

Too Much Hot Air—Emergency Response

- Hot-air balloonists trapped in cooling towers updraft
- Finite fuel supply leads to emergency landing
- Plant workers emergency response actions save the day

BACKGROUND

A group of balloonists were participating in a hot-air balloon festival featuring balloons designed to look like cartoon characters and toys. The wind carried them over a large chemical complex, where they found themselves caught in the rising column of warm air coming off the plant's cooling towers. While the updraft did not affect the balloons' ability to float, it did prevent them from drifting with the wind. The plant could not shut down its cooling towers, and the balloonists only had a finite supply of fuel, so there was no alternative: the hot-air balloons had to be brought down inside the plant. (Ref E.10)

WHAT HAPPENED

The balloonists and plant personnel had to guide the balloons down in an orderly fashion between buildings, pipe racks, stacks, flares, and ponds without damaging the balloons or plant equipment, and taking care that the balloons' burners did not trigger any fires. Teams of employees spontaneously coordinated with the plant emergency management team to choose landing sites, guide balloons to them, deflate the balloons, and move them to clear the landing sites for the next balloons' descents. All balloons were landed safely, with no damage to the plant and no injuries, even to Mr. Potato Head. What positive safety culture dimensions did the plant demonstrate in this unusual situation?

It is easy to imagine plant workers laughing at the balloonists being stuck over the plant, or even for them to view their predicament as a special show just for them. What culture attributes led workers to quickly understand this was a potentially dangerous situation?

Even though plant workers took the situation seriously, they laughed about the situation as they went about their rescue work. To what degree is good-natured humor an indicator of a strong safety culture? This was clearly not the kind of emergency response that anyone in the industry would plan for or train. Yet, the response was executed flawlessly. What culture dimensions help made this possible?

SAFETY CULTURE FOCUS

- ✓ Workers with a strong safety culture are prepared for and able to respond to the unexpected.
- ✓ Effective communications enabled workers to successfully respond to and mitigate the hazard.
- ✓ Mutual trust leads to a well coordinated and executed response.

****Only 33% of those surveyed indicated emergency response 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>