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insights



PREVENTING FATALITIES AND CATASTROPHIC INCIDENTS: THE MISSING ELEMENTS



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PREVENTING FATALITIES AND CATASTROPHIC INCIDENTS: THE MISSING ELEMENTS

The chemical and refining industry has become one of the most regulated industries in the world. With all the regulations, procedures, and technological advancements, one would think the frequency of fatalities and catastrophic incidents would have significantly diminished over the past several decades. Unfortunately, a decline is not the case. Quite the opposite, the rate of these incidents is either flat or increasing. The loss of human life and financial impact has been tremendous. Some of the most catastrophic events have led to site closures and the collapse of what were previously very successful companies. The range of employment lost covers the gambit – from janitors to CEOs – including persons not directly involved in these incidents.

Companies in the chemical and refining industry invest more and more resources on safety and systems to prevent fatalities and catastrophic incidents. Most U.S. companies fall under OSHA's PSM Program, with a very comprehensive and complex set of requirements. OSHA Standards for occupational safety are thousands of pages long, with industry codes and standards, design standards, employee training programs, mechanical integrity programs – the list goes on and on. Most companies have internal audit programs to ensure compliance; and some also have independent third-party or regulatory audits.

With all these systems and resources dedicated to safety, why is the industry not experiencing a reduction in fatalities and catastrophic incidents? Because these programs often fail to identify the unknown risk, nothing is done until an event



occurs which has terrible consequences. The key to reducing the risk of fatalities and catastrophic events lies in **culture, risk identification, and corrective action**. One may say,

“That’s obvious. We focus on all three of these already, and it’s nothing new.” But do we really? Is everyone involved at their level, from CEO down to the front line? Let’s go a bit deeper into each of these three.

Culture

Every company has a culture, and the word means a lot of different things to different people. The culture I am referring to is one of compliance versus commitment to reduce risk. Compliance is a good thing. It means both internal and external rules and procedures are being followed. In today’s environment, being in compliance is not only the price of doing business but also the way for leaders to stay out of jail. Compliance is a must, but does it reduce the risk of catastrophic events?

Not really. At best, it maintains the status quo. On the other hand, commitment reduces risk if all job levels share it. Commitment doesn’t just mean following rules and procedures; it indicates everyone is committed to making them better. It means people do not only look at the work being completed, but they also focus on the quality and effectiveness of the actions taken. It indicates the whole organization is committed to problem-solving and to reducing risk.

- Reward people for exposing problems and risks.
- Set an expectation of quality, not just completion of activities.
- When a high-risk event happens, but nobody gets hurt, look at the opportunity to make things better and to reduce or eliminate risk before something terrible does occur. In most fatal and catastrophic incidents, investigation reveals the same circumstances that led to the disaster had previously occurred multiple times without severe consequences.

As a leader, react to high-risk near-misses as if the worst-case had occurred. Mustering the same emotion when you’re feeling lucky is not easy, but can make a real difference.

Risk Identification

Now, on to crucial number two: Risk Identification. Obvious, but often overlooked, is the impossibility of eliminating the unknown risk. But unknown to whom? Companies often leave risk ranking up to safety experts, using two-dimensional (severity/probability) risk matrices, which were designed by and for engineers. Many overlook the fact that the frontline worker is the one who knows about and witnesses most of the high-risk events and conditions. Leadership and management are often unaware of these events or circumstances. Workers may not bring the issue to the attention of leadership because they think leadership has deemed it an “acceptable” risk. Or perhaps workers do not see this reporting responsibility as their job; it is safety’s. Or perhaps they brought the same issue up in the past and nothing was done about it. Or perhaps leadership never asked their workers to commit to reducing risk (“Just follow the rules”) or leadership never provided a tool worker could use to rank risk. Whatever the reason, if employees at all levels in your company are not engaged in identifying risk, you are not leveraging the full potential of your organizational resources.

If one asks most people if they make decisions based on a risk matrix, the result would be a resounding “no.” But almost everyone makes personal or family decisions based on risk; they just don’t use a matrix, and they don’t think or talk in powers of 10. Although different people may view risk differently, everyone is capable of assessing risk.

A simple thing leadership can do that will drastically improve risk identification is set the expectation that risk reduction is everyone’s job and then provide a tool that everyone can understand. Focus on high-risk events and conditions – not the things with minor or moderate consequences. For example, tell people to report the things that “would not surprise them” if it could lead to a disabling injury, a fatality or a catastrophic event. Name these risk categories if you like but keep it simple.

As these high-risk incidents or conditions come to light, the likelihood of argument or debate about the potential risk is extremely low. In any case, whichever method you employ to devise a rating system, keep it simple.

Share and communicate the results, which causes growing pains in some locations and companies. Communicating high-risk events or conditions is like “airing dirty laundry” – it’s just not naturally what someone wants to do. If managers or others are punished for reporting high-risk events, real or perceived, the information will go underground, along with risk identification. Reward employees for reporting high-risk incidents. Top leadership must set the tone for this process to work and be effective.

Corrective Actions

Building the right culture and identifying high-risk incidents and conditions is critical but worthless without effective corrective actions. This area is where many companies miss the mark. The keyword is “corrective,” which should mean action is taken to eliminate the risk or prevent future occurrences. Unfortunately, in many cases, following investigations, RCAs and reports, the items listed as corrective actions don’t fit this definition.

Many times, they are not corrective actions at all. Cleaning the blood out of the ambulance may be necessary, but it does not prevent re-occurrence. The President’s speech about never allowing “this” to happen again is essential for other reasons, but it is not a corrective action. The same is true of terminating an employee for not following procedures, then hiring a replacement that may not follow the same procedure. The employee may need to be fired, but it is not a corrective action.

More subtle examples exist that waste resources but don’t prevent the incident from reoccurring. A typical example is to retrain employees when they have previously been trained multiple times. Another example is to “revise the procedure,” when the original procedure – if followed – would have prevented the accident. Many companies have corrective action tracking systems; but these systems can produce a false sense

of security. Even if 100 percent of the items listed as corrective actions are completed by the assigned dates, it is meaningless unless the actions truly are corrective. When thinking about corrective actions, quality is much more important than numbers and deadlines.

Making It Happen

So where can a leader begin? An excellent starting place is with the high-risk incidents or conditions you can recall from the past several years – the ones that kept you awake at night. Go back and look at the corrective actions.

- Were the actions taken something a knowledgeable person would believe will prevent this same thing from happening again?
- Was the action taken spread throughout all applicable areas in the company or was it just local?

Examine how many things were labeled corrective actions but, in reality, were not corrective actions at all. Truly effective corrective actions usually involve a fundamental change, not a repeat of something that did not work previously. Development of a rating scale for corrective actions is important, but don't make it complicated and focus on high-risk incidents. Once this task is completed for past incidents, start applying the same logic when new incidents occur.

In Conclusion

Even if your company is one of the best and has never had a fatality or catastrophic incident, don't believe it can't happen to you. Work to eliminate risk by building a culture that goes beyond compliance, by engaging the whole organization in risk identification and elimination, and by ensuring corrective actions do reduce or eliminate the risk of fatalities and catastrophic incidents.

Find and eliminate high-risk incidents and conditions before they find you or your organization.

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About the Author:



Leonard Schooler worked in the Chemical Industry for 42 years, both domestically and abroad. He has held management positions in Engineering, Production and EHS. He retired from BASF Corporation in 2017 as Director of EHS/Texas Hub. In this role, he led an organization of EHS professionals providing EHS pro-

grams, support and services for BASF manufacturing sites, businesses and laboratories in Texas. BASF Corporation utilizes a number of safety concepts Leonard developed, among these are the AB Index, Schooler's Triangle and the Career Safety Rate (cSr). He also organized and led the Annual BASF/Contractor Safety Conference, which helped align safety goals with major contractors. These programs and concepts contributed to significant improvement in safety. Leonard has shared many of these concepts with industry groups such as Texas Chemical Council, American Fuels and Petrochemical Manufacturers Association and others.

Leonard has a BS in Chemical Engineering from the University of Texas @ Austin and a MBA from Corpus Christi State (now Texas A&M Corpus Christi). Leonard resides in Lake Jackson, TX.