



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

<b>Report:</b>	West Fertilizer Fire and Explosion
<b>Recommendation Numbers:</b>	2013-2-I-TX-R7
<b>Date Issued:</b>	January 28, 2016
<b>Recipient:</b>	Texas Department of Insurance (TDI)
<b>New Status:</b>	Open – Unacceptable Response/No Response Received
<b>Date of Status Change:</b>	March 1, 2017

## Recommendation Text:

### CSB Recommendation No. 2013-02-I-TX-R17:

*For companies that provide insurance to agricultural facilities storing bulk fertilizer grade ammonium nitrate (FGAN) in Texas, including surplus lines insurers and Texas-registered risk retention groups, develop and issue guidance to assist in underwriting risk and conducting annual loss control surveys. Guidance should include the following:*

- a. Combustible materials of construction for facilities and bins storing FGAN*
- b. Storage of combustible materials near FGAN piles*
- c. Adequate ventilation for indoor FGAN storage areas*
- d. Automatic sprinklers and smoke detection systems for indoor FGAN storage areas*
- e. Separation distances between FGAN and other hazardous materials onsite*
- f. Potential for offsite consequences from a fire or explosion, including the proximity of FGAN facilities to nearby residences, schools, hospitals, and other community structures.*

*Provide references in the guidance document to existing materials from the following sources or to other equivalent guidance:*

- a. National Fire Protection Association (NFPA), NFPA 400, Hazardous Materials Code, 2016 Edition, Chapter 11, “Ammonium Nitrate”*
- b. FM Global, “Property Loss Prevention Data Sheet 7-89”*
- c. U.S. Environmental Protection Agency, Occupational Safety and Health Administration, and Bureau of Alcohol, Tobacco, Firearms and Explosives; “Chemical Advisory: Safe Storage, Handling, and Management of Solid Ammonium Nitrate Prills”*
- d. TDI, “Best Practices for the Storage of Ammonium Nitrate”*
- e. National Fire Protection Research Foundation, “Separation Distances and NFPA Codes and Standards.”*

## 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 violent 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.

The explosion happened approximately 20 minutes after the first signs of a fire were reported to the local 911 emergency response dispatch center. Although the 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. Contamination from soot, molten asphalt, and molten polyvinyl chloride (PVC) from an overhead conveyer produced a detonable mixture of combustibles and FGAN oxidizers, while increased ventilation heated the FGAN-fuel mixture on the surface of the 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.

As part of its investigation, the CSB found that WFC was dropped by their previous insurance provider due to a lack of compliance with recommendations from its loss control surveys. The CSB also found little evidence of onsite activity or inspections by WFC's subsequent insurance provider. The CSB analyzed relevant regulatory, industry and consensus standards for hazard analysis and safe storage and handling of FGAN. The analysis determined that the Texas Department of Insurance (TDI) does not require companies that insure FGAN facilities to conduct loss control surveys or inspections to minimize losses. As a result, the CSB made the following recommendation to TDI:

#### B. Response to the Recommendations

TDI stated that state inspections have found storage facilities of ammonium nitrate are in compliance with Texas House Bill (HB) 942 (2015) which amended the Texas Agricultural Code. TDI also stated that the Texas State Fire Marshal (SFMO) conducted inspections of all agribusiness ammonium nitrate storage facilities in Texas for compliance with HB 942. While inspection of facilities by SFMO is a positive step, the resources provided on the TDI website for ammonium nitrate (<http://www.tdi.texas.gov/fire/> and <http://www.tdi.texas.gov/fire/documents/fmnitratepractice.pdf>) are less than two page documents that do not provide the level of guidance the CSB requested in its recommendation. TDI stated that does not have intentions to issue guidance on FGAN, loss control surveys, or any guidance beyond that which is required by Texas law.

#### C. Board Analysis and Decision

Most CSB recommendations are not required by law and the CSB does not consider this an acceptable response; however, if TDI decides at some point in the future to issue guidance per the CSB's recommendation, then the CSB will evaluate the guidance and may reconsider the status of this recommendation.

Based on TDI's statement that it does not intend to develop guidance on FGAN safety and loss control surveys, the Board voted to designate Recommendation **No. 2013-02-I-TX-R17** with the status of **“Open – Unacceptable Response/No Response Received.”**