

## The Importance of Process Safety Management in Post-Merger Integration

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With the increase in mergers and acquisitions (M&A) in the process industries, there is the risk of different philosophies / expectations on process safety management (PSM) leading to conflict as new companies are combined and integrated. In the case of an acquisition, it is often assumed that the acquiring company would have a more mature and sophisticated PSM system / culture in place, and the acquired company being less so. This is not always the case. Also, a financial buyer may have little or no experience of PSM systems. In the worst instance, a non-alignment of the PSM systems and/or the adoption of a less mature and sophisticated PSM system could lead to a major hazard event. Hence, it is vital that organisations follow a structured process to merging their approaches to PSM during the early stages of the M&A process.

Keywords: Merger, Acquisition, Process Safety, Organisation, Due Diligence.

### Introduction

With the increase in mergers and acquisitions (M&A) in the process industries, there is the risk of different philosophies / expectations on process safety management (PSM) leading to conflict as new companies are combined and integrated. In the case of an acquisition, it is often assumed that the acquiring company would have a more mature and sophisticated PSM system / culture in place, and the acquired company being less so. This is not always the case. Also, a financial buyer may have little or no experience of PSM systems. In the worst instance, a non-alignment of the PSM systems and/or the adoption of a less mature and sophisticated PSM system could lead to a major hazard event. Hence, it is vital that organisations follow a structured process to merging their approaches to PSM during the early stages of the M&A process.

The Center for Chemical Process Safety (CCPS) Guidelines for Process Safety Acquisition Evaluation and Post Merger Integration (AIChE, 2010) states that after purchasing a site or merging businesses in the process industries, many companies discovered a variety of previously unidentified process safety issues that required correction. A major contributory factor to this is a result of process safety (and associated asset integrity) not being an integral part of M&A due diligence (DD) activities. Experience shows that process safety is often not included in the DD process, as opposed to environmental DD, which is often included due to the concern of contaminated land and its associated major costs. A properly focused DD should identify many of the process safety issues that required correction. For example, some may be due to failure to invest in plant upgrades (e.g. upgrade of a process control system, installation of safety instrumented systems (SIS)) or a run to failure philosophy (not maintaining the integrity of insulation, minimal predictive or preventative maintenance, etc.). ERM routinely includes PSM in DD projects, in recognition of its importance and impact on the risk an organisation may be inheriting.

A study by Mercer Consulting found poor post deal integration was the primary reason that in 43% of over 300 mergers reviewed, the newly merged businesses did not out perform their competitors. Whilst this has significant financial implications for the newly merged businesses, there is also an increased risk of a major accident event occurring during the period of integration/transition. This exposure can extend beyond the integration period if employees are not engaged in this process. Hence, the need to plan and manage the post-merger integration (PMI) process is both necessary and obvious.

The objectives of this paper are to highlight to management, not just those in environment, health & safety (EHS) roles, the need to include PSM in the DD and integration process. Whilst the inclusion of PSM issues in DD is beneficial in identifying process safety risks, management need to be aware that this is only signposting an issue and not addressing it and there may be a 'rocky road ahead' and significant risks if PMI of PSM is not planned and managed appropriately. With the increase in M&A in the process and extractive industries, the lack of a well-defined PMI process including PSM, this may become a key contributor to or the root cause of major hazard events.

It is noted that while the focus of this paper is on PSM integration, the subject of integration should be recognised in a more holistic approach. This should include integration of environmental systems, corporate social responsibility, EHS software integration, management dashboards, process safety performance standards (PSPIs), etc. Each of these sub-issues must be interfaced / integrated accordingly within the overall integration process.

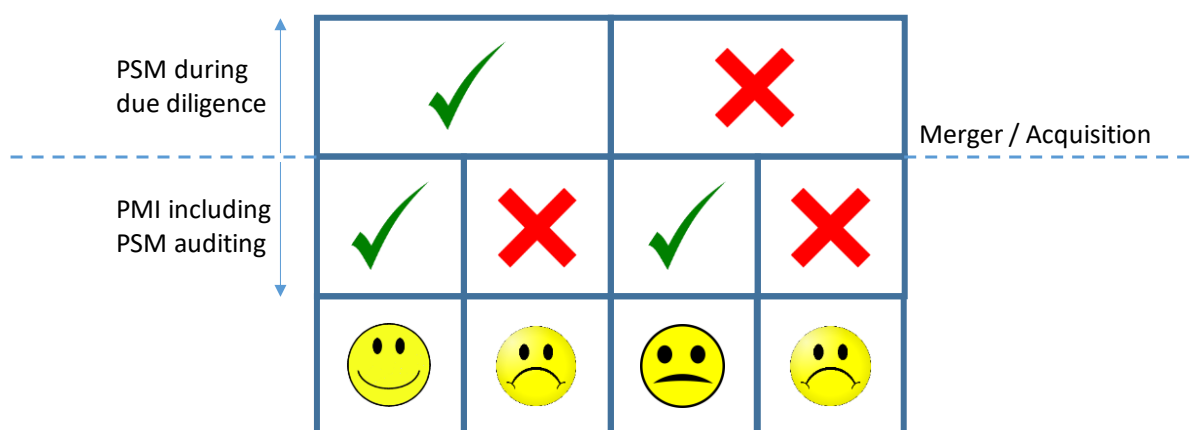
### The Case for PSM in Post-Merger Integration

It may be stating the obvious, but a smooth integration of technologies and cultures with merged or acquired companies is vitally important from a number of aspects as noted above. An advantage for modern day organisations from the process industries is that the safety management systems (SMS) (and management systems in general) will be structured based on codes and standard practices. Where there are SMSs that have been defined according to standard practices (such as COMAH / Seveso III, OSHA, CCPS), this augments merging of these standards relatively smoothly, in theory. One challenge may be the integrating "sub-COMAH / Seveso III" sites which may not have such well-developed / standardised SMSs.

The planning for an integration process is informed by the DD undertaken prior to a transaction being completed, i.e. the integration process builds on the results of the DD. In the case of an acquisition, the DD is conducted to identify potential risks

that the target company may expose the acquirer to and these can include a significant threat to the safety of personnel onsite and in the surrounding community, the environment and assets. DD identifies where significant investment would be required to develop a corrective action plan to address these and to ensure that the target company are: in compliance with relevant legislation; to meet the acquiring company's own standards and expectations; and to demonstrate good practice. A good DD can lay the groundwork for the subsequent PMI, and including PSM allows PMI to commence in better informed manner and helps to prioritise critical areas more effectively and efficiently, as illustrated in Figure 1. However, to re-emphasise a point stated above, the acquired company may have a more mature and sophisticated PSM system / culture in place, and this must be taken into consideration. In reality, the system of the acquiring company will take precedence, and there is a real danger that good systems already in place will be lost and the new organisation will be more susceptible to major accidents, particularly a management will be required across a larger organisation.

**Figure 1 – PSM during the DD and PMI processes**



Whether regulated under relevant legislation (such as the Seveso Directive in Europe or the OSHA 1910.119 PSM Standard in the US) or not, failure to manage process safety hazards at such sites can give rise to major accidents with the potential for:

- serious harm or fatality to people both on site and beyond the site boundary
- asset damage
- environmental damage
- prosecution and fines
- reputational harm
- reduced share price
- business interruption.

Additional unplanned costs are not only incurred in the case of a major incident, but in the absence of a solid DD insight into PSM, they can arise from:

- Justifying the basis of safety of existing process plant.
- Redesigning, re-engineering or retrofitting additional safeguards to bring existing process installations in line with recognised and generally accepted good engineering practices.
- Repairing, replacing or revalidating aged and poorly maintained or inadequately inspected plant.

### PSM Auditing during Due Diligence

In scoping a review of PSM in the context of DD, ERM's approach is typically aligned with the 20 elements of the CCPS Risk Based Process Safety Guidelines (AIChE, 2007), but with a clear focus on confirming (or otherwise) the presence of robust systems and practices, and in particular the extent to which:

- Facility Leadership has recognised the potential for major accident hazards (MHAs) associated with its operations and is committed to providing the necessary resources and prioritisation to reduce risk to as low as reasonably practicable (ALARP).
- The plant has been designed and constructed in accordance with recognised engineering standards, and process hazards and risks are properly identified, understood and managed.
- Appropriate systems, procedures, competencies and engineering controls are in place (and their effectiveness maintained) to operate the plant, maintain its integrity and to respond to emergency situations.

- Systems, procedures and metrics are maintained, such that the organisation is set up to learn from experiences and continuously improve.

It is the experience within ERM that a review of the PSM aspects in a DD process may only include a review of documents in the virtual dataroom (VDR). This approach is a significant weakness in the DD process, as PSM issues should be one of the key aspects of any M&A. A thorough DD must include opportunities for site visits, undertaken over a number of days such that there is the opportunity for detailed analysis / inspection of plant and a Q&A session with a number of site subject matter experts (SMEs) to determine the root causes of problems / issues that may be discovered at site. Other experiences of ERM professionals is that a site visit may simply include a tour of facilities in a minibus, where process plant can only be viewed from the surrounding roads. Again, this is not satisfactory as this does not provide the opportunity to discover problems / issues that may reveal weaknesses in the SMS.

Ultimately the objective of the DD is to identify any material issues related to the target which may require a significant investment to correct and in doing so render the transaction unfavourable. Potential PSM issues that could have this material impact include:

- Significant threat to the safety of personnel onsite and the surrounding community and environment due to hazardous events such as fires, explosions and exposure to toxic materials.
- Significant threat to the asset, such that these may be significantly damaged by fire and explosions with resulting capital losses and business interruption.
- Regulatory non-compliance.

Whilst this is the ultimate objective of the DD process, it should be remembered that there is a moral obligation for safety professionals to identify and report weaknesses in the SMS and how these may manifest in higher levels of risk of a major accident. Hence, the safety professionals involved in the DD should not only be driven by the M&A process, but by their ultimate duty to protect life.

The first stage of PSM DD should be an initial Corporate level assessment undertaken by a combination of:

- Structured review of relevant documentation disclosed in the project dataroom.
- Preparation and submission to Management of a focused questionnaire informed by review of the dataroom.
- Meeting with the target's group PSM SMEs. The scope of the meeting will be to establish whether there is evidence that demonstrates the status of the bullets above, and in particular, to identify known material process safety/asset integrity issues at the sites, and significant data gaps that mean a material issue cannot be discounted.

Where site visits are undertaken as part of the overall DD, a number of sites should be selected (based on process, heritage and geography) for a more detailed assessment by a PSM specialist(s) to test the implementation of Corporate policy, procedures and standards. The PSM scope during such visits will typically comprise confirming that:

- Appropriate process safety resources and competencies are available.
- Relevant process safety information is available and understood.
- Appropriate Process Hazard Assessments (e.g. HAZOPs) have been undertaken and periodically revalidated, and that all action items have been closed out.
- Major accident scenarios have been identified, the risk of these has been assessed, and suitable and sufficient measures are in place for risk reduction and management (prevention, control and mitigation) to demonstrate ALARP.
- Formal systems are in place to identify safety critical equipment and to assure its integrity.
- Confirmation that standard operating procedures are in place and that these cover normal and upset conditions and plant start-ups.
- Adequate maintenance systems are in place to manage both preventative, predictive (risk-based) and reactive maintenance, and that appropriate resources are provided to ensure that the ratio of preventative maintenance (PM) to corrective maintenance (CM) is appropriate (sometimes quoted as 4 to 1, and the optimum often quoted as being in the order of 6 to 1).
- Appropriate training is provided to those in all safety sensitive roles including e.g. operators and that their competency is assured.
- Formal systems are in place for control of contractors and that competency is assured.
- Formal systems are in place for managing change (i.e. assessing, authorising and documenting) are in place and are followed.
- Explosive atmospheres risk assessments and hazardous area classification have been completed, that the basis of safety is established and that installed electrical and mechanical equipment is in conformity with the area classification.

- Major accident scenarios have been identified, their consequence assessed and appropriate emergency response plans and arrangements are in place and periodically tested.
- Process safety (e.g. loss of containment) incidents are investigated and learnings used and shared.
- Both lagging and leading process safety performance indicators have been established and are tracked and reviewed by appropriate levels of management.
- Suitable and sufficient internal and external audit programmes are in place and that there is a formal management review to feedback the finding of the audit programmes and all audit findings are tracked to closure.

When conducting an M&A DD, it is advised that a visit to the operations is conducted by process safety SMEs to gain an impression of the level of importance given to PSM, preferably over a number of days, as noted above, including visits to several different units where there are multiple processes, such as in a refinery. Potential issues that are revealed from the site inspection can then form agenda items with regard to the questions to management and operations / maintenance. ERM has developed a protocol in this regard with a list of potential issues to look for while undertaking a site visit, and then a list of questions for management and operations / maintenance with regard to the SMS, based on the 20 elements of the CCPS Risk Based Process Safety Guidelines (AIChE, 2007), where the potential issues can be approached as agenda items.

### **PSM Auditing for Post-Merger Integration**

PSM auditing during the PMI stage is considered to be vitally important to reduce the risk of a major accident. The DD work will only ever be a sample, so on its own should not be assumed to have identified every concern; though the same principles as during the DD stage can be applied during PMI. As discussed above, these audits can be made more targeted to the weaknesses identified during DD (to both the target and the acquirer), and by identifying where the SMSs and cultures of the two companies to be merge diverge significantly. Areas that may be highlighted are:

- Culture.
- Corporate memory (and knowledge management and succession planning).
- Safety Management Systems and use of PSPIs
- Communication and Auditing.

These are discussed in more detail below.

#### **Culture**

The impact of differences in culture between organisations post-merger or acquisition should not be under-estimated. This is more pertinent where there has been an acquisition that was, for whatever reason, considered hostile by the workforce. Some of the more visible indicators of this are where the workforce continue to wear their original coveralls, hard hats, etc. with the acquired company's branding after being issued with replacements with the new branding, this has not been uncommon in past acquisitions. The workforce maybe making a statement of their personal or collective disappointment or resentment of the acquisition. This has been found to be particularly the case where the acquiring company is from another country. This may be further compounded when the acquired company was state-owned or partly state-owned.

A hostile workforce is not conducive to a positive process safety culture nor ensuring that risks are reduced to a level that is considered ALARP. At best, the workforce will be 'going through the motions' and doing the minimum required for their job. Hence, they are unlikely to be proactive with regard to ensuring that process safety is at the forefront of the workforce as a whole. It is recognised that the top performers with regard to process safety and managing risk are those that have a proactive workforce that considers the risk to safety for every action and task as the top priority.

At worst, an employee may sabotage operations following the acquisition, and depending upon the level of sabotage, this could lead to a major accident.

On a positive note, some organisations have benefitted by taking the best of the heritage technologies and systems that they have acquired. As noted above on the SMS, it is possible that culture / awareness / maturity may be higher in the acquired company and that the post-merger organisation can (and should) learn from the acquired business. An example of this is an organisation's recognition of Human Factors, which is an area often highlighted by the UK HSE. Whilst some organisation's pay scant attention to Human Factors, others may have developed this area in great deal. If the target organisation has a more sophisticated approach to Human Factors, this should be recognised as part of the integration process, and not left behind, which is a real danger if the acquirer simply moves forward without recognition of the target's SMS.

#### **Corporate Memory**

One of the major dangers post-merger is the loss of what is referred to as corporate memory, in most organisations this rests in the heads of those who have been in the company for many years. Most companies have not, as yet, found robust means of harvesting that memory and making it accessible to others using what are referred to as knowledge management systems. The laying-off of personnel, typically driven by the need to demonstrate to stakeholders that promised efficiency improvements are quickly realised to provide a return on investment can cause a haemorrhage of such corporate memory. Some of this is likely to be PSM related, or in the case of EHS functions significant site wide understanding and memory.

There may be other personnel in the acquired organisation where there are similar roles in the parent company who are identified as being potentially vulnerable. Whilst it is common and generally considered good practice to move personnel from the parent company into the acquired company for collaboration of the two, this can add to the departure of experienced and knowledgeable personnel from the acquired organisation.

Where personnel from the acquired company are laid-off there is a risk that they will be taking with them many years of experience that cannot be readily replaced. Voluntary redundancy programmes in acquired companies are common and in many cases it is those who are approaching retirement age and who may have relatively high salaries that take up this option. Whilst the departure of these personnel may appear 'attractive' on a spreadsheet from an accountant's perspective, the reality of the situation may be the exact opposite and could result in having key knowledge (both of the plant and its operation and how the company actually works (which is never 100% aligned with documented management systems)). Such an outcome is not conducive to the effective management of risk.

Hence, there is the need for processes such as combined skills matrices, a consistent competency assurance of personnel and succession planning to ensure that the required skills are retained throughout the organisation.

### **Use of Process Safety Performance Indicators**

The streamlining of PSPIs between companies that have recently merged is one good mechanism to achieve consistency across the developing organisation. There may be a potential issue if the two merging organisations are at different stages of performance – one may have advanced systems / performance the other less so – accelerating one and decelerating the other can cause risks.

Companies should set targets and include performance against leading and lagging PSPIs during and after the integration process. Although there is the potential to create conflict for the merged organisation, the benefits of this outweighs the risk by creating a consistent approach to reporting in the process of bringing personnel in the wider organisation closer together, with the objective of improving safety performance. There is a need to be careful about targets for lagging indicators as that can influence reporting, and there is always the danger of inconsistency, although this has the potential to encourage collaboration across the organisation.

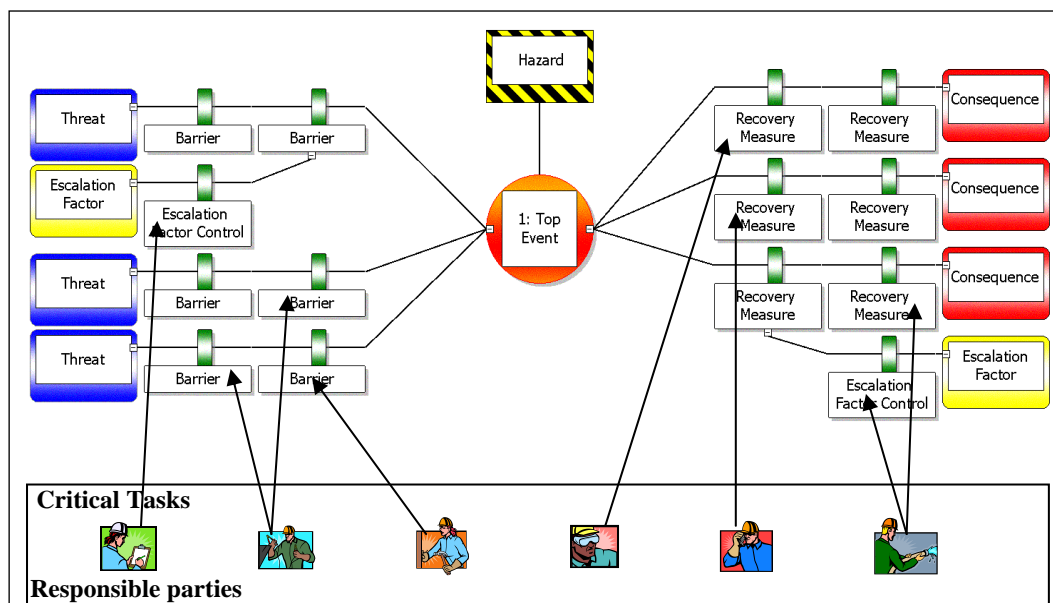
### **Communication**

Effective communication with the workforce of the acquired company is an essential part of securing the buy in to and adoption of changes that are introduced, and it is common for a communication plan to be developed for PMI, and part of this should explicitly include how the existing approach to PSM is to change, why and when this is will happen. As with any well structured communication plan there needs to be the opportunity for dialogue with the workforce, and an readiness to listen to how and why certain things are conducted the way they are. This input should not be ignored and how the same or an improved outcome can be achieved in any changes that are to be made should be communicated (and demonstrated once the changes are in place). But, as with all aspects of PSM, there is little room for pride or dogma, and if it is realised that the acquired company has elements of PSM that are more effective at managing risk, these should not be changed and the acquiring company should look at whether they can adopt what is demonstrated to be best practice within the combined company.

Communication with the executive team is vital, and it should be a priority to show where there are weaknesses / deficiencies or simple misalignment in approaches. This is where auditing can play a key part following the integration. An independent auditor would be able to investigate and hopefully define where there are divergences between merged organisation, both major and minor, and most importantly where these divergence could potentially led to major accidents if the divergence were to continue after integration of the systems.

Bowties can be a very effective method of communicating PSM related issues and during PMI they can be used to highlight the differences in approach, by comparing how effective barriers are in preventing top events. Where one organisation may consider including problems determined during inspections as CM, the other may considered this as preventative maintenance PM. It could be that the ratios of PM to CM are similar when looked at on a spreadsheet and this may present the executive team with comfort that the maintenance system will work well going forward. However, this may be hiding an underlying problem if the processes for determining PM and CM are not the same, and a consistent approach would actually show a significant deviation in results.

Figure 2 – Example of a Bowtie



## PSM Implementation Plan

As part of the PMI, findings from the DD should be retained and build on to create a more robust SMS, as the organisations become integrated. A PSM implementation plan should deal with, for example:

- Prioritising due diligence findings and developing a corrective action plan.
- Gap analysis against (and alignment with) the Company's existing PSM Standard.
- Revalidating PHAs and confirming the basis of safety.
- Confirming the completeness of process safety information.
- Confirming / improving operating procedures, where necessary.
- Confirming criticality studies (e.g. SCE properly identified?)
- Aligning inspection and maintenance philosophies.
- etc.

It is the experience of ERM that companies often talk about developing a "100 day plan" (or similar) following the acquisition. However, there are 2 distinct phases of auditing here:

1. A round of audits fairly soon after acquisition. These are "deep dive audits" to confirm and build upon the findings of the DD. These may be similar in scope to the DD audits carried out, but are likely to involve more detailed site visits and Q&A sessions with a range of personnel from top to bottom of the organisation. These audits are intended to identify the root causes of problems in the organisation, i.e. weaknesses in the SMS, and will help build the "100 day plan" to address these.
2. Ultimately, all sites should be incorporated into the Company's PSM audit programme, which will ensure that the sites conform to the overall Company SMS. The audit programme should include where the target organisation may have a more mature and sophisticated PSM system / culture in place, and the Company SMS may incorporate these good / best practices into its updated structure. As well as identifying weakness to the Company SMS, the audit programme will determine where the sites are diverging from this, thereby resulting in potential non-conformities which essentially increase the risk of having a major accident.

A leading reference for PMI is that by the CCPS (2010), which refers to two key themes:

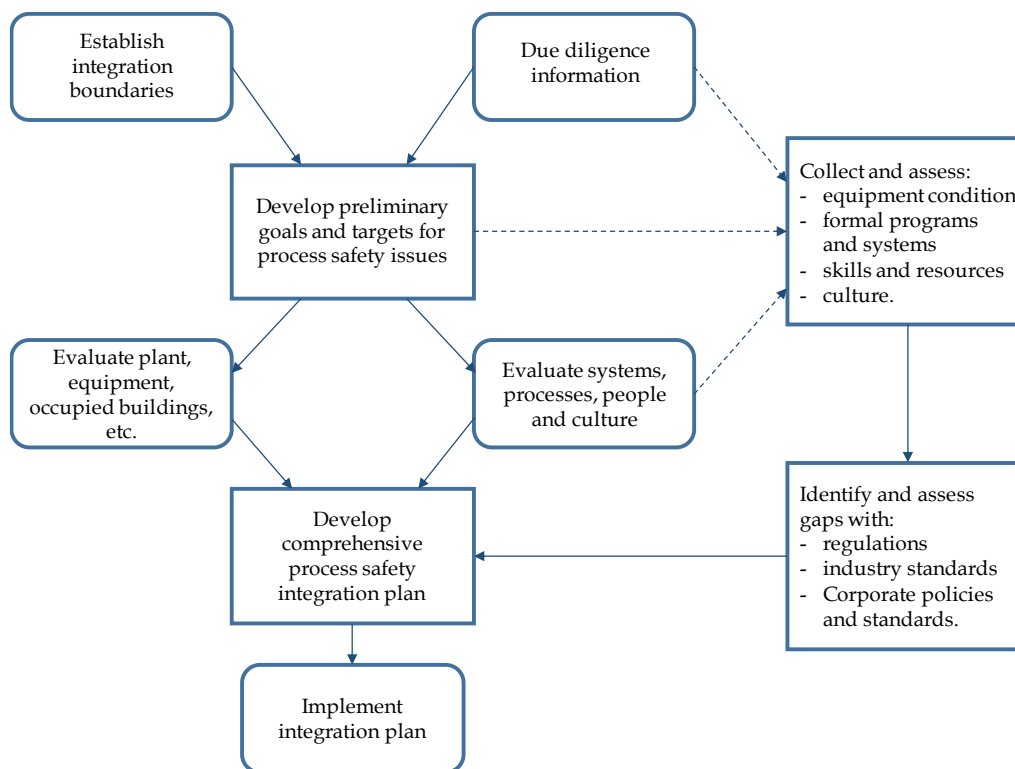
- Developing the Integration Plan
- Implementing the Integration Plan

### Developing the Integration Plan

Developing the Integration Plan starts with establishing an understanding and mutual agreement with senior and executive management on the boundaries that will surround the future operation of the newly acquired and combined businesses (i.e. the overall integration strategy). From there it continues to identify gaps and culminates in the development of a plan for addressing

all such gaps. This is illustrated in Figure 3 shown in the CCPS Guidelines for Process Safety Acquisition Evaluation and Post Merger Integration (CCPS, 2010).

**Figure 3 – Overview of the Integration Process (CCPS, 2010)**



### Implementing the Integration Plan

Integrating or merging the SMS that a newly acquired organisation has developed to manage process safety issues with those of a new 'parent' company involves change. Personnel from the newly acquired assets may see this as a major change or unnecessary change and are likely to resist. A study of change programs instituted in large organisations by KPMG found that 80% of all such change efforts failed to meet the expectations originally established by senior management (CCPS, 2010).

While the integration process may involve modifying equipment or changes to the formal written management systems, all of that work will be conducted through the efforts of various individuals. As so much of the change then involves people, it is vital any integration process addresses the need to shift cultures and the behaviours of people (CCPS, 2010).

Hence, this must be part of the Company's PSM audit programme as the organisation moves forward to integrate the PSM processes, and ultimately the overall SMS.

### Practical Auditing

When carrying out PSM audits it is advisable to ensure that this is a practical exercise to determine where there is divergence between organisations and where there are potential weaknesses that could lead to a major accident.

The list below includes examples of specific issues / problems to look for when carrying out a PSM audit, or similar. These are potential issues that should be the subject for following up with the site operator as agenda items when discussing the effectiveness of the SMS, i.e. if the SMS is working well, why are these issues occurring?

Fortunately, major hazard events are rare, and if an organisation knew they were going to happen then they would have the opportunity to do something to prevent them before they occurred. The following issues are examples of issues that may not result in a major hazard event, but they are tell-tale signs that things aren't right with the SMS and that there is a risk of a major hazard event occurring in the future.

- No end caps: This is a classic issue that is often found at sites. There should always be two points of isolation between the process and the atmosphere, e.g. on a drain valve a cap should be in place downstream of the closed valve. If caps / blind flanges are left off, ask why - not just poor operational practice, but what is the root cause, e.g. lack of training?
- Leaking pumps: Problems with the seals may result a small leak that is captured in the secondary containment'. However, pumps should be on a preventative maintenance programme and not leak. Leaving it means it may become more critical, e.g. leading to a catastrophic seal failure.

- Vibrations: Lines should not vibrate. If there is vibration then this will cause a weakness and vibration is a key failure mechanisms. Some sites have put bellows / expansion joints when connecting lines to equipment in the past, and these joints have failed, i.e. it is not a good solution.
- Missing lagging: This is often to be seen at facilities, where lagging has been removed for inspections, for example, and not replaced. This can be a major loss of heat, as heat will find the path of least resistance.
- Unprotected pipework: There should always be protection around pipework where there is moving machinery such as fork lift trucks. External impact is a major reason for failures, and thus protection must be in place.
- Dents: Tanks, vessels, reactors and pipework should be free from dents and these cause a weakness in the integrity. The dent may also be a nucleus for corrosion, so there is the potential for a double weakness.
- Corrosion: This can be misleading, i.e. superficial, where there is little or no loss from the wall thickness. However, external corrosion should not be present in best practice and steel should be protected by painting, if there is no stainless steel piping / equipment or CRA. If there is such corrosion on tanks, vessels, equipment and pipework, this should be noted and discussed. Look out for gate / globe valves where there is extensive corrosion and it may be the case that the valve cannot be moved, particularly valves on small bore pipework.
- Weeping joints: There should never be leaks, but this may be seen from valve stems and flanges / gaskets, particularly where the process fluid is corrosive. The author was once on an HF alkylation unit where three pinhole leaks of HF from flanges and valve stems were noticed.
- Missing bolts on flanges / short bolting: Flanges are designed for the correct number of bolts for the joint. You will often see four bolts where there should be eight. This may be because the flanged joint is on piping designed for low pressure, but this needs to be established. Flanges are designed so that the entire nut-bolt connection holds the forces on the flange. If the nut is not correctly screwed onto the bolt, the connection may not be strong enough to prevent leakage in all potential operating conditions. In order for the full strength of a nut to be realised, it is important that stud bolts are installed so that the head of the bolt is at least level with the face of the nut and ideally the thread protrudes through the nut by at least one third of the bolt diameter.
- Occupied buildings: One of the key findings in many M&A projects conducted by ERM is that there are a significant number of occupied buildings close to or even within process areas of the target company, in conflict with practices such as API 752 (2009), API 753 (2007) and the Chemical Industries Association (CIA, 2010).

ERM has developed an approach and protocol that gives these and other examples of issues / concerns to look for when undertaking a site visit. These can then be used as part of the agenda when questioning management about the SMS and how these may be demonstrating weaknesses in one or multiple parts of the system.

## Discussion

Many organisations now include PSM as part of the DD when carrying out a merger or acquisition. The environmental agenda, which was particularly focused on contaminated land, is often expanded to include health & safety and PSM. Whilst this has meant that weaknesses in the SMS are raised as part the DD process, this does not guarantee that these weaknesses will be addressed during the PMI, and it may be that the weaknesses identified are simply part of negotiating the overall costs.

Hence, it is considered vital that PSM is considered during PMI to reduce the risk of a major accident to as low as reasonably practicable (ALARP). This may be conducted as part of an audit of the both sides of the merger or acquisition, to establish gaps in the SMS, to establish best practices within the overall organisation, and to establish where there are key weaknesses that may eventually manifest in a major accident.

The PSM auditing programme following a merger or acquisition should include: (1) a round of PSM audits fairly soon after merger / acquisition, as “deep dive audits” to confirm and build upon the findings of the DD; (2) all sites being incorporated into the Company’s PSM audit programme. This is to ensure that the various sites weaknesses to the SMS are revealed and addressed, that the sites conform to the overall Company SMS, and that the sites perform consistently across the organisation. Ultimately, the goal of the PSM auditing programme as part of the PMI process is to reduce the risk of accidents, avoid major injuries, loss of life and damage to the environment, to protect assets and decrease business interruption, and to ensure profitability of the organisation.

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