

Fundamentals of Process Safety

Course Objectives



By the end of the course, participants will understand:

- What are the various Process Safety layers and its management process;
- How to identify hazards associated with oil and gas facilities;
- What is meant by Inherently Safe Design concept; What are the various hazardous scenarios that might occur upon accidental hydrocarbon release and hazard consequence modelling basics;
- How to quantify and assess the associated risk and what is meant by ALARP demonstration;
- What are the various Control and Mitigation Measures adopted in Oil & Gas industry to mitigate the Impact of identified hazards to much a safer limit;
- key process safety requirements at each stage in the life cycle of a process plant from conceptual design through to operation stage.

About the speaker



Wael Ismail, Process Safety Specialist – TUV Certified

Wael Ismail has almost 21 Years of experience in Process Safety and Risk Management in oil and Gas Industry worked for international and globally recognized oil & gas companies and project management consultant in Middle East, Far East and North America as Process Safety Specialist. He had a proven Engineering & Design ability in different phases of various major oil and gas projects he had been involved including onshore & offshore facilities. He is TUV Certified Functional Safety Engineer and provided various training courses covering different process safety aspects to ADMA-OPCO Employees as part of the Company's program to utilize the internal talented resources for training and manpower development purposes.

Course Overview



Course Duration:
5 Days

This course will explore the process safety fundamentals and help you to develop the skills and knowledge of various process safety layers starting from the core layer to identify hazards associated with oil and gas facilities to the outer layer by implementing inherently safe design approach to the next outer layer to quantify the ultimate consequence of the identified hazards and evaluate the associated risk to the next outer layer by providing control and mitigation measures to mitigate the impact of the identified hazards to much a safer limit to the final outer layer via implementing procedural safety to control the hazards associated with operation activities at process plants.

This course will also explore the various elements of Process safety Management framework module developed by AICHE.

Course Contents

- History of Process Safety Incidents in Oil and Gas Industry;
- Introduction to Various layers of Process Safety and its management process;
- Basic Hazard Identification Techniques (HAZOP, HAZID & Failure Mode and Effect Analysis);
- Introduction to Inherently Safe Design Concept / Facilities Layout Safety Optimization and control of Ignition sources principles;
- Understanding nature of various Hazards scenarios and Hazard Consequence Analysis Principles;
- Introduction to Hazardous Events Frequency Estimation Principles;
- Overall Methodology of Risk Analysis and Risk Management Process /ALARP Demonstration
- Introduction to Fire Protection System / Fire and Gas Detection System design principles;
- Introduction to procedural safety guidelines to control the hazards associated with operation activities at process plants;
- Introduction to various Elements of Process Safety Management Framework Module and Key Performance Indicators.

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<https://wa.me/+971582817487>



info@etcuae.ae



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Room 301 Haris Otaiba Bldg,
Sheikh Rashid Bin Saeed St. Abu Dhabi, UAE
Call us at 02 666 0736 or
WhatsApp us at [058 281 7487](https://wa.me/+971582817487)