

Fundamentals in Process Safety Management Training

Full Course Brochure

Course Overview

This **3-Day Fundamentals in Process Safety Management** course provides a comprehensive understanding of the key principles and fundamentals of process safety.

This course has been designed to focus on what really matters to process safety and operations staff. Participants will focus on site specific hazards and control measures as they apply to them and demonstrate how they contribute to keeping the process safe. Integration of the concepts required to achieve an optimum approach to process safety in operations is the main goal of this course. Exercises and useful examples will be utilized throughout the course to emphasize the key learning points.

Participants will explore functional areas crucial to process safety, based on the CCPS guidelines and IOGP framework, including leadership, knowledge and competence, engineering and design, systems and procedures, assurance, human factors, and culture.

Course Objectives

The course focuses on the prevention of catastrophic accidents and near misses associate with loss of containment of energy or dangerous substances, such as chemicals and hydrocarbons. It provides an introduction to and overview of all significant aspects and considerations on process safety in operations to reduce risk due to process hazards. It is conceived to allow for attendees to apply skills learnt from this course at a practical level to achieve safe operations and to understand its concepts and issues.

Group discussions, hands-on class exercises and workshops shall be extensively used to enable the participants to interact with one another and with the experts. These activities provide an opportunity to take concepts and techniques from the course and apply them to their real-world situations.

Upon the successful completion of this course, participants will be able to:

- Apply and gain a fundamental knowledge on process safety for operations
- Provide an introduction and overview of the most significant aspects and considerations of process risk management and its relationship to process safety
- Understand the concepts, criteria and methodologies of risk management, and to apply them at a practical level in the design, engineering and operation of facilities
- Analyse the significance of potential process hazards, make initial recommendations to eliminate or reduce those hazards, reduce the

consequences of potential process accidents and to improve the overall safety level of an existing project or facility.

- Discuss the importance of process safety, key principles of plant integrity, asset ownership and management responsibility and risk management in asset operations.
- Identify the risks associated with bypass procedures and apply proper authorisation and control including industry best practices for temporary modifications.
- Establish and maintain safety operating limits and apply process capability assessment and risk identification.
- Identify and manage abnormal situations in operations, early warning systems, response strategies and communication in high-pressure situations.
- Recognize the competency requirements for operations personnel and implement competency frameworks in petroleum operations.
- Identify skill gaps and address them through training as well as discuss regulatory requirement for training.
- Enforce operational discipline to minimize deviations, apply task verification and creating a safety culture.
- Manage access to critical equipment and systems and implement safety protocols for controlling access to hazardous areas
- Identify risks during start-up and shutdown of facilities and apply safe operating procedures (SOPs) for start-up and shutdown
- Employ detailed procedure for start-up of new or modified equipment including best practices for safe commissioning.
- Carryout shutdown protocols, planning and executing safe decommissioning processes and documentation requirements for shutdown and decommissioning
- Maintain the integrity of protective systems through barrier management concepts, inspections and maintenance of safety-critical elements and integrity of electrical equipment in hazardous areas
- Identify and manage loss of containment (LOC) scenarios and apply response mechanisms to leaks and spills
- Carryout management of change (MOC) procedures in petroleum operations and evaluate and approve changes in operations
- Develop and implement emergency response planning (ERP) for petroleum operations and identify potential emergencies and defining response tactics
- Inspect, test and maintain integrity of safety critical elements (SCE'S) and apply performance monitoring of critical safety systems

Who Should Attend

This course is ideal for:

- Managers, supervisors, engineers, safety personnel, and others involved in the design, operation, or maintenance of major hazard or process plants.
- Professionals looking to refresh or improve their process safety knowledge.
- This course is conceived to provide valuable insights to all personnel involved in the management, engineering, process safety, maintenance and operations of process facilities.

Learning Outcomes

By the end of the course, participants will:

- Understand the principles of process safety and its management.
- Recognize the human, environmental, and business consequences of poor process safety.
- Identify hazards and risks in process plants and learn methods to control them.
- Grasp the key requirements for process safety across the lifecycle of a plant.
- Develop knowledge for continuous improvement in process safety management.

Course Outline

Day 1

- The importance of process safety. What is process safety.
- References: CCPS, IOGP, AIChE, CFR
- Hazard and risk identification
- Hazard evaluation methods
- Consequences of incidents: toxicity, fires, explosions, and chemical reactions

Day 2

- Design safety principles
- Risk assessment strategies
- Operations and asset integrity
- Management of change
- Human factors in process safety

Day 3

- Leadership and safety culture
 - Performance monitoring
 - Emergency response planning
 - Assurance processes
 - Open-book assessment and feedback
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Course Instructor

Johan Taljaard is an esteemed international consultant, trainer, and auditor specializing in Process Safety Management (PSM) and risk-based management systems.

With over 42 years of industrial experience in the oil, gas, refinery, Liquid to Gas (LTG), and petrochemical sectors, Johan has cultivated unparalleled expertise in managing complex industrial processes. His career spans more than 30 countries, focusing on process safety, risk management, operational excellence, and the integration of technical and human factors in industrial safety systems.

- **Risk Management:** Specializes in hazard identification, risk assessment, operational control reviews, and catastrophic incident prevention.
- **Incident Investigations:** Conducted investigations for over 300 fatalities and 10 catastrophic process safety incidents, utilizing techniques such as Root Cause Analysis (RCA), TapRoot, ICAM, and Johan's proprietary Hazard-Barrier-Target Analysis method.
- **Process Safety Training:** Designed and delivered training on all elements of process safety management, including Process Hazard Analysis (PHA), Management of Change (MOC), Pre-Startup Safety Review (PSSR), Fundamentals in Process Safety, Risk-Based Process Safety, and Catastrophic Incident Investigation.

Why Attend?

- Gain **Istec Training certificate** recognized globally.
- Learn from **industry experts** with decades of experience across various sectors.
- Enhance your career by developing a robust understanding of process safety management.
- Network with professionals from diverse industries.

In-Company Training Options

We offer tailored in-company training for corporate teams, either on-site or online. This cost-effective option allows customization of content to meet specific organizational needs.

How to Register

1. Visit our website to select your preferred date and location.
2. Complete the registration form.
3. Apply your discount code at checkout (if applicable).

Contact Us

For more information, email us at erica@istecsafety.com or call **+27 84 803 2327**.

Equip yourself with the skills to enhance safety, prevent incidents, and drive operational excellence. Secure your place today