CENTER FOR Hydrogen SAFETY
Connecting a Global Community

Safety Culture Spotlight

Empowered to Affect Safety—Continuous Improvement

- Failure of management to proactively address unsafe practice
- Assumptions lead to incorrect conclusions
- Employee awareness and action improves operational safety

BACKGROUND

An engineer visiting a plant for the first time arrived to find his access to the gate house blocked by an arriving tank truck. He watched as the truck crept onto the scale, and noticed with amusement that the truck's wheelbase was 15 centimeters too long to fit on the scale.

His amusement increased when the truck backed up and the guard placed a railroad tie, conveniently fitted with handles, on the front end of the scale. The driver than accelerated and quickly applied the brakes, stopping expertly with his front wheels hanging over the front of the railroad tie, suspended above the ground. With the back wheels now on the scale and the weight of the front wheels transferred to the railroad tie, the truck was weighed. The truck then rolled off the railroad tie, the railroad tie was removed, and truck continued to the unloading area.

WHAT HAPPENED

As the truck pulled away, the engineer read the label on the tank car that he had not noticed earlier: "Chlorine, liquid". He then noticed the relief valve atop the end of the tanker and realized that if the driver was any less expert, liquid chlorine could have sloshed with enough force to open the relief valve, not far from where he was standing. While he might have been able run away, the guards would have been trapped in their building.

The engineer proceeded to the Plant Manager's office and inquired about the situation. "We worry about this every day," the Plant Manager said. "We'd prefer to switch to rail transport, but our chlorine usage is not enough. And corporate will never approve a new scale. So, we are stuck with it. Luckily, it is the same driver every time and he is very good." The engineer asked if the plant manager had ever requested the new scale, considering the potential consequences. He had not. "Why don't we try?" the engineer suggested. The plant manager wrote an appropriation request, noting the risk caused by the too-short scale and inviting the regional director to observe the weighing of the truck. The new scale was approved in the next budget cycle and installed soon after.

This example shows how employees may have greater empowerment to address process safety issues than they believe they have. What factors could have contributed to the Plant Manager incorrectly believing he could not address this risk? The engineer was certainly not the first company employee to visit the plant. What factors could have prevented other company visitors from mentioning it?

SAFETY CULTURE FOCUS

- ✓ Strong leadership must be proactive in addressing unsafe practices and conditions.
- ✓ An open, questioning environment empowers workers allowing for continuous improvement.
- ✓ Avoid assumptions - safety is everyone's responsibility in the company and organization.

****Only 46% of those surveyed indicated employee involvement 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

Keywords: weak, poor, minimum, regulations, flammable, chemical, checklists, compliance