



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

<b>Report:</b>	Bayer CropScience Pesticide Waste Tank Explosion
<b>Recommendation Number:</b>	2008-08-I-WV-R5
<b>Date Issued:</b>	January 20, 2011
<b>Recipient:</b>	Bayer CropScience (BCS), Institute Plant
<b>New Status:</b>	R5—Closed Acceptable Action
<b>Date of Status Change:</b>	April 10, 2013

### Recommendation Text:

*Commission an independent human factors and ergonomics study of all Institute site PSM/RMP covered process control rooms to evaluate the human-control system interface, operator fatigue, and control system familiarity and training. Develop and implement a plan to resolve all recommendations identified in the study that includes assigned responsibilities, required corrective actions, and completion dates.*

### Board Status Change Decision:

#### A. Rationale for Recommendation

On August 28, 2008, an explosion occurred at the Bayer CropScience (BCS) facility in Institute, West Virginia. A runaway chemical reaction inside a residue treater containing the pesticide methomyl, caused the pressure vessel to overpressurize and catastrophically rupture during an attempted restart of a pesticide manufacturing unit. Highly flammable solvent sprayed from the ruptured vessel and immediately ignited, resulting in an intense fire.

The CSB determined the unit's standard operating procedures were not reviewed and approved prior to startup; safety interlocks were bypassed during startup; operations personnel were not adequately trained; and the control board was not properly configured to operate the recently upgraded distributed control system. To address the issues associated with distributed control systems at the plant site, the CSB issued the recommendation to the BCS Institute facility.

#### B. Response to the Recommendation

BCS retained an independent third party to review all Process Safety Management/Risk Management Plan covered process control rooms at the Institute site. The scope and breadth of the review addressed the human-control system interface, operator fatigue, control system familiarity and training. The review resulted in a report containing recommendations for improvements. The BCS Institute plant reported successfully resolving all the improvement recommendations contained in the third party review.

#### C. Board Analysis and Decision

As the third party review met the intent of the recommendation and BCS successfully resolved all the improvement recommendations contained in the review, the status of this recommendation was changed to: "**Closed—Acceptable Action.**"