WSEE

Training Catalogue 2024

INDUSTRY

Date of Issue: January 2024

CONTENTS

WSEE INDUSTRY TRAINING

Process Safety Management (PSM) Course

Course code: PS101

Duration: 40 hours

Prerequisite: Some experience in chemical industry activities would be beneficial

Delivery: Classroom only

Instructors: 1 – 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

Who should attend:

Managers, Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore, dealing with hazardous chemicals.

Objectives:

Identify and manage the risks posed by hazardous materials and substances and to prevent unwanted releases of such chemicals especially into locations that could expose employees and others to serious hazards

Description:

The scope of this course is to familiarise participants with the main components of a Process Safety Management program, which major objectives are to identify the risks posed by hazardous chemicals and to prevent unwanted releases of such chemicals especially into locations that could expose employees and others to serious hazards. An effective PSM program requires a systematic approach to evaluating the whole chemical process. Using this approach, the process design, process technology, process changes, operational and maintenance activities and procedures, non-routine activities and procedures, emergency preparedness plans and procedures, training programs, and other elements that affect the process are all considered in the evaluation.

Content:

- Definition of a Process Safety Management system
- The importance of a Process Safety Management
- Key elements of a Process Safety Management framework
- PSM and the Regulations in the Economic Commission for Europe and in USA, respectively
- Risk Management in Chemical Process Industry
- Risk Assessment
- Process Hazards Evaluation Techniques

Occupational Health and Safety Management Systems – ISO 45001

Course code: PS102

Duration: 40 hours

Prerequisite: Some experience in chemical industry activities would be beneficial

Delivery: Classroom only

Instructors: 1 – 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

Who should attend:

Directors, managers, engineers and technicians working in the chemical, petrochemical, oil and gas refining industry, onshore or offshore, dealing with hazardous chemicals.

Objectives:

Provide an overview of the ISO 45001 Standard, which goal is the reduction of occupational injuries and diseases, including promoting and protecting physical and mental health.

Description:

The scope of this course is to familiarise participants with the main components of ISO 45001 management systems. The course also covers the main changes compared com OHSAS 18001 Standard

Content:

- Context of the organization
- Leadership and worker participation
- Planning
- Support
- Operation
- Performance evaluation
- Improvement

Loss Prevention in the Chemical & Petrochemical Industry

Course code: LP 101

Duration: 40 hours

Prerequisite: None

Delivery: Classroom only

Instructors: 1 - 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Managers, Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore

Objectives:

Minimize and eliminate the risks to employees, the public and the environment from exposure to major hazard events in the petrochemical industry

Description:

The course covers the major process safety and loss prevention issues that affect the chemical process industries today.

The participants will learn and apply the latest tools and techniques that have been developed by process safety professionals to manage process safety risks and giving emphasis in practices to control hazards

Content:

Management Leadership, Industry Safety & Loss Trends, Risks Management, Safety Critical Systems, Safety and Environmental concerns, Hazard Accident and Loss, Legislation and Law, Reliability Engineering, Hazard Assessment, Plant layout, Process Design, Pressure system design and control, Human Factors, Emission dispersion, toxic release, Fire and fire control, Transportation risks, Accident investigation, Economics and Insurance

Risk Management in Chemical Facilities

Course code: RM101

Duration: 40 hours

Prerequisite: Some experience in chemical industry activities would be beneficial

Delivery: Classroom only

Instructors: 1 - 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Managers, Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore

Objectives:

Minimize and eliminate the risks to employees, the public and the environment from exposure to major hazard events in the petrochemical industry

Description:

The scope of this course is to familiarise participants with

the main components of a Risk Management program based on ISO 31000, which major objectives are to identify all major internal and external risks, analysis of the impact of those risks. The purpose of risk management is to ensure that adequate measures are taken to protect people, the environment and assets from harmful consequences of the activities being undertaken, as well as balancing different concerns, in particular HES (Health, Environment and Safety) and costs. Risk management includes measures both to avoid occurrence of hazards and reduce their potential harms.

Content:

- Definition of Process Risk Management
- Risk Identification
- Risk Analysis (Qualitative and quantitative)
- Risk Response Planning
- Risk Monitoring, Controlling and Reporting

Energy, Environment & Safety (EES) Capacity Building

Course code: ES 101

Duration: 4 hours

Prerequisite: None

Delivery: Classroom only

Instructors: 1 - 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Energy and environmental managers, energy policy makers, engineers and technicians working in the energy transition agenda

Objectives:

Acquire updated information about the energy transition movement and the climate change impact in world´s peace and energy security

Description:

This capacity building course covers topics such as energy policy concepts, hydrogen technology, hydrogen uses, hydrogen local and transnational transportation and distribution, and the constraints for a transition to a hydrogen economy.

Content:

- Energy Policy Concepts
- Peace and Energy security
- Climate Change Mitigation
- Energy Transition Concepts
- Strategies for Hydrogen Promotion
- Hydrogen Technology
- Hydrogen Production Processes
- Hydrogen Feedstocks and Processes
- Hydrogen Safety
- Transport Sectors
- Power Generation
- Transportation of Hydrogen by pipeline gas (mix H2-NG) and tankers
- Technology Maturity and Deployment
- Feedstock Availability
- Supply Chain Constraints

Design of Safety Relief Devices for the Chemical/ Petrochemical Process Industry

Course code: PS 103

Duration: 40 hours

Prerequisite: None

Delivery: Classroom only

Instructors: 1 – 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore

Objectives:

Acquire the techniques for the design, construction, installation, operation, inspection and maintenance of pressure relieving devices

Description:

The pressure relief device is the most important single safety device on a boiler or pressure vessel (PRD) to prevent overpressure conditions and catastrophic explosions. The course will enable the participants to learn a comprehensive review of the design, construction, installation, operation, inspection and maintenance of pressure relieving devices currently in use on boilers and pressure vessels details how to protect pressurized equipment from exceeding the maximum allowable working pressure.

Content:

- ASME Boiler and pressure Vessel Code and the ASME Pressure Piping Codes
- Design, construction and manufacturing requirements of pressure relief devices
- Selection of materials for various types of pressure relief valves, and rupture disks
- API RP 520 Part I, Sizing and Selection of Pressure Relieving Devices, API RP 520 Part -2, Installation of Pressure Relief Devices, and API RP 576 - Inspection of Pressure Relief Devices
- Design and calculations for sizing and selection of pressure relief devices for single phase flow of fluids
- Handling of transportation, storage, installation, and maintenance of PRD's
- Identify the requirements for testing and testing facilities
- American and European inspections Codes and API standards

Chemical Safety Awareness - Industry

Course code: PS 104

Duration: 40 hours

Prerequisite: None

Delivery: Classroom only

Instructors: 1 - 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore facilities

Objectives:

Acquire a good understanding of the safe handling and storage of all chemicals regardless of where they are used for and their potential reactivity, toxicity, explosivity, flammability and other specific risks associated

Description:

This course covers the nature, properties, reactivity and risks associated to hazardous chemicals. Their Identification, labelling, safe handling, personal protective equipment, detection and monitoring technologies. This course also introduces process hazards analysis (PHA) and to health, safety and environmental (HSE) programs.

Content:

- Chemical's reactivity (NIOSH Pocket Guide)
- Safe handling, storage and transportation
- Labelling and DOT Markings
- Importance of Safety Data sheets information

Plant Maintenance Non-Destructive Evaluation for Personnel and Operators

Course code: PM 101

Duration: 10 days

Prerequisite: Medical clearance from employer to work in personal protective equipment and registered as a radiation worker

Delivery: Classroom and outdoors practical training

Instructors: 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore facilities dealing and working with NDE equipment

Objectives:

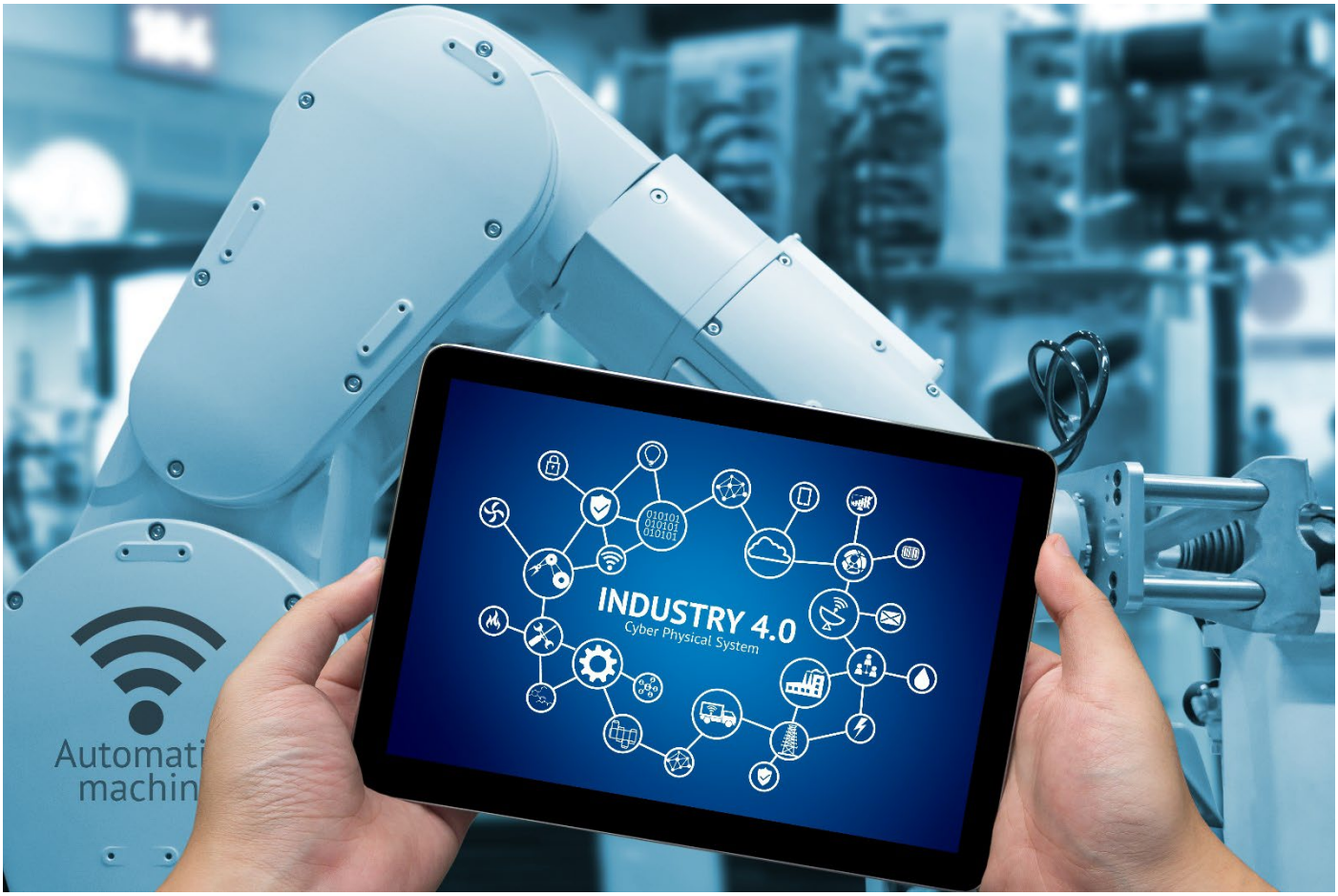
Acquire a good understanding of the techniques and procedures to proper set up, to calibrate, operate and interpret the results of NDT equipment

Description:

This course is to enable NDT Level II operators to set up and calibrate equipment, conduct tests, and to interpret, evaluate and document results of NDT

Content:

- Radiation safety
- Safe handling, setup and use of NDE equipment
- Interpretation of NDE results
- Reporting



NORM Radiation Safety Awareness

Course code: RS 101

Duration: 30 hours

Prerequisite: None

Delivery: Classroom only

Instructors: 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

NORM is a mandatory safety course for employees who work in environments that contain naturally radioactive elements

Objectives:

Acquire a good understanding of Naturally Occurring Radioactive Materials (NORM) including its origins, a basic understanding of radiation and its associated potential health hazards, and how to detect NORM and control radiation exposures

Description:

This classroom course familiarises participants with the naturally occurring radioactive materials (NORM), the different types of radiation, detection principles, and protective measures

Content:

- Radiation safety
- Types of activities that NORM can be present
- Detection devices
- Protective measures
- Equipment cleaning and maintenance safety precautions

Introduction to Facility Risk Analysis – External Threats

Course code: RM102

Duration: 8 to 16 hours

Prerequisite: Risk Management in Chemical Facilities would be beneficial

Delivery: Classroom only

Instructors: 1 - 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Managers, Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore

Objectives:

Identify the risks of external threats to minimize and/or eliminate the identified risks to facilities and personnel

Description:

This course on risk analysis is designed to identify, categorize, and prioritize possible attack threat scenarios

Content:

- Threat analysis: overview and definition
- Threats and trends: terrorist and criminal/local and external
- Target awareness
- Surveillance detection
- Practical solutions

Introduction to Vulnerability Analysis – External and Internal Threats

Course code: RM103

Duration: 8 to 24 hours

Prerequisite: Risk Management in Chemical Facilities would be beneficial

Delivery: Classroom only

Instructors: 1 – 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Managers, Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore

Objectives:

Help organizations to identify the vulnerabilities of the facility to external and internal threats posed by rogue actors and measures to reduce vulnerabilities within organization´s work environment

Description:

This course is designed to identify, categorize, and prioritize the vulnerabilities within the facility to possible attack threat scenarios. The course offers a sequential, methodical, logical, and analytical approach to evaluate the vulnerability of any organization to any sort of terrorist attack.

Countermeasures are evaluated for effectiveness and additional measures are proposed.

Each vulnerability is compared with potential attack threat scenarios to allow security and emergency manager to better understanding the current readiness position of their respective organization

Content:

- Threat analysis: overview and definition
- Threats and trends: terrorist and criminal/local and external
- Target awareness and check for vulnerabilities
- Surveillance detection
- Practical solutions

Hazards and Operability Study (HAZOPS)

Course code: PS105

Duration: 40 hours
Prerequisite: Field experience
Delivery: Classroom only
Instructors: 1 – 2
Number of Participants: 20
Award/Certification: Certificate of Attendance

***Who should attend*:**

Managers, Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore

Objectives:

The purpose of this course is to present the principles and procedures of Hazard and Operability (HAZOP) Studies.

- identifying potential hazards in the system.
- identifying potential operability problems with the system and in particular identifying causes of operational disturbances and production deviations likely to lead to nonconforming products.

Description:

An important benefit of HAZOP studies is that the resulting knowledge, obtained by identifying potential hazards and operability problems in a structured and systematic manner, is of great assistance in determining appropriate remedial measures

Content:

- Definition of scope and objectives, responsibilities and selection of the team
- Preparation: how to plan the study, collect data, record the finds and estimation of time and schedule
- How to make the examination. The examination is a creative process, and proceeds by systematically using a series of guide words to identify potential deviations from the design intent and employing these deviations as “triggering devices” to stimulate team members to envisage how the deviation might occur and what might be the consequences.
- How to prepare the HAZOP report

Security Vulnerability Assessment for Petroleum and Petrochemical Industries

Course code: RM104

Duration: 40 hours

Prerequisite: None

Delivery: Classroom only

Instructors: 1 – 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Managers, Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore

Objectives:

The course covers the approach for assessing security vulnerabilities that is widely applicable to the types of facilities operated by the industry and the security issues they face.

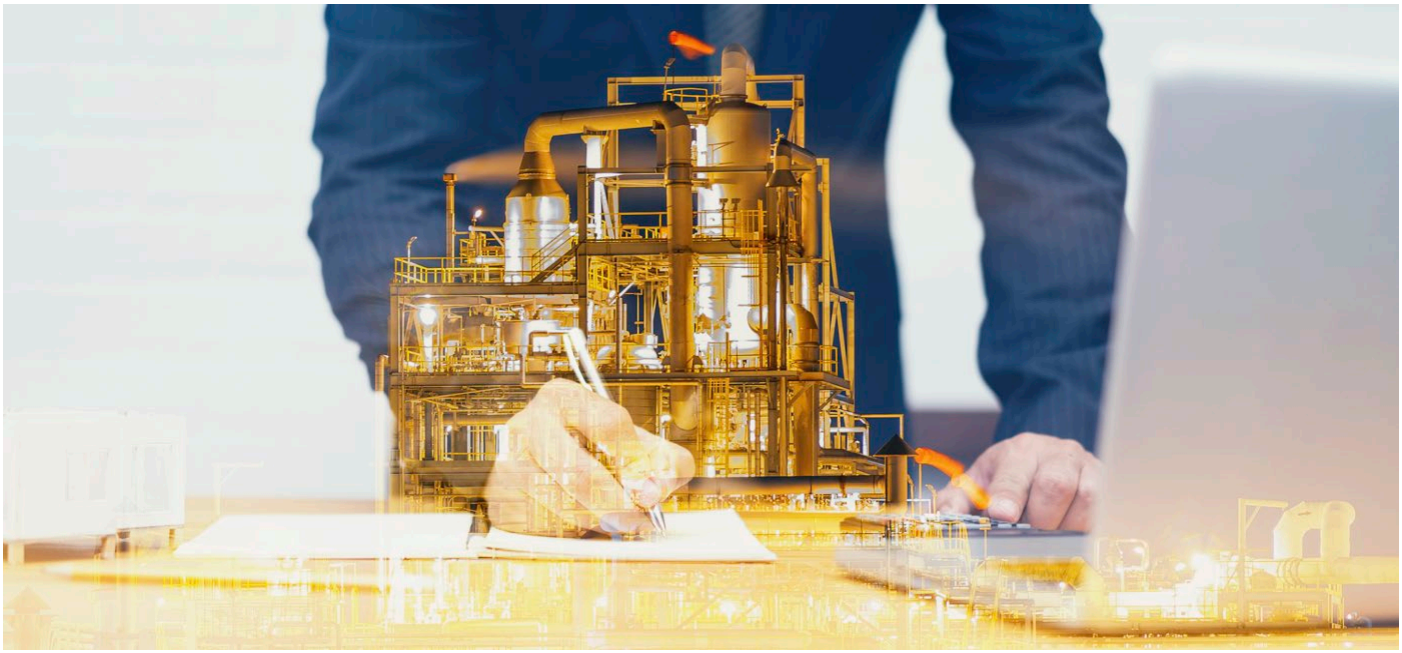
Description:

SVA is a tool to assist management in making decisions on the need for countermeasures to address the
threats and vulnerabilities

Content:

The course covers the following activities:

- Characterize the facility to understand what critical assets need to be secured, their importance and their interdependencies and supporting infrastructure;
- Identify and characterize threats against those assets and evaluate the assets in terms of attractiveness of the targets to each adversary and the consequences if they are damaged or stolen;
- Identify potential security vulnerabilities that threaten the asset´s service or integrity;
- Determine the risk represented by these events or conditions by determining the likelihood of a successful event and the consequences of an event if it were to occur;
- Rank the risk of the event occurring and, if high risk, make recommendations for lowering the risk;
- Identify and evaluate risk mitigation options (both net risk reduction and benefit/cost analyses) and re-assess risk to ensure adequate countermeasures are being applied.



Disaster/Emergency Management and Business Continuity Programs – An Overview

Course code: RM105

Duration: 40 hours

Prerequisite: Some experience in chemical industry activities would be beneficial

Delivery: Classroom only

Instructors: 1 - 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Directors, Managers, Engineers and technicians working in the Chemical, petrochemical, Oil and Gas refining industry, onshore or offshore

Objectives:

Provide an overview of ISO 22301 Standard on Disaster/Emergency Management and Business Continuity Programs

Description:

The scope of this course is to provide a good understanding of the key elements involved in the elaboration a comprehensive business continuity program

Content - Overview of program elements:

- Risk assessment
- Incident prevention
- Mitigation
- Resource Management
- Mutual Aid/Assistance
- Planning
- Incident Management
- Communications and Warning
- Operational Procedures
- Facilities
- Training
- Exercises, Evaluations, and Corrective Actions
- Crisis Communications and Public Information
- Finance and Administration

Transportation, Handling and Storage of Dangerous Goods

Course code: SG101

Duration: 15 hours

Prerequisite: Some experience in storage of chemicals and on industry activities would be beneficial

Delivery: Classroom only

Instructors: 1 – 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Managers and personnel who have responsibility for the storage of dangerous substances, regardless of the size of storage facility, as well as inspectors responsible for enforcing health and safety legislation within them and other staff involved with the store's activities.

Objectives:

Help assess and reduce the risks associated with the transport, handling and storage of packaged dangerous substances. Advise on safe management procedures and precautions to reduce injuries and damage caused by incidents involving the handling of packaged dangerous substances

Description:

Over the course of 12 presentations, we learn how we can eliminate or reduce risks to people involved in this type of work activity, also advice for operators of storage sites for packaged dangerous substances, this applies to transit or distribution warehouses, open-air storage compounds and facilities associated with a chemical production site or chemical warehousing

Content - Overview of program elements:

- Who is responsible - Legal responsibilities
- Hazard identification and risk assessment.
- Hazard Classification: CLP Regulation/UK REACH
- Dangerous goods classification.
- Hazard v Risk.
- Receipt of goods and storage.
- Handling and Storage.
- Handling and Transport.
- Security.
- Maintenance and Modifications.
- Storage of Hazardous waste.
- Spillage Control.
- Hazardous area classification.
- Emergency Arrangements.
- Emergency Procedures

Capacity Building in Emergency Response

Course code: CB101

Duration: 8 hours

Prerequisite: None

Delivery: Classroom only

Instructors: 1 – 2

Number of Participants: 20

Award/Certification: Certificate of Attendance

***Who should attend*:**

Those involved in the setting up of response teams for incidents and emergency response.

Objectives:

To show by examples the dangers that surround us and how we can mitigate these by practices and awareness, together with trained teams

Description:

A series of 8 presentations giving practical advice and insights into setting up and improving upon capacity building

Content - Overview of program elements:

- Why.
- Practical considerations
- Capacity Building
- Warning Systems
- Getting started
- Setting up
- National examples
- Tools
- Special features and considerations for a chemical incident

Hydrogen Incident Recovery - Guidance

Course code: HS101

Duration: 8 hours
Prerequisite: None

Delivery: Classroom only
Instructors: 1
Number of Participants: 20
Award/Certification: Certificate of Attendance

***Who should attend*:**

Directors, managers, engineers and technicians working in the chemical, petrochemical, oil and gas refining industry, onshore or offshore, dealing with hydrogen.

Objectives:

To show practical guidance to help organizations to recover from a hydrogen incident and return to normal operations

Description:

This short course does not cover the immediate emergency response and initial investigations performed by other entities. This course goes over a series of checklists and procedures which will help with the recovery.

Content - Overview of program elements:

- Planning
- Response
- Mitigation
- Recovery
- Communication protocols:
    - Post-event briefing
    - External communications
    - Investigations
    - Facility/Operations Modifications
    - Final Reporting

WSEE

TRAINING CATALOGUE SAFETY & SECURITY

Technology to serve the Mankind

Worldwide training

Our increased focus on worldwide training, including basic and advanced user courses, and the high level of expertise of our team of instructors, benefit users in all regions. Our training catalogue lists our many and varied technical courses and workshops spread across all brands. In addition we run customer specific courses.

Want to know more
Contact WSEE Support and Training
Nieuwe Parklaan 17
2597 LA, The Hague
Netherlands

E-mail: info@technofer.nl
https://wsee-institute.com/