

CCPS Risk-Based Process Safety (RBPS)

The Next Generation PSM Framework

20 - 24 Jun 2022	Dubai	US\$ 4,350
29 - 02 Sep 2022	Dubai	US\$ 4,350
21 - 25 Nov 2022	Dubai	US\$ 4,350
19 - 23 Jun 2023	Dubai	US\$ 4,350
28 - 01 Sep 2023	Dubai	US\$ 4,350



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About the Course

Formal Process Safety Management (PSM) systems are now mandated in most parts of the world to achieve process safety and improve practices. PSM systems have therefore been implemented in most companies for many years.

However, incident investigations continue to identify inadequate management system performance as a key contributor to the incident, and audits reveal a history of repeat findings indicating chronic problems whose symptoms are fixed again and again without effectively addressing the technical and cultural root causes. Process safety programs focus on the design and engineering of facilities, maintenance of equipment, effective alarms, effective control points, procedures and training. It is sometimes useful to consider process safety as the outcome or result of a wide range of technical, management and operational disciplines coming together in an organised way.

The Center for Chemical Process Safety (CCPS) created the next generation process safety management framework RBPS, recognising that all hazards and risks in an operation or facility are not equal, consequently apportioning resources to focus effort on more significant hazards higher risks as appropriate. This risk-based approach reduces the potential for assigning an undue amount of resources to manage lower-risk activities, thereby freeing up resources for tasks that address higher-risk activities.

Core Objectives

This CCPS Risk-Based Process Safety training course aims to enable the delegates to achieve the following objectives:

- Enhance the Risk-Based Process Safety knowledge of employees
- Improve the overall organisational capability and performance through a competent workforce
- Improve overall process safety by considering organisational culture
- Understand hazards and risks
- Commit to process safety and the way of working
- Learn to assess and manage risk in design, operation and maintenance
- Willingness and ability to learn from their own and others' experiences

Training Approach

The CCPS Risk-Based Process Safety training course will combine presentations with interactive practical exercises, supported by pre and post-test activities plus videos. The delegates will be encouraged to participate actively in group discussions and analyses of real-life case studies.

This training course will encourage delegates' participation, and the atmosphere in the classroom will be tailored to asking questions. The delegates will all be made to feel welcome in a stress-free atmosphere. Both a PowerPoint slide presentation and videos will be used.

The Attendees

This training course is for anyone interested in Process Safety Management and control techniques but will be of special interest to the operational level, designers, and management personnel looking for insight into CCPS.

Whether an entrepreneur or innovator, the course will increase your knowledge and potentially germinate new thinking and ideas.

Likewise, it will be valuable to the professionals but not limited to the following:

- Operations
- Maintenance
- Technical Service Personnel
- Process Safety Engineers
- Operational Management Teams

DAILY DISCUSSION

DAY ONE

INTRODUCTION TO SAFETY - UNDERSTANDING HAZARDS AND RISK

- Introduction
- Good safety is good business
- What is Process Safety?
- Accident Pyramid and Swiss Cheese Model
- Major Incidents as Learning Events
- Why do we fail to learn?
- Understanding Hazard and Risk
- Risk Matrix and ALARP
- Risk Tolerability

DAY TWO

RISK ANALYSIS TECHNIQUES

- Consequences
- Risk Assessments and Hazard Studies
- Bow-Tie model
- Hazards & Risk Registers
- P&ID's
- Hazard Identification and Risk Analysis (HIRA) Techniques
- HAZOP
- LOPA
- Design Safety
- Inherent Safety, Ergonomics, & Human Error

DAY THREE

OPERATIONAL CONSIDERATIONS

- Asset integrity
- Causes of Overpressure
- Overpressure Protection Philosophy
- Operational Characteristics

- Causes of Improper Performance
- Preventative Maintenance
- HAZOP and Risk-Based Safety Management
- Emergency Response
- CCPS Risk-Based Process Safety
- Four (4) pillars
- 20 elements

DAY FOUR

CULTURE

- Metrics & Process Safety Performance
- Management of Change
- Management Systems
- Risk-Based Inspection and Testing
- Records
- Human Factors
- Leadership and Safety Culture
- National and Regulatory Culture
- Corporate Culture and Black Swans
- DuPont and ICI

DAY FIVE

LEARNING FROM EVENTS

- Learning from Accidents
- Behavioural Safety
- ISC 6 pillars
- Energy Institute PSM framework
- OECD Corporate Governance for Process Safety
- Process Safety Leadership Checklist (CIA)
- Group Vision and Action Plan