Process Safety Leadership for Senior Executives

Training Standard & Endorsement Guidelines

Version 3.1

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Document History

This document is a controlled document maintained by Cogent Skills. Future revisions will be recorded below with revision details and date of revision.

No	Revision Details	Author	Checked	Approved
1	Approved Version 1.0 - Sept 2011	I. Moores	C. Sakhardande	J. Murdock
2	Amendments made in accordance with the Notes and Actions from Expert Panel (5th Meeting) 20-10-2011	I. Moores	C. Sakhardande	J. Murdock
3	Standard Review	I Lockhart	E Seaton	N Smith
3.1	Fixed broken hyperlinks	-	-	N Smith

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Introduction

Process Safety is a unique blend of engineering and management skills with a clear focus on preventing catastrophic accidents – particularly toxic leaks, explosions and fires that might impact on people and the environment and which are potential risks associated with the use of hazardous substances if these are not properly managed.

Major Accidents continue to highlight learning, which drives the need to review safety controls in major hazard process industries. The regulatory authorities will increasingly require employers in major hazard industries including chemicals to provide a clear demonstration of organisational competence in the area of process safety management, particularly at board and senior management level.

Cogent Skills Industry Training Standards have been developed with employers to identify the skills, knowledge and understanding needed for effective training to take place. The training standards themselves form part of the Gold Standard competency framework which provides a skills benchmark for world class performance for the process industries.

Expert Panel Members

The content of this document was originally developed by an industry working group co-ordinated by Cogent Skills and chaired by the Chemical Industries Association (CIA). Members of the Expert Panel include:

- ABB Engineering Services Ltd
- Chemical Industries Association (CIA)
- Cogent Skills
- Dow Corning
- Health and Safety Executive (HSE)
- HFL Risk Services Ltd
- Hudson Consultancy
- Johnson Matthey
- J. Hempseed Ltd
- Pentagon
- Process Industry Consulting
- United Kingdom Petroleum Industry Association (UKPIA)
- Unite the Union

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Process Safety Leadership for Senior Executives

Aim and Purpose

To provide a clear understanding of the principles of process safety leadership across an organisation and the methods used to deliver sustainable results through engagement of the workforce.

Audience

This training standard is aimed at the senior executives within an organisation from board members to site managers [decision makers, people that have influence over strategy / culture / behaviours]. For companies with board members located outside the UK, the requirement to demonstrate process safety leadership still rests with the board as well as with the most senior UK managers.

Process Safety Leaders

Process safety leaders refers to all board members, executive directors and other senior managers whose position and responsibilities have the potential for a significant positive impact on the process safety and performance of a business.

Process Safety Leadership

Good process safety leadership requires that key business and operational decisions support, ensure delivery of and reinforce high standards of process safety management and the control of major hazard risks.

Clear and positive process safety leadership is at the core of managing hazards, hazardous materials or processes and is vital to ensure that risks are effectively managed. It requires board-level and senior management involvement and competence. Visibility and promotion of process safety leadership is essential to set a positive safety culture throughout an organisation.

Learning Objectives

The learner will:

1. Understand the business case for effective process safety management.
2. Understand the nature of major accidents and how hazards and risks are defined and quantified.
3. Understand the key elements of process safety management systems.
4. Understand assurance processes for effective risk management.
5. Understand how to promote a positive process safety culture through effective engagement of the workforce.
6. Understand the importance of good process safety leadership principles and how to implement them.
7. Understand how to achieve continuous improvement in process safety performance.

Assessment Methodology

Candidates will be required to provide evidence of the above within a designated time of completing the training, through a guided discussion with their course trainer.

It is recommended that the attendees produce a personal commitment of what they can take back to their organisations which may include:

- Personal action plan
- Questions to challenge their own organisation
- Process safety management improvement plan for their own organisation to demonstrate reduction of risks to people, environment and assets, protect the organisation's reputation and understand their liabilities (PEARL)

Training Delivery Time

There are no guided learning hours for this standard, but it is recommended that the delivery time be no less than 6 hours (1 day).

Resources

Videos/ DVDs of major hazard accidents: (suggested resources)

> http://www.csb.gov/videoroom/videos.aspx?cid=1&F_All=y
> http://www.icheme.org/resources.aspx
> http://www.hse.gov.uk/resources/videos.htm

Staffing:
Trainers/ facilitators will be required to demonstrate evidence of the following:
- Appropriate qualifications and competencies to conduct the training
- Demonstrate experience of working within a senior process safety management role
- Trained in instructional/ lecturing techniques and/or have proven instructing/teaching experience
- Evidence of maintenance of professional development keeping awareness and skills up to date.

Other Details

Recommended pre-reading:

1. The Report of the BP US Refineries Independent Safety Panel Executive Summary; summary available at http://www.hse.gov.uk/leadership/bakerreport.pdf.

2. COMAH: Buncefield: Why did it happen? Para's 79-91

3. Process Safety Leadership Group: Principles of Process Safety Leadership (ISBN 978 0 7176 6386 6).

4. HSE: Leadership for the Major Hazard Industries

5. HSE: Leading health and safety at work

   HSE Web Communities: COMAH Strategic Forum

6. Managing Risk: The hazards that can destroy your business

7. Good Safety Leadership Poster V1.0

8. Safety Leadership Charter

Other reference material:

1. HSE: Leading health and safety at work

2. COMAH: Inspecting Major Hazard Leadership and Investigating Leadership Failures in Major Accidents

3. COMAH: Major Hazard Leadership Intervention Tool

4. COMAH: The Control of Major Accident Hazard Regulations 2015

5. OECD: Natech Risk Management: 2017-2020 Project Results

6. OECD: Corporate Governance for Process Safety: Guidance for senior leaders in high hazard industries

ENDORSEMENT GUIDELINES

Providers wishing to be endorsed against the Process Safety Leadership for Senior Executives Training Standard are expected to provide evidence to support delivery of the learning objectives.

Outlined below are the guidelines set out as a series of points against each learning objective. Providers are expected to demonstrate that their proposed training module addresses each of the points stated in the guidelines below.

1. **Understand the business case for effective process safety management**
- A summary of significant major accident events and the resultant concerns of stakeholders and regulators that have changed the expectations on organisations and managers.
- Outline recurring root cause failures of these accidents that highlight the key issues associated with effective process safety management.
- An understanding of the impact of a major accident including:
  - effect on business efficiency and business survival.
  - direct and indirect costs
  - people and the environment
  - damage to an organisation's reputation.
- An understanding of current strategic initiatives relating to good governance of major hazard risks.
- How managers should balance major accident risks alongside the other business threats.
- Regulatory requirements for leadership: legal duties on boards, organisations and individuals in relation to prevention of major accidents.

2. **Understand the nature of major accidents and how hazards and risks are defined and quantified**
- Summary of the consequences arising from major accidents.
- Explain the difference between occupational safety and process safety.
- Measuring major accident hazard risk and how managers should interpret results.
- Understand how the major accident hazards typically associated with hazardous substances and the nature of the potential consequences both on and off the site should be quantified (for any operation).

- Understand the concepts of risk reduction and risk tolerability.
- Understand the potential impact of major accident hazards on the health and wellbeing of people and the environment.
- Understand how these hazards and risks should be captured through the effective use of a process safety management system.

3. **Understand the key elements of process safety management systems**

- Understand the need for complete process safety management systems to be in place (Examples: OSHA, CCPS, etc).
- Ensure the effectiveness of process safety management systems through:
    a) Identification of safety critical systems, the change to the risk when safety critical equipment becomes impaired and the risks associated with cyber-security
    b) Supervision and monitoring
    c) Inspection, testing and maintenance of equipment
    d) Effective leading and lagging Process Safety Performance Indicators and Board oversight of key indicators
    e) Audit and Review.
- Technical and Non-technical competency of both staff and contractors (Examples: Competency Management Systems, Gold Standard frameworks, etc).
- Understand that Process Safety or Major Hazard Management spans across differing management system subsets and may be considered as part of the complete business management system
- Understand the relationship between business decisions and process safety outcomes (Example: Baker report).

4. **Understand assurance processes for effective risk management**

- Understand the processes that leaders need to ensure are implemented and maintained in order to minimise risk.
- Understand the key process safety performance information, including leading and lagging indicators, that senior managers should routinely review and how to interpret such data.
- Understand the importance of audit and review.
- Know the safeguards used to reduce the risk including both typical operational and engineering controls.

- Be aware of the hierarchy of protection levels – Inherent Safety, Prevention, Control and Mitigation.
- The features of an effective management structure and arrangements for delivering the policy.
- Awareness of the need for multiple, diverse and independent layers of protection and implications for their design and maintenance.
- Understand how human factors and organisational effectiveness influence process safety performance and have a basic understanding of the different strategies for managing the various kinds of human failures.

5. **Understand how to promote a positive process safety culture through effective engagement of the workforce**

- Understand the role of process safety culture in determining effective process safety performance.
- How to develop and maintain features of a "good" process safety culture.
- Ways of measuring safety culture.
- How the workforce is engaged with process safety, and management can be seen to be engaged with the Process Safety by the workforce on the shop floor.

6. **Understand the importance of good process safety leadership principles and how to implement them**

- This would include the following:
  - Clear and positive process safety leadership at the core of managing a major hazard business.
  - Board level involvement and competence with constant active engagement.
  - Board and Senior Executive level promotion and visibility of process safety leadership.
  - Board and Senior Executive level review of the safety culture throughout the organisation.
  - Engagement of the workforce in the promotion and achievement of good process safety management.
  - Management responsibility to provide time and resources for process safety.

- Monitoring process safety performance based on both leading and lagging indicators.
- Business risks being effectively managed.
- Sharing best practice across industry sectors.
- Learning and implementing lessons from relevant incidents in other organisations.
- Maintain the currency of corporate knowledge and competence.
- Endorsement of process safety improvement plans and review of progress.

7. **Understand how to achieve continuous improvement in process safety performance**

- The importance of setting policies and their effective deployment.
- Methods to ensure performance and progress towards goals are formally monitored.
- The importance that an organisation learns from ALL relevant experience and applies the lessons learned.
- The benefits of managing corporate knowledge and succession planning as part of a competence management function.
- Understand the importance and value of process safety improvement plans to continually reduce risk.
- Benefits of learning from experience to ensure the continued positive evolution of process safety management within an organisation.
- Understand the importance of sustainability so that competency, investment and maintenance decisions are based on a longer-term view.

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Domain knowledge and experience

Trainers / course directors should:

- Have practical knowledge of process safety in a high hazard and/or highly regulated sector, normally by extended periods of working in industry in roles with specific process safety responsibilities.

- Have a thorough knowledge of the principles of process safety management, over and above the specific scope of the course(s) they plan to deliver.

- Be able to demonstrate knowledge of relevant regulations, e.g. OSHA, COMAH, etc.

- Hold an appropriate professional registration (e.g. Chartered Engineer).

- Ideally, hold an accredited qualification relevant to process safety.

- Be recognised as competent via (safety professionals) peer review.

- Have a personal commitment to high standards of safety and professional ethics.

Pedagogical knowledge and experience

Trainers / course directors should:

- Have proven experience in delivering professional training and CPD, including experience at the level of seniority appropriate to the course, given the typical learner.

- Undertake personal CPD to keep their knowledge and skills up to date.

- Be able to provide references as to their training ability and learner satisfaction.

- Be articulate and engaging, able to establish interaction and rapport with learners.

- Be willing, where appropriate, to undertake pre-course interviews with a view to tailoring delivery to learner needs.

- Be conversant with, and able to select and apply, a range of appropriate training techniques and styles.

- Be able and willing to adapt their delivery and, where possible, material and examples used, to suit the learners concerned.

- Be willing to mentor other presenters in delivery of the course or similar material.
- Be willing for their presentation, and the course content, to be subject to feedback and evaluation.
- Be willing to provide feedback after each course in order to guide the improvement of course design, content and materials.
- Be willing, if requested, to undertake follow-up discussions and visits.
- Ideally, have received formal training in teaching/learning techniques.

Notes

- For senior management courses and where delegate numbers are large, two or more presenters may be required and the qualities above should be characteristic of the combined team.
- For senior level courses at least one presenter should have experience in facilitation at appropriate board/ senior management level.
- Feedback on courses and presenters should be assembled and evaluated after each course.