



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

Report:	West Fertilizer Fire and Explosion
Recommendation Number:	2013-02-I-TX-R19
Date Issued:	January 28, 2016
Recipient:	El Dorado Chemical Company
New Status:	Closed – Acceptable Alternative Action
Date of Status Change:	October 26, 2021

Recommendation Text:

For all distributors and bulk retail sites (i.e., customers) that receive fertilizer grade ammonium nitrate (FGAN) manufactured by El Dorado Chemical Company (EDC) for storage, shipment, and sale:

- a. Encourage customers to conduct internal monitoring and auditing (in accordance with recent industry standards and guidelines) in locations where FGAN will be stored or used. Communicate that such internal monitoring and auditing may be conducted through established product safety programs, including ResponsibleAg.*
- b. Develop a process to establish mutual product stewardship expectations for the downstream chain of customers. Communicate expectations to existing customers, and to new customers before their first shipment of FGAN. Include the following components:*
 - i. For all FGAN sold to distributors, encourage distributors to provide Safety Data Sheets and FGAN safety guidance to their customers and build retail sites to which FGAN is sold or shipped.*
 - ii. For all EDC bulk retailers and non-EDC bulk retailers that store and sell FGAN, encourage bulk retailers to address, such as through certification checklists, the following:*
 - Written procedures for the safe handling of FGAN, including employee training*
 - Emergency response plans to be sent to Local Emergency Planning Committees and local fire departments*
 - Tier II Chemical Inventory Report submissions.*

Board Status Change Decision:

A. Rationale for Recommendation

On April 17, 2013, an explosion and fire occurred at the West Fertilizer Company (WFC), a fertilizer blending, retail, and distribution facility in West, Texas. The detonation of fertilizer grade ammonium nitrate (FGAN) fatally injured 12 emergency responders and three members of the public. Local hospitals treated more than 260 injured victims, many of whom required hospital admission. The blast completely destroyed the WFC facility and caused widespread damage to more than 150 offsite buildings.

Although the U.S. Chemical Safety and Hazard Investigation Board (CSB) was unable to determine the exact cause of the fire, the radiant heat from the fire, fueled by the structure of the facility, flammable building contents, and the asphalt roof shingles, likely heated the surface of the FGAN pile. The CSB concluded that the presence of combustible materials used for construction of the facility and FGAN storage bins, in addition to the WFC practice of storing combustibles near the FGAN pile, contributed to the progression and intensity of the fire and likely resulted in the detonation.

Fertilizer manufacturers can promote the safe storage and handling of FGAN by distributors and retailers by implementing product stewardship programs. As a part of its investigation, the CSB reviewed the product stewardship program of El Dorado Chemical Company (EDC), the fertilizer manufacturer that supplied WFC. The CSB acknowledged that following the WFC explosion, EDC initiated several safety efforts related to the storage and handling of its FGAN product; however, the CSB identified several additional areas that EDC should implement to promote safe storage of FGAN among its distributors and retailers. As a result, the CSB issued a recommendation to EDC.

B. Response to the Recommendation.

EDC communicated with its customers and conducted ResponsibleAg third party audits at all 11 of its retail and wholesale fertilizer outlets. Instead of asking them to conduct audits, etc., EDC encouraged customers to join ResponsibleAg so that their audits would also be applicable to them. Specifically, EDC directly contacted all of its new and existing customers and provided the following documents: revised Material Data Safety Sheets; Agricultural Retailers Association/The Fertilizer Safety Institute (ARA/TFI) Safety and Security Guidelines; new Safety Data Sheet (SDSs) with Product Information Bulletin; Occupational Safety and Health Administration (OSHA) Guidance on the Ammonium Nitrate Storage Requirements in 29 CFR 1910.109(i) including cover letter and handout encouraging customers to join ResponsibleAg; and ARA/TFI Survey on Process Safety Management Compliance to customers who purchase anhydrous ammonia.

EDC also repaired and/or replaced all wooden bins used to store ammonium nitrate and treated them with sodium silicate per OSHA guidelines 1910.109(i) to prevent impregnation, and as well as installed roof vents and lightning arrestors in all ammonium nitrate warehouses per OSHA guidance. Additionally, EDC informed the CSB in their July 20, 2016, letter that they were working with Federal and state regulators to develop reasonable changes to the regulations regarding the product stewardship for the FGAN industry.

C. Board Analysis and Decision

EDC took several significant positive steps in implementing a majority of the recommendation. Where the specifics of the recommendation were not addressed, the general intent of the recommendation was addressed, as described above. As a result, the Board voted to change the status of CSB Recommendation No. 2013-02-I-TX-R19 as “Closed – Acceptable Alternative Action.”