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Safety Culture Spotlight

Weak Process Safety Management Program—Chemicals

- Failure to complete documentation above requirements
- Failure to have procedures and policies over the minimum required
- Failure to consider hazardous materials not covered by a regulation
- Failure to address processes and equipment beyond the regulations

BACKGROUND

A specialty chemical company produced materials using highly toxic feed-stocks such as phosgene, chlorine, and several others in complex highly exothermic reactions. The processes also used several flammable industrial solvents. The inventories of these feed-stocks were relatively large, e.g., the chlorine was stored and fed to the process in 90-ton rail cars, of which there was always at least three onsite. The facility also changed or trialed products and introduced new ones or variants of existing ones frequently.

WHAT HAPPENED

The Environmental, Health and Safety Manager of the facility responsible for the Process Safety Management System, had a very long tenure and firmly believed the best approach to complying with applicable regulations was to meet the minimum requirements and no more. He has successfully negotiated with regulatory inspectors over the years and has been successful in restricting inspections only to the specifically covered areas.

Process Hazards Analyses were performed using simple checklists because the regulations allowed it, and resulted in little more than short memos with brief checklists attached. Audits were completed relatively quickly, and produced short reports with no more than three findings. The incident investigation file contained no investigation reports and no metrics were collected.

Do you believe the facility had no incidents? How could they avoid them? Such an approach may reduce the regulatory exposure for a time, and it certainly may seem simpler and cheaper. However, it ignores significant risks inherent to the company's processes. The notion that strict compliance with regulations will reduce the process safety risk to a low level is a false belief and an indicator of a poor culture.

SAFETY CULTURE FOCUS

- ✓ Strong leadership must support hazard analyses beyond the minimum requirements to ensure the safety of personnel and processes.
- ✓ Safety must be an integrated part of all activities and not limited to specific areas of operations.
- ✓ The optimum safety culture includes a questioning environment to identify and mitigate potential hazards.
- ✓ A strong Process Safety Management Program allows for continuous improvement.

****Only 54% of those surveyed indicated risk planning was a strength in their organization.****

IMPROVING HYDROGEN SAFETY CULTURE

LEARNING OPPORTUNITIES FROM OTHER'S EXPERIENCES

"Safety culture is how the organization behaves…
…when no one is watching."

Safety Culture Framework

- Safety is everyone's responsibility
- Strong leadership support
- Integrated into all activities
- Open, timely, effective communications
- Questioning/learning environment
- Mutual trust
- Continuous improvement

What are the benefits?

- ✓ Eliminates common weaknesses identified as contributing factors to catastrophic events.
- ✓ Promotes trust in the hydrogen energy industry's ability to deliver safe, reliable, quality products and services.
- ✓ Supports a sustainable legacy for companies and the hydrogen industry.
- ✓ Fosters efficiency and productivity in the workplace.

Resources

- ✓ For further information and resources on safety culture, see: https://www.aiche.org/ccps/safety-culture-what-stake
- ✓ For further case studies on safety culture, see: https://h2tools.org

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