CENTER FOR Hydrogen SAFETY
Connecting a Global Community

Safety Culture Spotlight

Playing the Odds—Risk Awareness

- Wisdom is not always associated with experience
- Past performance can diminish a sense for risk
- Procedure compliance is non-negotiable

BACKGROUND

A young engineer overseeing his first plant trial batch was discussing the first step of the operating instructions with a 35-year experienced operator. "We can skip the inerting step," the operator said. "That will save us some time to have coffee and eat those nice donuts you brought for me and my buddies. "The engineer shook his head and explained patiently that it was necessary to inert the reactor, because otherwise the flammable atmosphere could ignite, especially because the solvent was not being fed through a dip-pipe. "Yeah, I've heard of that," the operator said, "but take it from me, it is a waste of time to inert the reactor because 9 times out of 10 it does not explode."

WHAT HAPPENED

"Uh, let's have that coffee and talk about it," the engineer said. They went into the breakroom, took their coffee, and sat across the table from each other with the box of donuts between them. The engineer reached for a donut. "The thing is," he said, "if it doesn't explode 9 times out of 10, then it does explode that other one time. I don't know about you, but my goal is this." He held the donut up in front of him, showing the operator the big sweet 0.

The operator grabbed the donut and stuffed it in his mouth. After washing down that donut with a gulp of coffee, he put 2 more donuts in his pocket, left the breakroom and started inerting the reactor.

The operator appeared to understand the hazard and possibly even the risk. If so, did he need to have it explained to him again? Or did he need something else? Did the operator frequently skip other safety steps in procedures? Was this normal behavior within the plant? Should the engineer have questioned the Plant's imperative for safety?

How did the engineer convince the operator? Was it through a logical argument? Establishing mutual trust? Or was the operator testing the engineer's leadership?

SAFETY CULTURE FOCUS

- ✓ Strong leadership maintains a culture with a sense of vulnerability.
- ✓ Timely, effective communication can be critical to identifying and mitigating risk.
- ✓ Experience is no substitute for an open and questioning environment.

****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

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