

MARINE HAZARDS PREVENTION & CONTROL

MAR003

COURSE DESCRIPTION

This course covers marine hazard prevention and control techniques including qualitative and quantitative risk analysis as applied for the marine and offshore industries. Discuss the range of general process hazards that may result in loss of containment or loss of production with the consequent potential for on-site and off-site injury Marine Hazard Identification Techniques, Maritime Guidance Documents, Systems used to prevent and control marine hazards.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary to be familiar with the marine hazard prevention and control to ensure that work is carried out safely.

COURSE OBJECTIVES

By the end of this course the participant will be able to:

- Discusses the range of general process hazards in marine that may result in loss of containment or loss of production with the consequent potential for on-site and off-site injury.
- Apply the hazard identification techniques.
- Understand how to rank and prioritize hazards.
- Prepare and use maritime guidance documents.
- Understand systems used to prevent and control marine hazards.

WHO CAN BENEFIT

Tug Masters and Controllers (PO)

COURSE DURATION

5 working days.

COURSE OUTLINE

1. General Process Hazards in Marine

- Flammability – Fire/Explosion/Ignition and Prevention.
- Materials of Construction and Corrosion.
- Health Hazards Awareness.
- Reactive Chemical Hazards.

- Process Equipment (Loading/Unloading, Storage, Unit Operations).
- Electrical System Hazards.
- Piping Systems.
- Heat Transfer Fluid System Issues.
- Thermal Insulation Issues.
- Human Error.
- How hazards are ranked and prioritized.

2. Marine Hazard Identification Techniques

- Risk Identification and Assessment [Process Hazard Assessment (PHA) and Risk].
 - Introduction to:
 - What-If.
 - Checklist.
 - What-If/Checklist.
 - HAZOP - Hazard and operability analysis.
 - LOPA - Layer of Protection Analysis technique.
 - FTA- Fault Tree Analysis.
 - QRA - Quantitative Risk Assessment.

3. Maritime Guidance Documents

4. Systems used to prevent and control marine hazards:

- Engineering Controls.
 - Design the facility, equipment, or process to remove the hazard or substitute something that is not hazardous.
 - Enclose the hazard to prevent exposure in normal operations.
 - Establish barriers or local ventilation to reduce exposure to the hazard in normal operations.
- Safe Work Practices.
 - Respiratory Protection.
 - Lockout/Tagout.
 - Confined Space Entry.
 - Hazard Communication.
 - Blood borne Pathogens.
 - Hearing Conservation.
 - Laboratory Chemical Hygiene.

- Administrative Controls.
 - Additional relief workers.
 - Exercise breaks and rotation of workers.
- Personal Protective Equipment (PPE).
 - OSHA's standard.
 - Hazard awareness and training.
 - Proper equipment.
- Systems to Track Hazard Correction.
 - Documentation of hazard corrections.
- Preventive Maintenance Systems.
 - Reliable scheduling and documentation of maintenance activity.
 - OSHA standards.
- Emergency Preparation.
 - Survey of possible emergencies.
 - Planning actions to reduce impact on the workplace.
 - Employee information and training.
 - Emergency drills as needed.
- Medical Programs.
 - Type of processes and materials and the related hazards.

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