



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

Report:	DuPont Corporation Toxic Chemical Releases
Recommendation Number:	2010-6-I-WV-R12
Date Issued:	October 17, 2011
Recipient:	E. I. du Pont de Nemours and Company (DuPont)
New Status:	R12: Closed – Acceptable Action
Date of Status Change:	April 10, 2013

Recommendation Text:

Commission an audit in consultation with operations personnel to establish and identify the conditions that cause nuisance alarms at all DuPont facilities. Establish and implement a corporate alarm management program as part of the DuPont PSM Program, including measures to prevent nuisance alarms and other malfunctions in those systems. Include initial and refresher training as an integral part of this effort.

Board Status Change Decision:

A. Rationale for Recommendation

On January 22 and 23, 2010, three accidents occurred over a 33-hour period at the DuPont Corporation's Belle, West Virginia, chemical manufacturing plant. The series of accidents began when an alarm sounded, leading operators to discover that 2,000 pounds of methyl chloride, a toxic and extremely flammable gas, had been leaking unnoticed into the atmosphere for five days. The CSB found process safety management shortcomings related to alarm management and maintenance, in that safety alarms/interlocks were not in proper working order prior to the startup of the F3455 process, which contributed to the previously unnoticed methyl chloride release.

As part of its investigation, the CSB also reviewed E. I. du Pont de Nemours and Company (DuPont) corporate policies pertaining to process safety management with respect to alarm management and found a lack of appropriate guidance for addressing nuisance alarms. A recommendation was issued to the corporation to audit DuPont sites to evaluate the causes of nuisance alarms and to establish and implement a corporate alarm management program as part of the DuPont PSM program.

B. Response to the Recommendation

In late 2011, DuPont revised its corporate Process Safety Management program to include new alarm management content and alarm management and nuisance alarm training requirements.

By mid-year 2012, DuPont had completed a technical evaluation (e.g., audit) on nuisance alarms at 56 DuPont sites across the U.S. that operate with higher hazard chemicals. The report thoroughly analyzed the various conditions that led to nuisance alarms at DuPont sites and grouped their causes into five primary categories. The report also provided various diagnostic metrics and alarm system benchmarks to aid DuPont sites in reducing nuisance alarms. The report outlined six steps to be implemented in the new alarm management program. All six steps were reported to have been completed at 52 DuPont higher hazard manufacturing sites by the end of 2012.

Regarding training, alarm management and process control personnel, a total of 290 participants at the 56 sites, completed two-days of classroom training on alarm management technical elements. All operators and line management personnel at U.S. manufacturing locations under DuPont control (10,151 individuals) reportedly completed an alarm management computer based training package which included a challenge to verify understanding of the content. Refresher training on alarm management will be provided by DuPont every three years

C. Board Analysis and Decision

As DuPont has implemented an alarm management program that appears to meet the intent of all the elements contained in CSB Recommendation No. 2010-6-I-WV-R12, the status was changed to: “**Closed—Acceptable Action.**”