



WHITE PAPER

Process Safety Excellence in Mergers and Acquisitions Beyond Technical Due Diligence

Author: Arturo Trujillo, Global Director of Process Safety Consulting

Mergers and acquisitions have been on the rise for decades, promising—and delivering—fast penetration into new business sectors and geographical regions. At the same time, this type of inorganic growth can result in a potential rise in **process safety incidents**, as experience has unfortunately shown. This doesn't have to be the case. A seamless, safety-centered integration is achievable when the process safety procedures and practices of both organizations are properly assessed, and an effective integration plan is implemented and monitored.

Preparing to Merge and Acquire

Envision yourself at the helm of a large corporation planning acquisitions in countries where your corporation has little presence. This would not be an unusual move, as the advantages for your company's growth are significant. Indeed, Figure 1 shows a growing trend in mergers and acquisitions in the last decades.

In preparation, you take great pains—and dedicate a significant amount of resources—to ensure that your technical, financial and legal due diligence processes are conducted in the strictest manner. You let loose a cohort of engineers, accountants and lawyers to scrutinize the acquisition target, until you are sure that the technical, financial and legal liabilities have been identified and

assessed. You have drafted an integration plan to make sure that the acquired company integrates seamlessly into yours, and that all processes, from production to administration, continue uninterrupted. Now you can sit back and relax: what could go wrong?

A Process Safety Catastrophe: The Texas City Refinery Explosion

On March 23, 2005, a concatenation of organizational and technical failures at the ISOM isomerization process unit at BP's Texas City refinery in Texas City (Texas), led to the formation of a large hydrocarbon vapor cloud. At approximately 1:20 pm the cloud



Figure 1: Trend in Mergers and Acquisitions in the Last Decades, Institute for Mergers

ignited, causing an explosion that killed 15 workers, injured 180 others and severely damaged the refinery. This is an example of what can go very wrong!

This incident occurred several years after BP had acquired the refinery, the second largest in Texas, and the third largest in the United States. Following the explosion, the outcry from the media and the public was so vehement that an independent panel, led by former U.S. Secretary of State James Baker III, was created to investigate the safety culture and management systems at BP North America. The panel report was released on January 16, 2007¹, and included the following statement:

“[...] the Panel’s review indicates that material deficiencies in process safety performance exist at BP’s U.S. refineries...Some of the deficiencies appear to relate to legacy systems in effect prior to BP’s acquisition of the refineries. Even more than five years after BP acquired four of its U.S. refineries from Amoco and ARCO, those refineries continue to rely heavily on legacy systems, standards, and procedures, some of which need substantial updating to bring them into conformity with current good or recommended practices.

The report makes clear that the refineries BP acquired had not been integrated into the company’s **process safety management** systems, nor into its safety culture. Each location carried on as it had prior to the merger, failing to align its processes with best practices, and inevitably experiencing lapses in the absence of targeted oversight and positive reinforcement.

The takeaway here is that good technical due diligence is not enough. When planning a merger or acquisition, a thorough assessment of the process safety practices, and culture of the organization or site being acquired and a customized plan to bring them into alignment with the parent company are indispensable.

Many of these deficiencies relate to basic operational matters, including

- > thoroughly identifying and evaluating hazards and establishing effective controls for those hazards or taking steps to mitigate those hazards;
- > testing, inspecting, and maintaining plant and equipment in fit-for-purpose condition;
- > implementing external codes and practices that provide guidance for mitigating process hazards; and developing and maintaining adequate levels of process safety knowledge and skill levels throughout BP’s refineries.”

¹ The report. The BP US Refineries Independent Safety Review Panel. January 2007.

Assess and Integrate

A thorough process safety assessment does not rely on occupational safety statistics. It is important to remember that excellent occupational safety performance does not necessarily correlate with good process safety practices. In fact, conflating the two fields was one of the issues identified in the investigation report of another infamous process safety incident: the Deepwater Horizon oil spill in the Gulf of Mexico in 2010. In short, looking at “safety stats” during technical due diligence does not constitute a good assessment of on-site process safety practices and says nothing about process safety culture.

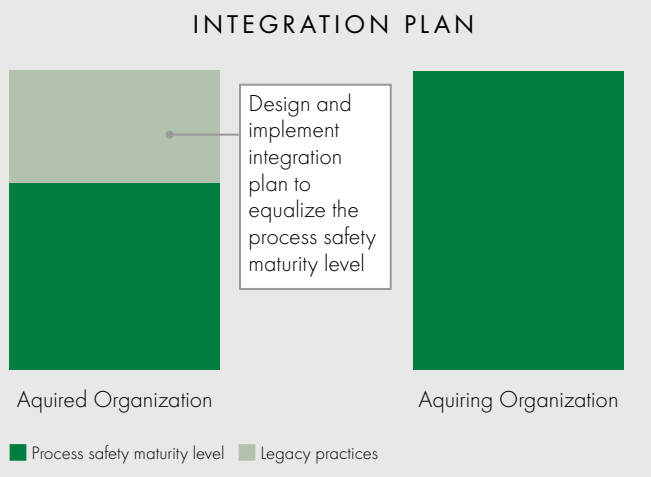


Figure 2: Optimizing process safety maturity levels of acquired organizations

Whether the process safety assessment reveals major deficiencies or minor deficits, the next step is to design and implement an integration plan. The purpose of the plan is to equalize the process safety maturity level of the acquired organization with that of the acquiring company. Otherwise, legacy practices may remain, as the Texas City findings point out very clearly, generating gaps and contradictions. Close monitoring throughout the design and implementation processes and beyond is essential to maintaining high safety standards.

Expert Support for Mergers and Acquisitions

At DEKRA we strongly believe that you need to measure what you want to monitor. This is, of course, not new, as William Thomson, 1st Baron Kelvin, already stated the following in a lecture at the Institution of Civil Engineers back in 1833:

“When you can measure what you are speaking about, and express it in numbers, you know something about it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts advanced to the stage of science.”

That’s why we combined the expertise of our consultants and specialists with the experience and lessons learned in countless assessments and audits to design of our **Organizational Process Safety (OPS)** methodology, a tool for measuring and optimizing process safety. OPS is ideal for assessing process safety maturity levels and for supporting companies involved in mergers and acquisitions as they integrate and align process safety practices and culture. DEKRA’s OPS tool is:

- > Universal; that is, applicable no matter the business area or the risk level associated
- > Designed to include cultural and organizational elements.
- > Objective, precise and consistent.
- > Minimally intrusive in the day-to-day activities at the site or organization.
- > Able to provide not only a current picture of the process safety status quo, but an optimized roadmap for improvement as well.

Relying on a knowledgeable partner to help assess the process safety and culture of new mergers or acquisitions has the added advantages of allowing you to see your own blind spots and reassuring the companies joining your team that objectivity and transparency are valued. When the stakes are high—and past experience proves that they are—maintaining excellent process safety standards and achieving cultural alignment prove to be well worth the resources and effort invested.



DR. ARTURO TRUJILLO

Dr. Arturo Trujillo is Global Director of Process Safety Consulting. His main areas of expertise are diverse types of process hazard analysis (HAZOP, What-if, HAZID), consequence analysis and quantitative risk analysis. He has facilitated more than 200 HAZOPs over the last 25 years, especially in the oil & gas, energy, chemicals and pharma industries.



DEKRA Process Safety

The breadth and depth of expertise in process safety makes us globally recognised specialists and trusted advisors. We help our clients to understand and evaluate their risks, and work together to develop pragmatic solutions. Our value-adding and practical approach integrates specialist process safety management, engineering and testing. We seek to educate and grow client competence to provide sustainable performance improvement. Partnering with our clients we combine technical expertise with a passion for life preservation, harm reduction and asset protection. As a part of the world's leading expert organisation DEKRA, we are the global partner for a safe world.

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