

CORPORATE GOVERNANCE FOR PROCESS SAFETY

Mark Hailwood (Chair, OECD Working Group on Chemical Accidents; LUBW State Institute for Environment, Monitoring and Nature Conservation Baden-Württemberg, Karlsruhe, Germany)

Ian Travers & Amanda Cockton (Health and Safety Executive, Bootle, United Kingdom)

Joy Oh & Jacco Brouwer (Ministry of Social Affairs and Employment, Den Haag, The Netherlands)

The influence of corporate governance on the success or failure of an enterprise has been demonstrated through events over the past few years both within and without the chemical and petroleum industries. The Organisation for Economic Cooperation and Development (OECD), an intergovernmental organisation covering thirty four industrialised countries across the globe, has developed guidance jointly with industry which identifies the essential elements of good corporate governance for process safety. This paper discusses the needs for the document, presents the contents of the guidance and explores the future developments which are needed to embed this work within the operation of chemical and petroleum enterprises. Although the guidance is primarily targeted at the chemical and petroleum industries, this approach will be of benefit to any facility which relies upon process safety for the prevention of accidents and continued safe operation.

The development of the document has been possible through technical support from the International Council of Chemical Associations (ICCA), the European Process Safety Centre (EPSC), the Center for Chemical Process Safety (CCPS), the UK Petroleum Industry Association (UKPIA) and others. The publication is compatible with the OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response and with the OECD Guidance on Developing Safety Performance Indicators. It was launched at a conference on Corporate Governance for Process Safety held in June 2012 in Paris.

KEYWORDS: Corporate governance, process safety, leadership, OECD

INTRODUCTION

There have been a number of major accidents and serious process safety incidents over the past years for which the official investigation reports have partially attributed the causes to failures in management practices up to the highest levels of the corporate structure [CSB 2007; Buncefield MIIB 2008; National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 2011]. These occurrences are of particular concern as they follow close on the collapse in the financial sector, which too was in part brought about through poor corporate governance. There is now a growing recognition amongst senior leaders of how board room decisions have a major impact upon process safety outcomes and sustainable business success.

In the UK the Health and Safety Executive (HSE) together with the Environment Agency (EA), UK PIA, CIA, and other industry associations established the UK Process Safety Leadership Group in 2007 [HSE 2007] following on from the work of the Buncefield Standards Task Group set up in 2006 in the aftermath of the Buncefield fire and explosion.

In October 2007 the HSE published, jointly with the Institute of Directors, guidance for directors, governors, trustees, officers and their equivalents in the private, public and third sectors with regard to effective leadership of health and safety [IoD and HSE 2007]. Thus, within the UK a clear sense that commitment at the highest level

of the organisation is essential for the successful operation of major hazard facilities has been established.

The subject of corporate leadership was introduced into the 2009–2012 work programme of the OECD Working Group on Chemical Accidents (WGCA), and at the end of 2010 a Steering Group was established to address the issue. This Steering Group was made up of representatives from government agencies, chemical and petroleum industries and industry associations, with a vision of developing a guidance document for corporate leaders which would complement the existing OECD publications in the field of chemical accident prevention, preparedness and response, namely the *Guiding Principles* [OECD 2003] and the *Guidance on Safety Performance Indicators* [OECD 200]. The importance of the role of corporate leaders is recognised and described within the *Guiding Principles*, however this document is addressed to the whole range of stakeholders and not corporate leaders specifically.

The Steering Group was aware that there are already a number of documents published in a range of subject areas targeted towards a similar readership [CIMA 2010; Energy Institute 2010; FRC 2011]. These documents provided a useful insight into communication with the directors and board level decision makers of industrial enterprises and to some extent provided a working model for the new guidance on Corporate Governance for Process Safety. This guidance was launched at a conference at the OECD headquarters in Paris in June 2012.

THE GUIDANCE

The guidance, published in June 2012, has three main sections: the business case for effective process safety management, the essential elements of corporate governance for process safety, and a self-assessment section for senior leaders [OECD 2012].

BUSINESS CASE FOR EFFECTIVE PROCESS SAFETY MANAGEMENT

High hazard industries have the potential for catastrophic incidents involving large-scale loss of life, harm to health and environmental damage. Putting measures in place to prevent these incidents is not only an essential part of corporate social responsibility, but is also fundamental to the effective running of the business.

The business case for effective process safety management demonstrates to senior management how support for the prevention and preparedness for chemical accidents makes good business sense for a sustainable future, and is centred around a number of key topics. Firstly, the potential costs of the impact of a major accident are significant. The costs for the fire and explosions at the Buncefield fuel storage depot in the UK in December 2005 have totalled in excess of 1.25 billion Euros. The necessary investment to have avoided this accident would have been a small fraction of the consequences.

Not only is the direct financial impact of a major accident potentially very large, the loss of reputation and the political impact can also be extremely damaging. The ability to invest in new projects or technologies relies on the support of shareholders and also on the agreement of government authorities and other stakeholders. Negative headlines in national and international media can lead to a loss of trust amongst decision makers and lead to projects being delayed or abandoned. Whole industry sectors can even find themselves subject to much stricter regulation following an incident by a single organisation.

Therefore there is a clear need for leaders to understand the risks posed by their organisation's activities, and to balance major accident risks alongside other business threats. Despite being infrequent, the potential consequences are so high that leaders must recognise:

- major accidents as credible business risks;
- the integrated nature of many major hazard businesses – including the potential for supply chain disruption;
- management of process safety risks should have equal focus with other business processes including financial governance, markets, and investment decisions, etc.

There are however a number of commercial reasons why good process safety management makes good business sense, and is not just about avoiding potential negative effects. Some of the benefits of well managed assets and processes include:

- less downtime, and higher plant availability;
- maintenance budgets that are easier to forecast;

- plants and equipment which have longer life spans;
- improved efficiency and flexibility;
- enhanced employee, stakeholder and regulator relationships, and
- access to capital and insurance at more attractive rates.

These factors allow production scheduling to run more smoothly and help create a better, more productive business, with a less stressful working environment for managers and employees alike.

The lessons from past incidents demonstrate that strong process safety leadership is vital in preventing catastrophe, and it is essential that these lessons are learned and adopted across all sectors to prevent the same failings leading to more accidents in the future.

THE ESSENTIAL ELEMENTS OF CORPORATE GOVERNANCE FOR PROCESS SAFETY

Within the OECD guidance the essential elements of corporate governance for process safety are divided into five categories, which are depicted in the following graphic as a cyclic process of risk awareness, information, competence and action around the central focus of leadership and culture (see Fig. 1).

Leadership from the very top defines the safety culture for that organisation. Whilst specific roles and duties may be delegated to individuals and functional units, the overall responsibility and accountability remains with the senior leaders.

Leadership and culture: CEO and leaders create an open environment where they:

- Keep process safety on their agenda, prioritise it strongly and *remain mindful of what can go wrong*.



Figure 1. Essential elements of corporate governance for process safety

- Encourage people to raise process safety concerns, or bad news to be addressed.
- Take every opportunity to be role models, promoting and discussing process safety.
- Delegate appropriate process safety duties to competent personnel whilst maintaining overall *responsibility and accountability*.
- Are visibly present in their businesses and at their sites, asking appropriate questions and constantly challenging the organisation to find areas of weakness and opportunities for continuous improvement.
- Promote a “safety culture” that is known and accepted throughout the enterprise.

Risk awareness: CEO and leaders broadly understand the vulnerabilities and risks and they:

- Know the importance of process safety throughout the life cycle – whether it is the design, operation, and maintenance phases of their manufacturing facilities, or storage, logistics and decommissioning at those locations.
- Understand the critical and different *layers of protection that are in place between a hazard and an accident* and seek to strengthen those layers continually.
- Ensure appropriate and consistent *management systems* for analysing, prioritising and managing the risk, including strong management of change processes for people, technology and facilities.
- Personally involve themselves in risk assessing proposed budget reductions for process safety impacts and provide incentive schemes which don’t encourage production at the expense of process safety risk.
- Take responsibility for emergency planning for the range of consequences from a process safety incident including the credible worst case scenario.
- Know the hazards and risks at installations where there are hazardous substances.

Information: CEO and leaders ensure data drives process safety programmes, and they:

- Ensure that the organisation analyses audit and assessment results.
- Monitor site and corporate level process safety key performance indicators and near misses.
- Have metrics which help to monitor the *health of the process safety culture and management systems*.
- Actively share experiences and learning within their own organisation and within other high hazard sectors and ensure appropriate, high quality follow up.
- Establish safety management systems and monitor/review their implementation. Seek continuous improvement.

Competence: CEO and leaders assure their organisation’s competence to manage the hazards of its operations, they:

- Understand which questions to ask their people and know which follow up actions are necessary.

- Ensure there are *competent management, engineering, and operational personnel at all levels*.
- Ensure continual development of process safety expertise and learning from new regulation and guidance.
- Provide resource and time for expertise-based hazard and risk analyses, effective training and comprehensive scenario planning for potential accidents.
- Defer to the expertise of personnel, and do not dismiss expert opinions. They provide a process or system to ensure company leaders get expert process safety input as a critical part of the decision making process for commercial projects or activities.
- Ensure that the organisation monitors and reviews the process safety competency of contractors and third parties.
- Are *capable of openly communicating critical aspects of process safety* with all internal and external audiences.

Action: CEO and leaders engage in articulating and driving active monitoring and plans, they:

- Assure *practices are consistent with corporate process safety policies*.
- Safety measures should be incorporated at the earliest conceptual and engineering design stages of an installation to enhance the intrinsic (inherent) safety of the installation wherever practicable⁵.
- Incorporate process safety considerations into major capital investments, long range planning and integration of mergers or acquisitions.
- Ensure process safety risk mitigation plans and emergency response plans are developed and maintained for all sites within their business and at an organisation-wide level, with appropriate levels of competent resources available to execute the plans.
- Ensure implementation of process safety risk mitigation plans and reviews of progress versus the plans at site and corporate level.
- Monitor that corrective actions are applied and closed out promptly following audits and after thorough root cause investigations of all incidents or potentially high consequence near misses.

The concise list of essential elements was developed in conjunction with senior industry representatives and presented at a meeting of presidents and CEO’s at the World Economic Forum in Davos in January 2012. A number of senior leaders from throughout the chemical and petroleum industries have given their personal support and endorsed the contents of this guidance.

SELF-ASSESSMENT QUESTIONS FOR SENIOR LEADERS

The third section of the OECD guidance encompasses a self-assessment questionnaire for senior leaders. In total there are 39 questions covering the five categories of the essential elements of corporate governance. The questions were developed by a group of experts comprising senior

leaders from high hazard industries, representatives of industry associations and government agencies. Each question is intended to be answered using a “traffic light” scoring system:

- 1 = Yes (green), and I can easily demonstrate this;
- 2 = Uncertain (orange), I would need to find out, or this is already work in progress;
- 3 = No (red), I think there is a gap.

The idea behind the self-assessment is that senior leaders should be in a position to recognise whether their own activities and the corporate governance of the company for which they work address the potential for major accidents appropriately, or whether gaps may exist. The simple, structured approach allows the assessment to be carried out with minimal time and finance commitments. This should counter the perennial excuse that senior leaders have insufficient time to concern themselves with extensive, complex documents. It should be clearly recognised that this is not a check-list for success in which 100% “green lights” guarantees safe operation. The self-assessment has been recognised by those who have applied it, that it is challenging. The fact that knowing that the systems are in place is not sufficient, and that the ability to demonstrate this is the requirement for success drives a continual reappraisal process. A number of high hazard industry operators have pledged to introduce this assessment to their CEO’s and senior leaders over the coming months.

THE FUTURE

Unless senior leaders of high hazard industries take note of the need for maintaining vigilance with regard to process safety in their operations, then high consequence accidents are to be expected. This OECD document provides an opportunity for senior leaders to take a step towards maintaining this vigilance. Corporations, industry associations, government authorities and other stakeholders such as shareholders, trade unions, and non-governmental organisations can assist in promoting this document within the high hazard industries.

Of significant importance would be the integration of the essential elements into the Responsible Care® Global Charter [ICCA 2006] of the International Council of Chemical Associations (ICCA) as well as their adoption by leading petroleum industry organisations, e.g. API, Concawe or Europia, and their member companies and corporations.

The guidance allows members of trade organisations to benchmark themselves within their sector, or even against other sectors to see where their vulnerabilities lie, and to share learning on how to improve their safety performance.

It is recognised that this OECD guidance does not provide a template for all corporate governance issues related to the operation of a high hazard industry. It should however trigger key questions amongst senior leaders to address and follow-up those aspects of their management role which require attention and so increase the

resilience of the industry’s operation within the field of chemical accident prevention and preparedness.

Initially the guidance has been produced in English and French, the two official working languages of the OECD. However interest has already been indicated in translating the guidance document into other languages, thus increasing the ease of access to its content.

LITERATURE

- Buncefield MIIB (2008) *The Buncefield Incident, 11 December 2005, The final report of the Major Incident, Investigation Board* <http://www.buncefieldinvestigation.gov.uk/reports/index.htm> (accessed: 02 July 2012)
- CIMA (2010) *Enterprise governance – Restoring boardroom leadership*, http://www.cimaglobal.com/Documents/Thought_leadership_docs/Enterprise_governance.pdf (accessed: 02 July 2012)
- CSB (2007) US Chemical Safety and Hazard Investigation Board *Investigation Report, Refinery Explosion and Fire, BP Texas City, Texas March 23, 2005*, Report No. 2005-04-I-TX, <http://www.csb.gov/assets/document/CSBFinalReportBP.pdf> (accessed: 02 July 2012)
- Energy Institute (2010) *High level framework for process safety management* <http://www.energyinstpubs.org.uk/tfiles/1341214083/1658.pdf> (accessed: 02 July 2012)
- FRC (2011) *Effective Corporate Governance* <http://www.frc.org.uk/getattachment/71ddf0de-e823-48aa-85df-b4aaf9743f1f/FRC-Effective-Corporate-Governance.aspx> (accessed: 02 July 2012)
- HSE (2007), *Working with others* <http://www.hse.gov.uk/comah/working.htm> (accessed: 02 July 2012)
- ICCA (2006) *Responsible Care® Global Charter* http://www.icca-chem.org/Global/Initiatives/RC_GlobalCharter2006%5b1%5d.pdf (accessed: 02 July 2012)
- IoD and HSE (2007) Institute of Directors and Health and Safety Executive *Leading Health and Safety at Work – Leadership Actions for Directors and Board Members*, INDG 417 <http://www.hse.gov.uk/pubns/indg417.pdf> (accessed: 02 July 2012)
- National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (2011) *Deep Water, The Gulf Oil Disaster and the Future of Offshore Drilling, Report to the President*, http://www.oilspillcommission.gov/sites/default/files/documents/DEEPWATER_ReporttothePresident_FINAL.pdf (accessed: 02 July 2012)
- OECD (2003) *OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response*, 2nd Edition, <http://www.oecd.org/dataoecd/10/37/2789820.pdf> (accessed 02 July 2012)
- OECD (2008) *OECD Guidance on Developing Safety Performance Indicators related to Chemical Accident Prevention, Preparedness and Response, Guidance for Industry* <http://www.oecd.org/dataoecd/6/57/41269710.pdf> (accessed: 02 July 2012)
- OECD (2012), *Corporate Governance for Process Safety* http://www.oecd.org/document/45/0,3746,en_2649_37465_49846637_1_1_1_37465,00.html (accessed: 02 July 2012)