

# Advanced Safety in Process Equipment Design and Operation

*Barcelona (Spain)*

*20 - 24 January 2025*

UK Training

# PARTNER



# Advanced Safety in Process Equipment Design and Operation

Code: CS28 From: 20 - 24 January 2025 City: Barcelona (Spain) Fees: 5100 Pound

## Introduction

Ensuring safety in the design and operation of process equipment is crucial in industries where even small errors can lead to catastrophic outcomes. This comprehensive course is designed for technical professionals who aspire to enhance their expertise in advanced safety. It delves into Advanced Process Hazard and Operability Analysis HAZOP techniques, which are vital for identifying and mitigating potential hazards.

## Course Objectives

- Hazard Identification and Assessment: Master the techniques for conducting Process Safety Analysis to recognize and evaluate fundamental risks.
- Risk Mitigation and Prevention: Develop effective strategies that utilize advanced safety equipment to prevent accidents.
- Personnel Safety and Well-being: Promote worker safety by establishing an environment that adheres to equipment safety rules.
- Environmental Protection: Learn measures to safeguard the environment within the framework of process safety management.
- Compliance and Regulatory Adherence: Understand the regulatory requirements and industry standards necessary for advanced safety training.

## Course Outlines

### Day 1: Fundamentals of Process Safety Management

- Understanding Process Safety Management PSM: Integrate advanced safety technologies into your operational practices.
- Exploring Documentation Methods: Learn to effectively document and track action items within PSM.
- Regulatory Compliance: Familiarize yourself with the basic safety equipment required to meet industry standards.
- Cultivating a Safety Culture: Discover strategies to foster a strong culture of safety within your organization.
- Organizing Safety Information: Learn to categorize and prioritize process safety information effectively.
- Developing Risk Mitigation Strategies: Prioritize safety measures based on comprehensive risk assessments for effective hazard mitigation.

### Day 2: Risk Assessment and Management

- Mastering Risk Assessment Techniques: Gain expertise in methods like HAZOP, FMEA, and LOPA.
- Forming Effective HAZOP Teams: Learn how to structure teams for efficient hazard identification and analysis.
- Identifying and Prioritizing Hazards: Utilize risk matrices to classify and rank process hazards.

- Conducting Quantitative Risk Assessments: Acquire the skills needed for accurate quantitative risk analysis.
- Integrating Risk Assessments: Discover how to incorporate risk assessment findings into safety equipment design and operational practices.

### Day 3: Designing Equipment for Safety

- Principles of Inherently Safer Design: Understand how to select and implement safety instrumented systems SIS effectively.
- Relief Systems and Emergency Shutdowns: Recognize the importance of these systems in maintaining process safety.
- Fire and Explosion Prevention: Explore techniques for designing equipment that minimizes fire and explosion risks.
- Applying Risk Ranking Techniques: Utilize advanced safety analysis methods in conjunction with equipment safety plans.

### Day 4: Safe Operation and Maintenance

- Operational and Maintenance Best Practices: Develop comprehensive guidelines for safe equipment operation and maintenance.
- Establishing Safe Work Procedures: Create protocols that emphasize the importance of equipment safety training.
- Conducting Process Hazard Analysis PHA: Understand how safety audits can enhance equipment safety and operational integrity.
- Considering Human Factors in Safety: Investigate the impact of human behavior on the safety of operations and equipment.

### Day 5: Emergency Response and Continuous Improvement

- Developing Effective Emergency Response Plans: Learn to create plans that prepare for potential emergencies.
- Incident Investigation Techniques: Explore methods for analyzing incidents and applying lessons learned to improve safety.
- Promoting Continuous Improvement: Implement strategies that encourage a culture of safety and ongoing enhancement within organizations.

### Conclusion

Enroll in this advanced safety training course to earn your Advanced Safety Certificate. You will acquire the essential knowledge needed to become a proficient advanced safety professional, enhancing your understanding of equipment safety and risk management. This course is not just an educational opportunity; it's a critical step toward creating a safer, more sustainable workplace.



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