



*Training Course:  
Advanced Process Risk Assessment & Risk  
Management*

*2 - 6 December 2024  
Kigali (Rwanda)*

## Training Course: Advanced Process Risk Assessment & Risk Management

Training Course code: MA6008 From: 2 - 6 December 2024 Venue: Kigali (Rwanda) - Training Course Fees: 5950 € Euro

### Introduction

Health, Safety, and Environmental Management Systems are based on a proactive process for incidents prevention as well as reactive monitoring of performance. Risk assessment is required to be applied to all activities that impact on health & Safety, production, asset, environment, and the Company reputation. In this seminar you will learn how to:

- Improve your practical skills in applying advanced risk assessment techniques relevant to the process industry
- Effectively balance risk against cost in order to optimize risk reduction measures
- Motivate your people for improved safety culture
- Appreciate the role of Quantified Risk Assessment and major hazards
- Apply root-cause analysis to incident investigation and analysis

### Course Objectives of Advanced Process Risk Assessment & Risk Management

- Recognise the difference between hazard, risk and risk assessment
- Learn how to evaluate different types of risk
- Develop the skills of applying advanced risk assessment techniques relevant to the process industry
- Develop a strategy for planning and implementing risk reduction action plans
- Appreciate the contribution of human error to accidents
- Be able to apply advanced techniques for root-cause analysis for incidents

### Course Methodology of Advanced Process Risk Assessment & Risk Management

Participants will learn by active participation during the program through the use of exercises, syndicate and group discussion, training videos, and discussions on relevant types of accidents and "real life" issues in their organizations.

### Course Summary of Advanced Process Risk Assessment & Risk Management

The program aims to provide hands-on experience in the application of advanced risk assessment techniques in all aspects of the process industry. It includes analysis of the consequences of major hazards, in terms of fire, explosion, and toxic releases. These are modeled using advanced commercial software. Aspects of human error in relation to accidents are analyzed and included in methods for promoting a positive safety culture in your organization.

This training session also explores the role of analytical investigation and root-cause analysis based on Fault Tree Analysis.

Participants will be able to apply skills learned from this training at a practical level to implement the Company's HSE Management System. In addition to your professional development, your organization should be able to implement, monitor and review HSE action plans.

## Course Outlines of Advanced Process Risk Assessment & Risk Management

### DAY 1 - Advanced Risk Assessment Techniques 1: HAZOP

- Introduction to hazards identification and analysis techniques
- Techniques for hazard identification and analysis- HAZOP
- Syndicate exercise- application of HAZOP to batch and continuous processes
- Integrating HAZOP within the risk management system
- Review of commercial HAZOP software

### DAY 2 - The role of Quantified Risk Assessment [QRA]

- Failure Modes & Effects Analysis [FMEA]
- Decision trees and Event Tree Analysis [ETA]
- Sources of failure data
- Fault Tree Analysis [FTA]
- Quantification of ETA and FTA
- Evaluation of Individual and Societal Risks

### DAY 3 - Mechanics of Fire, Explosion and Toxic Releases

- The role of consequence analysis in QRA
- Types of Fires: Jet flame, pool fire, flash fire, BLEVE
- Types of Explosion: VCE, UVCE, pressure burst, dust explosion
- Vulnerability analysis
- Commercial software for modeling releases, fire, explosion and toxic releases

### DAY 4 - Advanced Incidents Investigation Techniques

- The human contribution to accidents
- The role of root cause Analysis in identifying management system failures
- Accident investigation techniques
- Latent failure and root causes for incidents
- Techniques for root-cause analysis

### DAY 5 - Promoting a positive safety culture

- Introduction to Safety Culture
- Techniques for improving safety culture
- Measuring improvements in safety culture
- Integrating safety culture within the HSE Management System

## Registration form on the Training Course: Advanced Process Risk Assessment & Risk Management

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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### Person Responsible for Training and Development

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### Payment Method

- Please find enclosed a cheque made payable to Global Horizon
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