CENTER FOR Hydrogen SAFETY
Connecting a Global Community

Safety Culture Spotlight

Reporting Process Hides Real Data—Continuous Improvement

- No incidents is not always good news
- Historical practices and data can be misleading
- Reviews beyond the surface of charts are necessary

BACKGROUND

The monthly Key Performance Indicators (KPIs) for process safety incidents and near misses at a refinery had been very low for several years. The new Refinery Manager was pleased with this KPI, especially since in his first year it was zero. In his previous refinery where he had been the Operations Manager, the same KPI had been favorable but not that good. He asked the Process Safety Management System (PSMS) Coordinator how the KPI was derived. He learned that during acquisition negotiations five years earlier, the previous owner had been challenged by several potential buyers about the high rate of near misses. The near misses were not serious and no actual incidents had occurred, but the company attempted to lower their bid because of it.

WHAT HAPPENED

After the acquisition, the refinery began investigating and addressing near misses less formally. Consequently, when the KPI program was implemented, the near miss result was very positive.

Further review revealed during the previous two years several Safety Instrumented Systems (SISs) had been activated during plant upsets or transients. These had not been classified as near misses because, according to an e-mail, "the safeguards had worked as designed and that's not a near miss because that was what they are supposed to do."

Following this discovery, the facility revised the definition of the near miss KPI to align with the American Petroleum Institute (API) and Oil & Gas Producers (OGP) standard for near miss reporting. This standard recognizes that a SIS trip usually represents a close approach to the capability of the equipment to contain the process, and therefore truly is a near miss. By tracking these types of near misses, the facility would have an opportunity to learn about the process, culture, and PSMS without suffering any adverse consequences. As a result, the data reported monthly returned to values that were more typical for a large refinery.

This example shows both good and bad examples of the role of leadership in process safety culture. What are they?

SAFETY CULTURE FOCUS

- ✓ Understand the basis for reports and data to understand the results—promote a questioning environment.
- ✓ Historical reports may not be a true indicator of past performance.
- ✓ Continuous improvement requires changes to accurately capture data.
- ✓ Strong leadership supports changes for accuracy even when the data may be less favorable.

****Only 37% of those surveyed indicated management 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