

Training - Safety Engineering - Advanced techniques - Module 2



SAFENG2-EN-P



Face-to-face only



5 days

This course provides the knowledge and tools for coordinating HSE studies, for the different stages of an onshore or offshore, Oil & Gas, grass-roots or major revamping project

Level

Skilled

Public

Safety engineers, HSE superintendents, other engineers and managers (environment, project, process, instrument and operations) involved in operating or designing and implementing major projects

Objectives

Attendees will be able to implement the following skills:

- Describe the probabilistic methods of safety engineering and typical safety systems design
- Design safety systems including firewater, fire and gas detection, and over-pressure relief
- Take part in risk assessment and project evaluation
- Contribute to a corporate, experience-based, safety culture

Pedagogical & technical resources

- Highly interactive training by industry specialist lecturer
- Numerous applications and illustrations
- Several case studies and teamwork sessions

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsible

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

INHERENTLY SAFER PLANT DESIGN

0.25 day

Possible options for the elimination of a hazard.
Provision or addition of control means.

Limitation of inventories of hazardous products.

CONSEQUENCE ANALYSIS METHODOLOGY

0.75 day

Examples of types of scenarios to be considered.

Consequence modeling e.g. blast overpressure, dispersion modeling...

Criteria for impact assessment.

Exercise.

QUANTITATIVE RISK ASSESSMENT (QRA)

1 day

Methodology to be used.

Systematic QRA approach (step by step).

Assessment and improvement.

Case studies and application.

SAFETY INSTRUMENTED SYSTEMS (SIS)

1 day

Examples of Safety Instrumented Systems and performance targets.

Typical architecture.

Safety Instrumented Function (SIF) and Safety Integrity Level (SIL).

Design of ESD systems, hierarchy of ESD and actions, causes and effects.

DESIGN OF FIRE & GAS (F&G) DETECTION SYSTEMS

1 day

Selection of F&G detector types.

Positioning of F&G detectors.

Logic associated with the activation of the F&G detectors.

ACTIVE & PASSIVE FIRE PROTECTION

0.5 day

Design of firewater network, calculations for firewater demand.

Fire protection using water, foam, dry chemicals and inert gas.

Firewater systems, pump types and selection guidance.

Practical exercise.

HUMAN FACTORS & HUMAN ERRORS

0.5 day

Human factors in process control. Alarm systems.

Human error in process plants. Downgraded situations.

Emergency situations.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.

Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com