Importance of Effective Emergency Management and Response Strategy

TECHNICALLY SUPERIOR
RISK MANAGEMENT

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Overview

- Importance of emergency planning via incident review
- Requirements of an emergency response plan (*the Plan*)
- Identification of major incidents examined by the Plan
- Develop emergency management strategies
- West Texas Facility – The right approach

West Fertilizer Explosion: April 17, 2013

Ref: West Fertilizer Company Fire and Explosion – Investigation Report, Final, Report 2013-02-I-TX, U.S. Chemical Safety and Hazard Investigation Board

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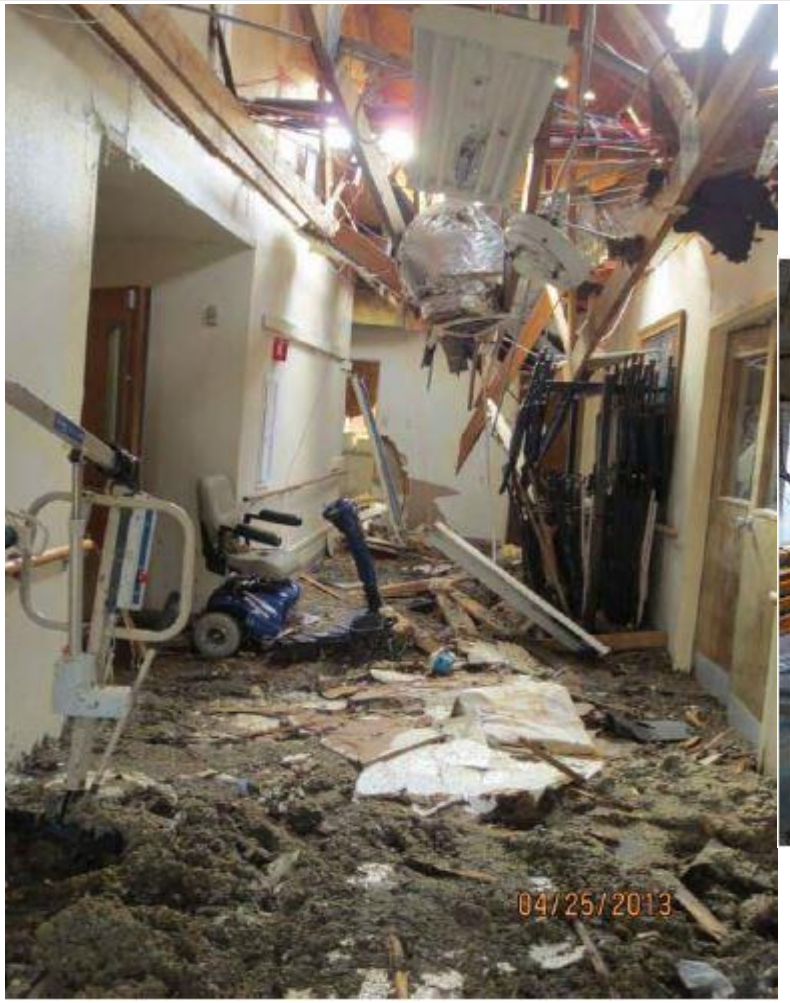

Ref: West Fertilizer Company Fire and Explosion – Investigation Report, Final, Report 2013-02-I-TX, U.S. Chemical Safety and Hazard Investigation Board

West Fertilizer Explosion: April 17, 2013

- Massive explosion at fertilizer storage and distribution facility
- 15 fatalities, including 12 volunteer firefighters
- Emergency planning and response a key issue identified by the CSB
- Required a well-exercised local emergency plan emphasising the need for immediate notification to responders and community at the first sign of fire

Ref: West Fertilizer Company Fire and Explosion – Investigation Report, Final, Report 2013-02-I-TX, U.S. Chemical Safety and Hazard Investigation Board

Hazelwood Mine Fire

- The Hazelwood mine fire began on 9 February 2014
- The fire was caused by embers spotting into the Hazelwood mine from bushfires burning in close proximity to the mine
- The mine fire burned for 45 days.
- The fire sent smoke and ash over the town of Morwell and surrounding areas for much of that time.
- It was the largest and longest burning mine fire that has occurred in the Latrobe Valley to date
- The Inquiry made a number of findings and eighteen recommendations to address those findings

Ref: Hazelwood Mine Fire Inquiry Report, 2014, Hazelwood Mine Fire Inquiry

Emergency Planning

- Emergency planning aims to prepare for and mitigate the impacts of an emergency.
- Preparedness requires identifying those circumstances that constitute an emergency for its specific operation and activities
- Responding requires identifying the systems and resources needed to ensure an appropriate response
- Engaging stakeholders potentially affected by the emergency

Emergency Response Plan – Requirements

- Specific to the facility and the major hazards identified in a risk assessment
- Effective in addressing consequences of major incidents
- Developed in consultation with employees, emergency services, industrial neighbours and local council (community)
- Understood by employees, visitors and other people likely to be affected
- Tested, reviewed and updated at appropriate intervals.

Identification of Potential Incidents

- Identify all hazards that might be expected to contribute to an emergency situation
- Consider the full range of activities at the facility
- Conduct hazard and / assessments to develop a list of potential incidents.

Emergency Response Strategy

- The strategy must outline an operator’s philosophy of response to emergencies
- What are the strategic responses that may be considered?
- Level on involvement of on-site personnel
- Strategy depends on the type of incidents identified at site
- Specify the performance required

Emergency Response Plan - Overview

- Emergency response arrangements necessary to either reduce, or eliminate, the major incident.
- Detail procedures, roles and resources that are required to achieve the response.
- Determine how responses will be coordinated, and allocate responsibilities.
- Identify situations where the routine procedures and resources are not sufficient.

Emergency Response Plan – Key Issues

- Emergency responders not adequately consulted when developing plans
- Sites not implementing their plan
- Drills and exercises in particular regarding deployment and use of fire-fighting equipment
- Not liaising with local community on potential hazards at their site
- Emergency plans not specific to the hazards

Contingency Pre-Plans - Overview

- Documents containing data and information that assist in establishing control and successfully responding to identified incidents
- Pre-plans are developed to prevent response difficulties
- Reduces the related incident safety risks
- Training tool to test systems against the specific requirements of major incidents

Consultation with Emergency Services Authorities on the EM Strategy

- Consult emergency services within the jurisdiction
- Emergencies services must be involved in the preparation and acceptance of the plan
- Responders must know and understand the hazards
- Constant liaising with key emergency services personnel is essential to ensuring individuals are aware of their roles and responsibilities
- Joint training and emergency drills exercises

Consultation with Neighbours

- Identify the neighbours requiring consultation
- Industrial neighbours that may be impacted and or can assist
- Residential neighbours
  - Houses
  - Vulnerable populations

Testing of the Emergency Response Plan

- Test the plan
- Emergency services, adjacent facilities, the local council and nearby residents should be involved in major testing exercises.
- Emergency response personnel must be trained correctly in the use of developed CPP

West Texas Example: Overview

- The CSB Investigation into the West Fertilizer Company (WFC) Fire and Explosion identified 7 key factors that contributed to the fatalities of emergency responders

- These 7 key factors could have been addressed by using the following steps to develop emergency management and response strategies
  - Identification of the Potential Incidents
  - Develop an Emergency Response Strategy
  - Develop an Emergency Plan
  - Develop a Contingency Pre-plan

West Texas Example: Identification of Potential Incidents

- Relevant key factors from the CSB Investigation Report :
  - No. 4: Lack of knowledge and understanding of detonation hazards of fertilizer grade ammonium nitrate (FGAN)
  - No. 7: Limited and conflicting technical guidance on AN

- Failure to identify hazards and potential escalation incidents is a reoccurring theme in the findings and recommendations from the CSB investigation.

- The right approach - *Identification of the Potential Incidents*

West Texas Example: Develop an Emergency Response Strategy

- Relevant key factors from the CSB Investigation Report :
  - No. 5: Lack of situational awareness and risk assessment knowledge on the scene of an FGAN-related fire

- Develop standard operating procedures for pre-incident planning for facilities that store / handle hazardous materials such as FGAN (Recommendation 18)

- The right approach - *Develop an emergency response strategy*

West Texas Example: Develop an Emergency Plan

- Relevant key factors from the CSB Investigation Report :
  - No. 1: Lack of incident command system
  - No. 2: Lack of established incident management system

- CSB Report comments that firefighters with appropriate training did not assume the role of IC to establish, implement, and coordinate an incident command structure and incident management system for the fire emergency

- The right approach - *Develop an Emergency Plan*

West Texas Example: Develop a Contingency Pre-plan

- Relevant key factors from the CSB Investigation Report :
  - No. 3: Lack of hazardous material (HAZMAT) and dangerous goods training
  - No. 6: Lack of **pre-incident** planning at the WFC facility

- West Volunteer Fire Department did not conduct drills and exercises at the WFC facility before the 2013 fire and explosion (Finding Number 10)

- The right approach - *Develop a Contingency Pre-plan*

Summary

- Develop a plan that demonstrates a preparedness to respond to site specific emergencies
- Contents of the plan need to address the key requirements outline in legislation
- CPP are developed to detail the specific requirements of the identified major incidents
- Stakeholder consultation is vital to ensure correct response to the incident
- Training exercises are important in building experience in response personnel to minimise potential for delay or mistakes

Summary

Ref: Williams Geismar Olefins Plant - Reboiler Rupture and Fire Geismar, Louisiana – Case Study Report No. 2013-03-I-LA , U.S. Chemical Safety and Hazard Investigation Board

Questions