

# FIVE REASONS WHY SAFETY MANAGEMENT SYSTEMS DON'T WORK

Susan Johnston, BA  
ACIL Consulting

## SUMMARY

In recent times many sites have introduced documented Safety and Health Management Systems. Those that have not, will soon be required to do so under new Queensland safety and health legislation. Safety and Health Management Systems can provide a framework for impressive and substantial improvements in safety performance.

However, this is not always the case.

This paper draws lessons from the author's own experience in reviewing safety management at minesites around the country, and from several well known serious accidents, to put forward five reasons why Safety and Health Management Systems can fail to deliver their intended results.

The paper concludes by outlining steps which can be taken to ensure that minesites do get the most out of the considerable time, and expenditure, which can be involved in the introduction of a Safety and Health Management System.

## INTRODUCTION

It makes sense. Introduce a documented, structured way in which your safety risks can be identified, quantified, and controlled. Provide a framework which helps you to choose your safety management priorities, and the actions which are most likely to lead you to continuous safety improvement. In short, buy, develop, or modify a site Safety and Health Management System.

Many Australian minesites now have such systems. Others are in the process of introducing them. Having a Safety and Health Management System (SHMS) has become de rigueur.

More than this, with the passing of the new Coal Mining Safety and Health Bill and the Mining and Quarrying Safety and Health Bill, having a defined, documented SHMS will now become a specific legal requirement placed on all Queensland mining operators. Each mine will need to have a SHMS which "ensures that

risk is managed so that the safety and health of persons who may be affected by the operation is at an acceptable level".

Over the past few years the firm which I work for, ACIL Consulting, has regularly been called on to assess the effectiveness of safety management at minesites. In many cases, these sites have had SHMS which were described by corporate management as being 'in-place'. A significant part of the work which we have done has been to assess the degree to which those systems were actually fostering significant, sustained improvement in safety performance onsite.

As might be hoped, we've been able to track through some important safety benefits which have been achieved through the effective introduction of SHMS at many sites. But we have also seen a number of instances where the site's SHMS is clearly not working in the way in which the system's providers, and company Senior Executives would expect.

This paper draws on our experiences in reviewing the impact of SHMS, and on lessons from some well known serious accidents, to put forward 5 key reasons why, in certain circumstances, SHMS do not achieve their intended results.

It is worth noting that none of these reasons constitute an argument against the introduction of site SHMS. Rather, they are intended to draw attention to issues, which, if they are not adequately addressed, have the potential to seriously undermine the present wave of effort and investment in SHMS.

## FAILING TO DEAL WITH THE UNDERLYING ISSUES

Not so long ago we conducted a safety review at Site A. Site A had a documented SHMS. There was, in our view, nothing intrinsically 'wrong' or 'deficient' about this system. It looked good, it read well, but it clearly wasn't being implemented as planned, or producing the desired results, at site A.

Why?

Essentially, in this case the new SHMS had been introduced over the top of some fundamental problems which were having a

strongly negative impact on safety performance at Site A.

The Site was under extreme external pressure. A combination of low commodity prices, high management turnover rates, a constant stream of new requirements from head office, contractual disputes, and unresolved mine planning issues, meant that site management were operating in perpetual crisis mode.

On top of all this, about 12 months prior to our visit, the site had received an instruction to introduce a SHMS.

Site management took this instruction seriously, drew up some new procedures associated with the SHMS, and spent time explaining these requirements to mineworkers.

Having made this investment in the development and initial implementation of the SHMS, the effort then essentially died. What went wrong?

Site management simply did not have enough time to focus on ensuring that the system was fully implemented, let alone to conduct any form of regular review of its impact or appropriateness.

In practice, coping with the various outside pressures sometimes meant that key stated elements of the SHMS were not adhered to.

Not surprisingly then, mineworkers we spoke with saw the new system as 'a bit of a joke', 'window dressing', 'something to keep the guys in corporate happy', and 'not something we actually do'.

Workers commonly indicated that they knew the mine was under pressure, that they felt obliged to push for tonnes in order to keep their jobs, and that they believed that flouting a safety procedure was far less likely to be a cause for concern in the current environment, than falling short of quotas was likely to be.

Clearly Site A had some fundamental underlying management issues which needed to be addressed before any new safety initiative could be expected to produce sustainable results.

Site A's circumstances, while extreme, are not unique.

During our reviews of safety management we have encountered a number of sites whose

stated safety management efforts are being undermined by unresolved, underlying, issues.

One stand-out example of this was Site B. This site had a highly developed SHMS which had been devised with significant workforce involvement. The SHMS appeared to be well structured, comprehensive, and clear. When interviewed, most employees from most areas of Site B could readily identify their own safety management responsibilities under the SHMS, and indicated that they believed that the overall system was functioning effectively.

However there was one notable pocket of dissent. Almost all mineworkers and supervisors from one particular area of the site expressed cynicism, and bitterness when asked to describe the implementation and impact of the SHMS. After some probing we were told that longstanding complaints about the unsafe behaviour of a particular manager from that area were seen as having been dismissed by the operating company. When the new SHMS was introduced, so too were certain new safety procedures. The manager in question had also allegedly flouted some of these procedures not long after their introduction, and was continuing to do so. Our interviewees saw the managers' alleged behaviour as a fundamental safety issue which had been glossed over by the company. The introduction of the new SHMS in this environment was viewed as something of a farce, given the apparent failure of the company to hold the manager to account for his non-compliance with elements of the SHMS. In another example, Site C had received corporate instructions to introduce an "off the shelf" safety management system. Site management were enthusiastic about the potential of the system to provide a formal framework for a number of the safety activities which they were already engaged in. They saw the system as providing an additional degree of structure, rigour and comprehensiveness to their efforts.

Given their very positive views site management were surprised to find that elements of the site's workforce were strongly resistant to the introduction of new requirements, notwithstanding how sensible they appeared to be.

We visited this site not long after the new system had been introduced.

In spending time at the site it soon became apparent that a large proportion of the site's

workforce felt alienated by what they saw as management's failure to remedy several longstanding safety hazards. Workers had been injured in the past as a result of these hazards. However, it appeared to the workforce that very little had been done to ensure that the hazards were removed, or reduced. Additionally the site's rescue team was being asked to train on rostered days off for no additional remuneration, and with, allegedly, minimal management recognition. Workers saw these circumstances as an indication of management's failure to take safety issues seriously. In such a climate a new 'system' was never likely to be well received. Whatever the rights or wrongs of the situation, site management clearly needed to deal with these underlying issues prior to attempting to sell new approaches to their workforce.

Students of safety management literature will be familiar with the works of Professor James Reason of the University of Manchester. Reason argues that "the accident sequence begins with the negative consequences of organisational processes (i.e. decisions concerned with planning, scheduling .... communicating) .... [then] the latent failures so created are transmitted along various organisational and developmental pathways to the workplace where they create the local conditions that promote the commission of errors and violations (eg. high workload, deficient tools and equipment, time pressure, fatigue, low morale, conflicts between organisational and workgroup norms, and the like)"<sup>iii</sup>.

Reason's approach, and our own practical experience, would suggest that unless the conditions which cause latent failures are recognised and responded to, the positive impact of any SHMS will be reduced.

### **A POINT SCORING EXERCISE**

Safety and Health Management Systems provide a framework for auditing of a site's safety management efforts. Sites can be compared with others in the same company and outside. Audit results can be used as a continuous improvement tool. Performance over time at individual sites can be assessed to identify performance trends and ensure that desired outcomes continue to be achieved.

Audits of the implementation of SHMS commonly produce numeric scores for key elements of the system and/or for the system

as a whole; as well as a whole range of improvement suggestions for the site.

Care needs to be taken to ensure that management attention is focussed on the issues which have been highlighted by an audit, and on the rate at which these issues are addressed, rather than simply on the scores themselves.

A narrow focus on scores is dangerous because:

- under some systems it is possible for a site to post a reasonable overall score whilst scoring poorly in an area which may be critical to that site's management of its core safety risks;
- it may push site management to focus on those aspects of the system wherein the most rapid increase in scores is likely to be obtained, rather than on those areas which are most critical to the achievement of sustained site safety improvement;
- given that some systems focus strongly on documentation it may be possible to score far better than real circumstances would warrant 'so long as the paperwork is done' and
- audit scores – in themselves - rarely provide any reflection of the extent to which latent safety management failures exist onsite.

Nonetheless our interactions with mine managers and supervisors suggest that a focus on the audit scores, and not on the issues which underlie them, is an emerging reality at some sites.

The following quotes illustrate the potential negative consequences of this approach:

*"Corporate Safety presents the scores ranking to the Board and this gives an incentive to people to manage the measure. There's a need to focus the Board's attention on what the reports say, rather than the score which is achieved"...*[Manager]

*The System "is not being used to its full potential across the sites – there is too much weight on points. We could have picked up points by our paper systems..."* [Safety Professional]

*"I have a....target in my salary review, most increased score year on year. This doesn't lead to focus on the most important areas for improvement."* [Manager].

The point here is not that audits shouldn't include scores, nor that senior executives shouldn't be influenced by these scores, but that in order to form an accurate view of the status of safety management at a particular site it is necessary to go beyond the audit score to the issues identified, and to the extent to which these can be resolved.

Unfortunately, over the past few years, we have encountered real examples of situations where a narrow focus on overall scores has translated into poorly prioritised effort and missed opportunities for genuine safety improvement.

### **"YOU'D HAVE TO BE A PHILADELPHIA LAWYER"**

Safety commentators; the purveyors of proprietary safety systems; mines departments throughout the country; company executives; mine managers; mining unions; and mineworkers agree that active workforce involvement is an essential component in the effective implementation of any SHMS. The new Queensland legislation requires site management to consult with mineworkers in the development and review of site SHMSs.

Given the general stated recognition of the value to be gained through employee involvement, it is unfortunate that one of the factors which is undermining safety management at some operations is limited employee understanding of key elements of the site SHMS.

We would argue that there are two major reasons for this:

- the unnecessary complexity of some SHMS; and
- limited, or less than effective communication of the SHMS to the site workforce.

SHMS by their very nature are meant to provide a comprehensive framework for the identification and management of safety risks. They encompass a wide range of safety related activities – some of them with a significant technical component. The potential

for complexity, and for employee bewilderment is clear.

Over the past few years ACIL has visited a number of sites where management desire to ensure that the safety system is all encompassing, has inadvertently resulted in a situation where key elements of this system have become so cumbersome that they are not actually being used by the site workforce.

There are so many Safe Working Procedures, each containing so much detail, at some sites, that they have long ago stopped being practical reference points, and have become dusty tomes sitting on the safety adviser's shelf.

In some cases procedures developed by a committee have taken on a camel-like shape. Again this has generally occurred with the best of intentions, but what it has meant is that the final outcome is completely divorced from the original management intent. Documents which were supposed to make safe working easier, can themselves contribute to confusion and stress.

Witness the following comments from interviewees at two of the sites we visited:

*"Our Safe Working Procedures tend to be a hotch potch of ideas. They are not readable and the guys can't comprehend them at all. Its lots of paper and lots of people don't know what's in the procedures.....No one wants to look at 5 or 6 pages of a bland document"* [Professional Staff].

*Workers "have to be Philadelphia lawyers – they're too complex. [I've] got two blokes underground who can't read and 5 – 10 who have difficulty in reading basic literature".* [Foreman].

Paradoxically some of the very sites with extensive Safe Working Procedures are the same ones where mineworkers indicate that the Procedures are out of date, or unreflective of actual mine practice. The documents have become so complicated that keeping them fresh and relevant is a practically impossible task.

The recent Longford Royal Commission pinpointed a combination of system complexity, and lack of current operating procedures as factors in the fatal accident which occurred at the Longford Gas Plant on 25 September 1998.

The site's documented safety management system was described by the Commission as follows:

"It was repetitive, circular and contained unnecessary cross referencing. Much its language was impenetrable. These characteristics made the system difficult to comprehend by both management and by operations personnel". "At the same time the Commissioners found that there "were no current operating procedures to guide [operators] in dealing with the problem which they encountered on 25 September 1998"<sup>iv</sup>.

The Commissioners went on to recommend that "Esso should be required to show that written procedures are readily available to operators to enable them to respond to deviations from normal process conditions and that its management systems are expressed in a readily understandable form."<sup>v</sup>

Employee lack of understanding of key elements of a site SHMS can sometimes also be traced back to poorly devised and targeted communication of those elements.

Sometimes this is a problem of omission. Mineworkers have simply not received adequate information in relation to the SHMS and their own responsibilities under it.

Sometimes training has been conducted but the site has not actually retention tested the employees to determine the extent to which they have retained critical knowledge.

Sometimes there has been extensive training and information sharing but this has been pitched in such a way as to make it difficult for employees to effectively absorb. Excess use of technical language – particularly when training is provided by engineers! – has been raised as an issue at a number of sites.

Sometimes employees have been given way too much information - only some of which is actually relevant to the requirements of their own particular job.

Sometimes the training and information sharing approaches taken have not taken sufficient account of the language and literacy issues which impact on the ability of some members of the site workforce to comprehend the matters being discussed.

Effective communication is not as easy as it sounds. The key, from a safety management

point of view is for site and corporate management to be willing to test the extent to which their communication efforts are producing the desired results, and to be willing to take positive action if deficiencies are found.

The Longford Commission also found that a lack of necessary knowledge on the part of both operators and supervisors was the "ultimate cause of the accident on 25 September"<sup>vi</sup>. This lack of knowledge "was directly attributable to a deficiency in their initial or subsequent training"<sup>vii</sup>. The Commission recommended that "an obligation should be imposed upon Esso to demonstrate that its training programmes and techniques impart knowledge of all identifiable hazards and the procedures required to deal with them. Not only should Esso be required to demonstrate that the necessary knowledge is imparted, but also that it is retained for use in an emergency"<sup>viii</sup>.

### **THE SYSTEM IS NOT THE ANSWER**

Theoretically we all know that simple introduction of a systematic approach to safety management will not of itself guarantee effective control of key safety risks. Theoretically we all understand that a formal documented system needs to be accompanied by corporate and site leadership, employee involvement, adequate resourcing, a commitment to address major issues as identified, and a philosophy of continuous improvement. We hold "these truths to be self-evident" as the fathers of the American Declaration of Independence would say.

It is surprising therefore how often a senior executive, manager, or safety professional will respond to a question like:

"What gives you confidence that core risks at this site are effectively controlled?"

with an answer like:

"well we've introduced System X".

Or this quote, from a Senior Company Executive:

"We had a behavioural safety problem but now we've introduced the X Program".

Safety management systems will fail to produce their desired results if they are seen as a panacea for all safety related problems at a mine.

Systems of themselves **guarantee** nothing. They are very useful frameworks for management and employee activity and commitment – not a substitute for this.

### ***I THINK, THEREFORE IT IS.***

A thorough going, probing review of safety management at a site will inevitably find that some elements of the site or corporate approach are not working as effectively as they should be.

As the reviewer, it is your task to highlight these areas of deficiency, to seek feedback on them from relevant site personnel, and to go on to present carefully argued conclusions and recommendations.

What happens then is up to the company executive or site management who commissioned the review in the first place.

I should say here that in the main ACIL has been blessed with clients who whilst more than happy to argue with particular findings as necessary, have in general seen the identification of safety management deficiencies to be a positive improvement opportunity for the site/company.

Unfortunately we, and others, have also encountered circumstances where the immediate response to a negative finding is one of hostility and defensiveness. In some cases people simply cannot believe that the circumstances as described really reflect what is taking place at their sites. This is a problem more commonly found at a senior executive level, than at the level of departmental managers, supervisors, or mineworkers. At this senior executive level individuals have often expended considerable personal energy in stressing to their organisation the importance of a commitment to safety, and of specific implementation of a particular system. They have given instructions in this regard. They want those instructions to bear fruit. Indeed, they positively demand that they do.

Some senior executives seem almost to be striving for an 'Action Man' appellation. Their, entirely well intentioned, focus is on introducing as many new initiatives as possible, with as much fanfare as possible, rather than on assessing whether existing initiatives are working.

In this environment it is perhaps also not surprising that individuals lower down the

hierarchy can be unwilling to point out that implementation of a plan or program is not quite as easy as it sounds, or to highlight potential problem areas. An informal, sometimes unconscious filtering of information can occur.

Courtiers can be quite unwilling to tell the Emperor that his 'new clothes' are no clothes at all.

Without continued, probing, questioning from the Senior Executive it is quite possible for an erroneous impression of reality to be formed. (As was the case, for example, with respect to Piper Alpha where senior management "were too easily satisfied that the permit to work system was being operated correctly, relying on the absence of feedback of problems as indicating that all was well.")<sup>x</sup>

In these circumstances, it can be tough for a Senior Executive to take an open minded view of reports which argue that all is not as it seems. It is, however essential that they do so, if safety management systems are to deliver all of their intended outcomes. Without the courage to confront unpalatable messages, misconceptions about how well a system is working will lead to misdirections of effort, and missed opportunities for sustained safety improvement.

### **CONCLUSION**

#### **So how can we improve the chances that Safety and Health Management Systems will deliver the desired results?**

- Prepare the foundation carefully. By addressing any pre-existing problems and issues, or at least recognising that they exist and managing their potential impacts, the chances of establishing program credibility, acceptance and workforce commitment will be greatly improved;
- Prioritise effectively. Monitoring of program effectiveness should focus on identifying priority areas for improvement and dealing with them. Excessive focus on "scores" is likely to be counter-productive and may obscure the real issues.
- Keep it simple. In setting up standards and procedures, remember that more is not necessarily better.
- Follow through effectively. Remember that having a SHMS in place is a starting point,

not an end point; it is a necessary but not a sufficient condition for effective safety performance.

- As a manager, never accept that no news is good news. No news is no news – nothing more. Make it your business to find out what's really going on. By asking probing questions and showing genuine, open-minded interest, you are less likely to be confronted with nasty surprises down the track.

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<sup>i</sup> Queensland Department of Mines and Energy and Queensland Mining Council "Safety and Health Management for Queensland Mines and Quarries", Information Paper, p14.

<sup>ii</sup> James Reason, "A systems approach to organisational error," Ergonomics, 1995 Vol. 38, No. 8, pp1710 – 1711.

<sup>iii</sup> "Report of the Longford Royal Commission – "The Esso Longford Gas Plant Accident"", p200.

<sup>iv</sup> Ibid, p234.

<sup>v</sup> Ibid, p240

<sup>vi</sup> Ibid p236

<sup>vii</sup> Ibid p234

<sup>viii</sup> Ibid, p240.

<sup>ix</sup> The Hon. Lord Cullen, The Public Inquiry into the Piper Alpha Disaster, October 1990, p3.