Training - Industrial Safety Engineer

SECUIND-EN-P | Face-to-face only | 35 days

This course provides a deeper knowledge on how to master the main aspects of the industrial safety engineer position

IFP Training Certificate

Graduate Certificate

Level

Skilled

Public

Engineers recently assigned to the HSE department in the following industries:

- Also available for experienced personnel designed to evolve in HSE function

Objectives

Attendees will be able to implement the following skills:

- List the tools needed for overall security management
- List the techniques needed for overall safety management
- Cite the strengths and weaknesses of the tools according to the context
- Clarify the limitations of the techniques needed for overall safety management
- Describe the roles of an industrial safety engineer

Pedagogical & technical resources

- Practical workshops on industrial equipment
- Site visit and studies based on industrial documents
- Real-life firefighting exercises
- Lecturing by industry experts
- Real incidents and accidents case studies
- Continuous validation, in order to obtain IFP Training Certificate

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

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

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Program

WELCOME - PRESENTATION — 1 day

- Initial competency assessment.
- Role of HSE engineer within company. Mission and responsibilities of the safety engineer.

RISKS RELATED TO FLUIDS BEHAVIOR — 4 days

- Process mapping. Products knowledge.
- Gas compression and expansion. Liquid-vapor equilibrium. Energies at stake.
- Pressure in a vessel and consequences of heat addition or withdrawal. Risk assessment and operating precautions.

RISKS RELATED TO EQUIPMENT — 5 days

- Piping - Thermal equipment - Storage equipment - Pressure vessels.
- Transport - Loading/offloading units: tank trucks, tank rail cars, cargo ships.
- Rotating machinery: pumps, compressors, steam turbines, gas turbines...
- Instrumentation and process control.

INHERENTLY SAFER DESIGN — 5 days

- Phenomenology: phenomena of combustion: combustion of gaseous mixtures, liquids and solids. Effect of combustion. BLEVE/boil-over/backdraft/flash-over.
- Taking industrial risk into account.
- Layout based on risk analysis. Implementation of safety barriers: kinds and criteria of effectiveness.
- Prevention and care against fire and explosion hazards: control or removal of flammable mixtures, sources of ignition. Control of emission sources.
- Knowledge of pressure equipment and atmospheric storage - Protection against overpressure and depressions.
- Introduction to instrumented safety systems (SIS). Reliability level.

MITIGATION & PROTECTION MEANS — 5 days

- Gas detectors, fire detectors (smoke, flames, heat, etc.), liquid hydrocarbons detectors.
- Passive and active fire protection.
- Firefighting strategies: basic rules, means and methods of intervention, organization and management of rescue, strategy of intervention. Emergency response plans.

CONTROL OF RISKS RELATED TO WORK ON FACILITIES — 5 days

- Safety during commissioning and decommissioning operations.
- Lockout tag-out procedures.
- Safety in maintenance and construction works: specific risks and corresponding precautions. Permit to work. Integration of safety in preparation, implementation and work surveillance.

HSE RISK MANAGEMENT — 5 days

- Health, Safety and Environment Management System (HSE-MS): structure, implementation and administration of a HSE management system.

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- Setting up an HSE culture.
- Risk assessment methods: HAZID, HAZOP, Bow tie analysis, QRA.
- Prevention tools and means, crisis and intervention management. Human factors.
- Management of change - Improvement and maintenance of safety barriers HSE approach in projects.

ENVIRONMENT PROTECTION — 2 days

- Importance of environment protection for human being, for company. Awareness - Sustainable development.
- Environment impact assessment.
- Air, water and soil protection. Origin, nature, treatment and reduction of pollutions.
- Waste management: sorting and elimination routes.

INDUSTRIAL HYGIENE - HEALTH AT WORK — 2 days

- Professional risks: chemical risks, physical risks, toxicological risks.
- Prevention. Collective and personal protection equipment.
- Risk management: work station assessment, material safety data sheet, medical check-up.

FINAL ASSESSMENT - SESSION SYNTHESIS — 1 day

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

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