



# SkillsFest25

## A best practice approach for training in major hazard industries

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# About Cogent Skills

A not-for-profit charitable organisation owned by the key Trade Associations from the science industries, with a family of commercially focused companies committed to supporting the skills, needs and ambitions across the UK science and technology sector.

Working within strategic partnerships for:

- Culture and behaviours within major accident hazard industries
- Nuclear skills
- Hydrogen skills
- Climate adaptation and resilience



# The development of the UK Process Safety Management Framework

Where did it all begin?



# The development of the UK Process Safety Management Framework

Why was it needed?

1974 Flixborough, UK	(28 fatalities, 36 injured)
1976 Seveso, Italy	(3,000 animals killed, 70,000 animals slaughtered)
1986 Bhopal, India	(3,500-25,000 fatalities, 150,000-200,000?)
1986 Chernobyl, Russia	(30 fatalities, <>9,000?)
1988 Piper Alpha, UK	(167 fatalities)
1998 Longford, Australia	(2 fatalities, 8)
2005 Texas City, USA	(15 fatalities, 180)
2005 Buncefield, UK	(0 fatalities, 0)
2010 Deepwater Horizon, Gulf of Mexico	(11 fatalities, 17)
2014 Turkey	(301 fatalities, 80)
2015 Tianjin, China	(173 fatalities, 797)
2020 Beirut, Lebanon	(218 fatalities, 7000)
2024 Hyderabad, India pharmaceutical factory	(18 fatalities, 40)
2025 Hyderabad, India pharmaceutical factory	(42 fatalities, 25)
2025 Barcelona, Spain	(150,000 warned to stay inside, 70 tons chlorine )



# Clear expectations

Following the Buncefield explosion and the subsequent court case, the Principal Inspector from the UK Health Safety Executive asked the following three questions.

To which I would like to add

- Do we understand what can go wrong  
.... and is everyone who needs to know this fully aware
- Do we know what our systems are to prevent this from happening  
.... and are we clear that all our people are fully competent
- Do we have information to assure us they are working effectively  
.... and are we assuring ourselves that our people remain aware and fully competent



# Creating process safety training standards

## PROCESS SAFETY FOR INDUSTRY

Setting the standard for workforce competence  
and process safety compliance.





# Creating process safety training standards

2010:

UK senior leaders, trade bodies, trade unions and government environment and health and safety regulators created a set of Process Safety Leadership Group Principles.

Industry leaders felt they had insufficient awareness and understanding of the key principles of process safety (not to be confused with personal or occupational safety)

Cogent Skills were the right body to help industry create industry training standards for process safety and formed the Process Safety Management Competence Programme Board to develop process safety awareness training

- For senior executives      [Process Safety Leadership for Senior Executives](#)      (PSL)
- For managers      [Process Safety Management Foundations](#)      (PSMF)
- For operators      [Process Safety Management for Operations](#)      (PSMO)



# What are training standards?

Historically sector skills bodies developed craft, technical or academic skills and knowledge through National Occupational Standards and vocational qualifications

Training Standards help us shift the focus onto training that impacts on organisational culture and behaviours – from the boardroom to the shop floor

They focus participants on what they should know, on what they need to do, and why they need to communicate better across all levels of the organisation.

Our process safety training standards are structured to deliver a consistent message to senior leaders, managers and operators

PSL	PSMF	PSMO
Understand the business case for effective process safety management	Understand the importance and key principles of process safety management.	Understand the meaning and importance of process safety management
Understand the nature of major accidents and how hazards and risks are defined and quantified.	Understand how to identify hazards associated with hazardous substances and process plant	Understand the hazards, risks and consequences associated with hazardous substances and processes
Understand the key elements of process safety management systems	Understand how to assess the risks associated with hazardous substances and process plant	Understand the hazards, consequences and safeguards in the specific process or plant you operate or maintain
Understand assurance processes for effective risk management	Understand the importance of identifying suitable safety critical equipment, implementing key risk control systems and the importance of sustaining their effectiveness	Keeping the process safe - the role of operations (Operator & Maintenance) in ensuring effective process safety
Understand how to promote a positive process safety culture through effective engagement of the workforce	Understand the need for effective measures to limit the consequences of a major accident	Emergency planning and the need for effective measures to limit the consequences of process incidents
Understand the importance of good process safety leadership principles and how to implement them.	Understand how to apply learning from incidents and near misses	Understand the role of Operations in applying learning from incidents and near misses
Understand how to achieve continuous improvement in process safety performance	Understand how to monitor performance to achieve continual improvement in process safety performance	Understand the concept of continual improvement in process safety performance, and Operations role in this





# Creating a shared understanding

PSL	PSMF	PSMO
Understand the business case for effective process safety management	Understand the importance and key principles of process safety management.	Understand the meaning and importance of process safety management
Understand the nature of major accidents and how hazards and risks are defined and quantified.	Understand how to identify hazards associated with hazardous substances and process plant	Understand the hazards, risks and consequences associated with hazardous substances and processes
Understand the key elements of process safety management systems	Understand how to assess the risks associated with hazardous substances and process plant	Understand the hazards, consequences and safeguards in the specific process or plant you operate or maintain
Understand assurance processes for effective risk management	Understand the importance of identifying suitable safety critical equipment, implementing key risk control systems and the importance of sustaining their effectiveness	Keeping the process safe - the role of operations (Operator & Maintenance) in ensuring effective process safety
Understand how to promote a positive process safety culture through effective engagement of the workforce	Understand the need for effective measures to limit the consequences of a major accident	Emergency planning and the need for effective measures to limit the consequences of process incidents
Understand the importance of good process safety leadership principles and how to implement them.	Understand how to apply learning from incidents and near misses	Understand the role of Operations in applying learning from incidents and near misses
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[illegible]

## A world map with countries colored in blue and grey. The blue countries include Canada, the United States, Mexico, Brazil, Argentina, Chile, Peru, Colombia, Venezuela, Ecuador, Guyana, Suriname, French Guiana, the United Kingdom, Ireland, Portugal, Spain, France, Germany, Poland, Czech Republic, Slovakia, Austria, Hungary, Switzerland, Italy, Greece, Turkey, Russia, China, India, Pakistan, Bangladesh, Nepal, Bhutan, Myanmar, Thailand, Laos, Vietnam, Cambodia, Laos, Philippines, Malaysia, Singapore, Indonesia, Brunei, Timor-Leste, Australia, and New Zealand. The grey countries include Greenland, Iceland, Norway, Sweden, Finland, Denmark, Netherlands, Belgium, Luxembourg, Germany, Poland, Czech Republic, Slovakia, Austria, Hungary, Switzerland, Italy, Greece, Turkey, Russia, China, India, Pakistan, Bangladesh, Nepal, Bhutan, Myanmar, Thailand, Laos, Vietnam, Cambodia, Laos, Philippines, Malaysia, Singapore, Indonesia, Brunei, Timor-Leste, Australia, and New Zealand. The text 'es' is visible on the left side of the map.

## 13 Languages



Process Safety Leadership  
for Senior Executives

Process Safety  
Management Foundations

Process Safety  
Management for  
Operations

Process Safety for Site  
Champions

Process Safety Awareness

Permit to Work Awareness  
& Management of  
Contractors

Permit to Work: Permit  
Writers and Issuers

Human Factors Awareness

NEBOSH HSE  
Certificate in Process  
Safety Management

NEBOSH HSE  
Introduction to Incident  
Investigation

NEBOSH HSE Award in  
Managing Risks and Risk  
Assessment at Work

NEBOSH National Diploma for  
Occupational Health and  
Safety Management  
Professionals

NEBOSH HSE Certificate in  
Health and Safety  
Leadership Excellence

SIAS Level 3 Award in  
Process Safety  
Management

SIAS Level 3 Award in  
Process Safety Operations

IOSH Managing Safely

# HOW CAN WE HELP?

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