

Workforce involvement

David Pennie, *Senior Consultant, Greenstreet Berman*, outlines the benefits of involving workers more effectively in process safety and in the overall management of health and safety risk.

The Texas City refinery tragedy in March 2005 was a stark reminder of the risks faced in the energy sector. A key finding by the Baker Report which investigated the incident was that the need to improve process safety management systems and empower workers, stating that '... Texas City, has not established a positive, trusting, and open environment with effective lines of communication between management and the workforce.'¹

One way to achieve this is to involve workers better in process safety hazard analysis and risk assessments. This can also help workers learn more about the site and contribute to improving design and operability. Indeed, there is a growing belief that there are significant benefits to be derived from involving workers more effectively in process safety and in the overall management of health and safety risk. According to HSE: 'Involving workers in health and safety leads to healthier and safer workplaces and produces a range of benefits for workers and managers.'²

This view is shared by many other similarly respected organisations, including the Energy Institute, and is based on evidence from research and direct reporting from industry. For example, one organisation in the high hazard industry reported that increasing workforce involvement (WFI) was associated with a 50% reduction in reportable accidents.³

It makes sense to involve workers more in health and safety because they have direct experience of unsafe conditions and how it affects their job. They also have good ideas of how safety might be improved. In addition:

- Workers involved in the development and review of policies and procedures have an interest in maintaining the rules they have helped to develop, and are more likely to support and comply with them.
- Involvement highlights that everyone is responsible for safety, which in turn can mean individuals start to take greater responsibility for the health and safety of themselves and colleagues.
- Working together can increase

understanding and trust across an organisation.

- Decision making is better because, by involving workers, managers become more informed about the issues affecting their business.

There is considerable research that demonstrates the value in increased WFI, but also evidence that it is not always straightforward. There can be many barriers to involvement, including cultural issues and the perceived complexity of health and safety and the time and resources it takes to involve workers (time away from work). The petroleum and allied industries also face additional barriers to involvement, such as the frequent use of contractors.

There are also often sensitive issues that need to be understood and handled carefully. Distrust, lack of motivation, inability and/or unwillingness to participate will all inhibit involvement. Management, in particular, must be prepared to adapt their behaviour and working methods accordingly if they want to encourage more WFI.

When managers try to increase involvement there may be a temptation to stick to the obvious areas and select where they believe involvement will be



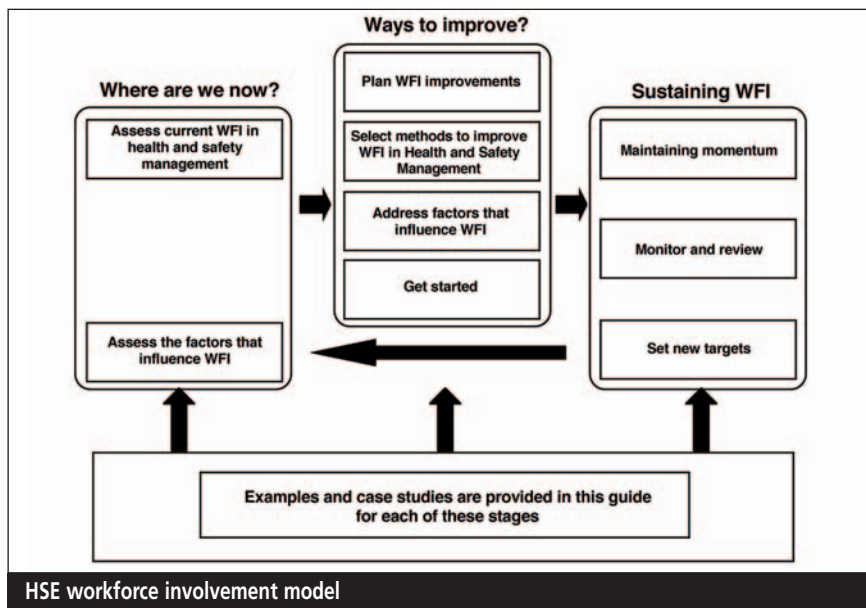
The Energy Institute recently published guidance on workforce involvement, available to download for free from www.energyinst.org.uk/humanfactors/wfi

most effective – for example, modifying unsafe behaviours. This piecemeal approach can mean, however, that areas where involvement would bring most benefit are not identified and there is a failure to draw on the valuable experience of workers to improve process safety. If involvement programmes are not planned properly, initiatives can run out of steam before reaching a satisfactory conclusion or, even worse, compound mistrust.

Evidence also suggests that there is a risk in attempting to engage with workers and not following through with changes to the workplace or communicating outcomes effectively. This can have a negative impact on workers' attitudes, making them reluctant to participate in the future.

The best way to achieve successful

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and other factors, using different combinations of standards and degrees of rounding, (two decimal places, three decimal places, or floating) – this leads to over 80 possible permutations for custody transfer calculation. The calculated energy values based on permutation extremes have significant differences.

Furthermore, there is a basic assumption that the compositional data is true.

Non conformance to standards or to manufacturer's recommendations has resulted in a lack of confidence in many sampling systems.

Our observations of compositional data arising from intermittent sampling systems show that sampling systems are not consistently following ISO 8943.

Those systems following the standard exhibit good reliability of results and have minor variance between high and low values of each individual component. However, sampling systems which do not follow the standard and/or have design flaws show considerable variance between high and low component values. For example, we have seen as much as a 5% fluctuation in methane content.

Witnessed analyses over a three-year period can show high and low spread of methane content exceeding 3%. Where a step change and/or anomalous results can be discarded, this level of fluctuation from a calculated mean can be lowered to around 0.75%. This level of loss/gain would not be acceptable for a traditional

petroleum cargo. Depending on whether you are the buyer or seller the potential loss/gain level is around \$139,800 per 138,000 cm cargo delivery – considerable, especially so in long-term contracts with a high frequency of cargo delivery. Indeed, for a 20-year contract covering one delivery per month, the potential losses are in excess of \$30mn. ●

References

- ISO 8943 *Refrigerated light hydrocarbon fluids – Sampling of liquefied natural gas – Continuous and intermittent methods*.
AGA Transmission Measurement Committee Report No 5, 2007, *Fuel Gas. Energy Metering*.
LNG Custody Transfer Handbook (CTH), GIIGNL, 2001.

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associated benefits to company brand value and reputation will far outweigh these costs.

Cases in point

The impacts of the two approaches can be seen within a single company. In 2006, Shell faced militant explosions of pipelines and kidnapping of oil workers in Nigeria. Accusations against the company included reneging on promises for development projects to compensate local communities. Compare this to the Malampaya gas-to-power project (a joint venture between Shell, ChevronTexaco and Philippine

National Oil Company) which, according to the same WRI Report, integrated many principles of FPIC and resulted in broad consent and significant cost savings.

Looking forward, integration of community consent as a requirement for new investments represents a necessary step-change in our approach to community engagement. Overcoming our preconceptions and successfully implementing the principles of FPIC promises to benefit companies, governments and communities alike. Those companies that fail to progress along these lines may find themselves increasingly isolated and vilified

as examples of corporate greed and abuse. ●

1. World Resources Institute, 2007, *Development without conflict: The business case for community consent*.

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The best way to achieve successful involvement of workers is to be systematic and plan your approach. Being committed and taking the time and trouble to understand the best areas to improve involvement and the barriers that might prevent this from happening is more likely to lead to successful outcomes.

The advantages of workforce involvement, weighed against the potential pitfalls make a strong case for the provision of practical advice, to help both managers and workers.

Guidance at hand

The Energy Institute has recently published guidance, available to download for free, that provides:

- an explanation of what WFI is,
- a summary of the legal requirements for workforce consultation,
- a discussion of the benefits and the barriers that can prevent successful involvement, and
- advice on how to improve the effectiveness of WFI and a number of

guiding principles.

Importantly, the guidance provides a simple three-step approach to ensure that efforts to improve WFI are more likely to succeed:

- Assess levels of WFI and identify the enablers and barriers to involvement.
- Consider examples of activities to help improve WFI and then use these in your own workplace.
- Ensure that workforce involvement is sustained and continues to lead to business improvements.

This guidance is designed for everyone who wants to find out more about WFI and how it can be improved and made more effective. It is aimed at employers, managers, safety representatives, trade union officials, contractors and all workers within the petroleum and allied industries. To make it more accessible, the guidance is written in simple language and its size has been limited to 30 pages. Images, like cartoons, have been used to illustrate important points.

The guidance also uses examples to demonstrate the practical ways that dif-

ferent organisations have involved workers in the past. In addition, case studies have been used to illustrate how to overcome the potential barriers to involvement, while genuine quotes, taken from industry, help convey key messages.

Finally, the guidance also provides practical tools such as questionnaires to help assess the extent of WFI and the factors (barriers and enablers) that can influence worker participation. ●

For additional information and resources on WFI and to obtain a copy of the guidance, go to <http://www.energyinst.org.uk/humanfactors/wfi>

References

- 1 Independent Safety Review Panel, 2007, *The report of the BP US refineries*.
- 2 Health and Safety Executive, 2007, *Topic pack – worker consultation and involvement*, Version 2, HSE Books.
- 3 Entec UK, 2000, *Examples of effective workforce involvement in health and safety in the chemical industry*, CRR291, HSE Books, ISBN 0 7176 1847 1.