Chemical Safety Board and Qatar
Proposed Chapter

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History and Background

- Authorized in 1990 by the Clean Air Act Amendments.
- First funded in 1998.
- The headquarter is located in Washington, D.C.
- Separate, “independent” agency
- Work with other agencies such as EPA and OSHA.
- Mission of CSB is to maintain the safety of people in chemical plant.
Structure of CSB

- Board members and the Board’s professional staff.
- Members are appointed by the President and confirmed by the U.S Senate
- Currently five members.
- 35 professional staff.
Structure of CSB

• Board’s professional staff are responsible for the day-to-day activities and investigations.
• Prepare the draft reports that are presented to the Board members.
• All investigation reports, findings, and recommendations must be approved by the Board as a whole.
Standard Procedure of Investigations

- Criteria for evaluating process performance:
  - Process knowledge and documentation
  - Process risk management
  - Human factors
  - Training and performance
  - Incident investigation
  - Company standards, codes and regulations
  - Audits and corrective actions
Standard Procedure of Investigations

1. Team Planning
2. Incident
3. Loss
4. Notification to Activate Team
5. On-Site Investigation
6. Identification of Immediate Causes
7. Identification of Basic Causes
8. Lack of Management Control Factors
9. Recommendations
10. Implement Recommendations
11. Follow-Up

- People
- Property
- Production
- Environment

- Position
- People
- Parts
- Paper

- Immediate/Technical
- Avoid Hazards
- Improve Management System
Standard Procedure of Investigations

- Open: 216 (40%)
- Closed: 321 (60%)

Bar chart showing the distribution of investigations.
Investigations

- CSB’s website provides reports on all completed investigations that were carried out in the past, as well as some information on current investigations.
Investigations – Examples

- Completed investigations
  - Sugar Dust and Explosion Fire
  - T2 Laboratories, Inc. Runaway Reactions

- Current investigations
  - ConAgra Natural Gas Explosion and Ammonia Release
  - Silver Eagle Refinery Flash Fire and Explosion
Sugar Dust and Explosion Fire

- February 7, 2008 in Port Wentworth, Georgia
- 14 worker fatalities and 36 severe injured
- An unknown source ignited the massive concentrations of sugar dust accumulated under a steel belt conveyor
- Led to secondary explosions
Sugar Dust and Explosion Fire

- The equipment was not designed to minimize the amount of sugar released to work space

- Overheating in the steel belt conveyor was most likely the source of ignition

- The sugar dust accumulation was above the minimum explosive concentration

- The evacuation plans in the buildings were below the required standards
  - 2-way radios
  - cell phones
  - face-to-face alerts
Sugar Dust and Explosion Fire
T2 Laboratories, Inc. Runaway Reactions

- December 19th, 2007 in Jackson Ville, Florida
- four fatalities and 32 injured
- A cooling problem occurred while T2 was producing a batch of methylcyclopentadienyl manganese tricarbonyl (MCMT)
T2 Laboratories, Inc. Runaway Reactions

- An exothermic reaction were being run and not enough cooling was supplied

- The relief system was incapable of relieving the pressure from a runaway reaction
T2 Laboratories, Inc. Runaway Reactions
ConAgra Natural Gas Explosion and Ammonia Release

- June 9, 2009 in Garner, North Carolina
- 3 fatalities and dozens of injured
- Around 100,000 ft$^2$ of the plant affected
ConAgra Natural Gas Explosion and Ammonia Release

- A new gas-fired water heater was installed a week before the accident took place. Gas is supplied to the heater via a gas line installed between the gas main on the roof and the pump room where the heater was placed.

- The line was purged to remove the air inside it on the day of the explosion

- CSB suspects that the gases inside the line might have vented into the pump room, leading to a high concentration of flammable gases
ConAgra Natural Gas Explosion and Ammonia Release
Silver Eagle Refinery Flash Fire and Explosion

- January 12, 2009 in Woods Cross, Utah
- 4 people severely burned
- A large vapor cloud was released from an atmospheric tank containing 440,000 gallons of light naphtha
- An undetermined yet ignition source led to a fire
Silver Eagle Refinery Flash Fire and Explosion
Qatar Proposed Chapter

- Qatar Safety Board (QSB) will serve as an independent organization that assesses and investigates accidents in the Qatari market.
Medical Department

- Prioritize the patient’s health and safety
- Treat everyone equally and ethically
- Maintain clean and hygienic equipment and tools
- Maintain a cooperative and supportive working environment
- In case of misconduct, notify responsible authorities and groups involved
Medical Department

• Common Formats.

• Include:
  • Incidents — events in which patient safety has been reached, whether or not there was harm
  • Near misses — patient safety events almost reached the patient
  • Unsafe conditions — circumstances of an event that increases the probability of harming patient safety
Industrial Sector Department

- Objectives
  - Investigate and identify causes behind all accidents in the industrial sector in Qatar
  - Write a detailed report on each accident that gives advice on how to avoid such accidents
  - Raise awareness by publicizing the reports and making them available for everyone free of charge
Industrial Sector Department

• Guidelines
  – The department will be in contact with all the companies in the industrial sector in Qatar
  – 3-5 members that will examine each accident
  – The members responsible for a certain accident will file a report that includes its causes and ways to avoid them
  – The report will be written as soon as all the information is available and distributed to all the companies in the industry in order to avoid similar accidents
Sea Department

• Concerned with people’s safety and reducing sea accidents.
• Objectives:
  • Provide all people in sea with information about the weather at all times
  • Reduce the probability of polluting the sea, either from industries waste or fuel ships explosion
  • Improve the communication between the sea patrol and all people in sea
  • Increase the knowledge and skill of sea workers and fishermen about the safety and life saving equipments
Sea Department

How to achieve objectives:

- The department will provide recommendation and standards for the safety equipments.
- Provide solutions and plans to put in action when fuel spills happen, or to prevent them from happening in the first place.
- Building stations for telecommunication in sea.
- Approval is needed to set regulation and laws regarding the safety of people in sea.
Transportation Department

• Concerned with people’s safety and reducing road accidents.
• Statistics shows an increase in car accidents.
• In 2008:
  • Number of cases = 4816
  • Number of death = 199
  • Vital injuries = 419
  • Minor injuries = 1009
• Objectives:
  • Reduce the road fatalities per 100,000 inhabitants for the State of Qatar.
  • Improve the road construction plans in order to keep the workers and drivers safe.
  • Increase the awareness of people on the proper way of driving.
Transportation Department

- How to achieve objectives:
  - The department will provide recommendations on how to construct roads that will reduce car accidents.
  - Conduct research on how to reach the accident place faster.
  - Enforce strict laws and regulations about the following:
    - Using mobile phone while driving.
    - Wearing a seatbelt.
    - Speeding.
  - Increase awareness of people
  - Trucks should have their own roads outside the city, especially the crowded places.
Utilities Department

• Provide all the other departments of the chapter with the necessary equipment for the best performance and practices.

• Objectives:
  • Develop a comfortable workplace environment for the staff
  • Handle any matter with technology related aspects
  • Provide all staff and their families with health insurance and make sure they are applicable for it
  • Provide translation services
Finance Department

- Deal with all money related aspect in the organization.
- Income:

<table>
<thead>
<tr>
<th>Income source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>workshop</td>
<td>500,000 $</td>
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<tr>
<td>Selling merchandise</td>
<td>500,000 $</td>
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<tr>
<td>Registration fee</td>
<td>500,000 $</td>
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<tr>
<td>Investments</td>
<td>6,000,000 $</td>
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<tr>
<td>Government</td>
<td>10,000,000 $</td>
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<tr>
<td>Other sources</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>21,500,000 $</strong></td>
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</table>
## Finance Department

- **Expenses:**

<table>
<thead>
<tr>
<th>Expenses source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary</td>
<td>9,000,000 $</td>
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<tr>
<td>Equipment cost</td>
<td>8,000,000 $</td>
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<tr>
<td>Programs cost</td>
<td>750,000 $</td>
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<tr>
<td>Office furniture and equipment cost</td>
<td>630,000 $</td>
</tr>
<tr>
<td>Other expenses</td>
<td>1,000,000 $</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19,380,000 $</strong></td>
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</table>
Thank you for Listening

Any Questions ?!