendations 2011-3-I-WV-R1 through R4 as "Open-Acceptable Response or Alternate Response."