

H S E

HEALTH

SAFETY

ENVIRONMENT



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CCPS Risk-Based Process Safety (RBPS): the Next Generation PSM Framework

Duration: 5 Days



Introduction:

Formal process safety management systems are now mandated in most parts of the world as a way of achieving process safety and improving 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.

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

Participants attending this BTS training course will develop the following competencies:

- 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

Who Should Attend?

- Operations, Maintenance and Technical Service Personnel

TRAINING METHODOLOGY:

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

PROGRAMME SUMMARY:

This BTS training course will raise the awareness and understanding of employees to recognize the importance of process safety and how it influences day-to-day work activities. Using the CCPS RBPS approach will provide the foundation to achieving a proactive risk based process safety culture which is essential to operations and work ethics. Aimed at Operations, Maintenance and Technical Services engineers, this training course is expected to improve the competency of the engineers in all process safety aspects that affect their daily work.

Course Objectives:

By the end of this course delegates will be able to:

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

- Develop/enhance the Risk Based Process Safety knowledge of employees
- Improve the overall organizational capability and performance through a competent workforce

Course Outline:

Day 1: - Introduction to Safety; Understanding Hazards and Risk

- Introduction
- Good safety is good business
- Accident Pyramid and Swiss Cheese Model
- Major Incidents as Learning Events
- Why we fail to learn
- Understanding hazard and risk
- Risk matrix
- ALARP
- Risk tolerability
- Program Session
- Case studies

Day 2: - Risk Analysis Techniques

- Consequences
- Risk Assessments and Hazard Studies
- Hazards & Risk Registers
- Bow-Tie model
- P&ID
- Hazard identification and risk analysis (HIRA) techniques
- Design safety
- Inherent Safety
- Ergonomics
- Human Error

- Operations
- Program Session
- Case studies

Day 3: - Operational Considerations

- Asset integrity
- Causes of overpressure
- Overpressure protection philosophy
- source isolation and relief
- Operational characteristics
- Causes of improper performance
- Preventative Maintenance
- Hazop and Risk-Based Safety Management
- Emergency Response
- CCPS risk based process safety
- 20 4 pillars
- 20 elements
- Program Session
- Case studies

Day 4: - Culture

- 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
- People
- DuPont and ICI
- Process Safety Performance

Day 5: - Learning from Events

- Learning from accidents
- Behavioral safety
- ISC 6 pillars
- Energy Institute PSM framework
- OECD Corporate Governance for Process Safety
- Process Safety Leadership Checklist (CIA)

- Program Session
- Case studies
- Review
- Applying the Learning – Group Vision and Action Plan