Training - Safety Engineering - Project - Module 3

SAFENG3-EN-P | Face-to-face only | 5 days

This course provides the knowledge necessary to assess and mitigate risks involved in designing, constructing and operating Oil & Gas processing facilities

Level

Skilled

Public

Engineers, technicians and staff (environment, project, process, instrument and operations) involved in operating Oil & Gas field processing facilities or in designing Oil & Gas projects architecture

Objectives

Attendees will be able to implement the following skills:

- Apply HSE standards, process hazards analysis methods and key safety management rules
- Explain the contents of standard hazard studies
- Select safety systems including firewater, fire and gas detection
- Take part in risk assessment and project evaluation for offshore and onshore facilities

Pedagogical & technical resources

- Highly interactive and participative training method where a mini-project will be presented, so the different workshop activities will be applied to this project
- Workshop sessions with several exercises, applications, real case studies
- Brainstorming sessions in small groups, with reporting
- Plenary sessions to consolidate fundamental knowledge and discuss results of workshop 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, including group presentations

Prerequisites

No prerequisites are necessary to follow this course

Responsable

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

SAFETY ENGINEERING MINI-PROJECT FOR A SPECIFIC SURFACE PRODUCTION FACILITY

Throughout the course, the participants will be guided in the development of safety engineering studies for a production facility. The various workshops performed throughout the week will thus enable the constitution of a safety dossier for a given production facility. Each workshop will comprise of a plenary training session, which will provide the theory required for the participants to then work on their case study. For this purpose, participants will be grouped in teams. Following each case study, debriefing sessions are organized, during which the results are presented by and discussed with the participants.

HAZARD IDENTIFICATION: HAZID/HAZOP — 1 day

Plenary session (0.25 day)

- HSE Fundamentals: definitions, hazard studies, risk assessment, environmental issues.
- Risk analysis methodology: definitions, vocabulary, deterministic and probabilistic methods, preliminary hazard analysis.

Workshop (0.5 day)

- HAZID exercise.
- Hazard and operability (HAZOP) application.

Plenary session (0.25 day)

- Workshop results, Day 1 debriefing, questions-answers.

MAJOR HAZARD ASSESSMENT - CONSEQUENCE ANALYSIS — 1 day

Plenary session (0.25 day)

- Major hazard assessment on process plants.
- Consequence analysis methodology.

Workshop (0.5 day)

- Major accident hazard representation. Bowtie diagram practice.
- Consequences analysis: dispersions, explosions (VCE, BLEVE), boil over, jet fire, etc. Criteria for impact assessment.

Plenary session (0.25 day)

- Workshop results, Day 2 debriefing, questions-answers.

PLANT LAYOUT - QRA — 1 day

Plenary session (0.25 day)

- Plot plan review: safety engineering approach to plant layout.

Workshop (0.5 day)

- Plant layout (safety optimization), plant layout exercise and case study.
- Quantitative Risk Assessment: systematic QRA approach (step by step). Assessment and improvement, applications.

Plenary session (0.25 day)

- Workshop results, Day 3 debriefing, questions-answers.

SAFETY INSTRUMENTED SYSTEMS (SIS) — 1 day

Plenary session (0.25 day)

- Introduction to Safety Instrumented Systems (SIS).
- Fire & Gas (F&G) detection system.
- Emergency shutdown cause and effects matrix.

Workshop (0.5 day)

- Determination of SIL level requirements.
- F&G systems. Case study for layout and equipment selection.

- ESD causes and effects matrix development exercise.

Plenary session (0.25 day)

- Workshop results, Day 4 debriefing, questions-answers.

FIRE PROTECTION & EMERGENCY RESPONSE — 1 day

Plenary session (0.25 day)

- Passive fire protection.
- Active fire protection.
- Emergency escape, evacuation and rescue resources.

Workshop (0.5 day)

- Active fire protection systems. Case study for layout design and equipment selection.
- Emergency response. Historical incidents.

Plenary session (0.25 day)

- Workshop results, Day 5 debriefing, questions-answers.

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