Oil Spill Response and Marine Pollution Prevention: Contingency Planning and Tiered Response

1 – 5 March 2027
Barcelona - Eixample district four-star



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Introduction:

Marine pollution prevention and oil spill response management fail most often at the planning stage: contingency plans that no one has exercised, sensitivity maps that are out of date and response tiers that were never matched to real equipment. This Core Concept course gives port, terminal, offshore and environmental practitioners a working method to identify pollution sources, predict how spilled oil behaves, select response techniques and run a spill incident command structure. Participants work through a timed spill simulation and produce an Oil Spill Contingency Plan and Tiered Response Playbook for their own operation.

Course Objectives:

- Identify ship, offshore and coastal industry sources of marine pollution and map them against the MARPOL scope, ballast water and marine debris controls
- Predict the behaviour and fate of spilled oil from oil type, weather and sea state to set response priorities
- Size Tier 1, Tier 2 and Tier 3 response capability and write an oil spill contingency plan that links scenarios to resources
- Select containment and recovery, dispersant, in-situ burning and shoreline clean-up techniques using environmental sensitivity maps
- Organise spill incident command, response waste handling and operational reporting during a live spill
- Design spill drills and exercises and turn lessons learned into plan revisions

Target Audience:

- Staff who run environmental and pollution control duties at ports, harbours and marine terminals
- Offshore installation personnel responsible for spill preparedness, response equipment and reporting
- Marine operations and harbour teams who deploy booms, skimmers and response vessels
- Environmental coordinators who maintain sensitivity maps, permits and pollution incident records
- Emergency response team members assigned to spill command, logistics or shoreline clean-up roles

Course Outline:

Day 1: Marine Pollution Sources and Oil Spill Risk Context

- Marine Pollution Source Inventory: Ships, Offshore Installations and Coastal Industry
- MARPOL Scope at Overview: Oil, Noxious Liquids, Packaged Goods, Sewage, Garbage and Air Emissions
- Ballast Water and Invasive Species Transfer at Overview
- Marine Debris and Garbage Pathways from Ports and Vessels
- Operational Spill Risk Register and Current-State Preparedness Checklist

Day 2: Oil Behaviour, Fate and Tiered Preparedness Framework

- Oil Properties: Density, Viscosity, Pour Point and Persistent Versus Non-Persistent Oils
- Weathering Processes: Spreading, Evaporation, Emulsification, Natural Dispersion and Biodegradation
- Slick Trajectory Estimation from Wind, Current and Tide Data
- Tier 1, Tier 2 and Tier 3 Preparedness and Response Framework
- Worst-Case Discharge Scenario Selection and Response Capability Gap Analysis

Day 3: Contingency Planning and At-Sea Response Techniques

- Oil Spill Contingency Plan Structure: Scenarios, Resources, Notification and Call-Out
- Boom Selection, Deployment Configurations and Containment Failure Modes
- Skimmer Types, Recovery Rate Calculation and Temporary Storage Sizing
- Dispersant Use Decision Process: Net Environmental Benefit and Application Methods
- In-Situ Burning Conditions, Safety Zones and Residue Recovery

Day 4: Shoreline Protection, Response Waste and Spill Incident Command

- Environmental Sensitivity Index Mapping: Shoreline Ranking, Biological and Human-Use Resources
- Shoreline Clean-Up Assessment Technique and Clean-Up Method Selection
- Oily Waste Segregation, Temporary Storage and Disposal Route Planning
- Spill Incident Command Structure: Command, Operations, Planning, Logistics and Finance Roles
- Incident Action Plan, Situation Reports and Response Termination Criteria

Day 5: Spill Response Simulation, Exercises and the Contingency Plan

- Timed Tier 2 Spill Simulation: Notification, Mobilisation and First Operational Period
- Tabletop and Equipment Deployment Exercise Design with Evaluation Criteria
- Post-Incident Review and Lessons Learned Register
- Oil Spill Contingency Plan and Tiered Response Playbook Drafting
- Peer Review Panel and Preparedness Improvement Priorities

Skills You Will Gain:

- Pollution Source Mapping
- Oil Weathering Prediction
- Response Capability Sizing
- Containment and Recovery Planning
- Dispersant Decision Analysis
- Sensitivity Map Interpretation
- Spill Waste Logistics
- Exercise Evaluation

Why Attend This Course:

- Return with an Oil Spill Contingency Plan and Tiered Response Playbook matched to your own port, terminal or offshore operation
- Test your response decisions under time pressure in a spill simulation before a real release tests them
- Protect the most sensitive coastline first by reading sensitivity maps and trajectory estimates together
- Compare spill preparedness practice with peers from ports, offshore production, shipping and coastal industry

Conclusion:

Effective oil spill response is decided long before oil reaches the water, by plans, equipment and people that have been matched to realistic scenarios and exercised. The course moves from marine pollution sources and the MARPOL scope, through oil behaviour, fate and the tiered framework, to contingency planning and at-sea techniques, then to sensitivity mapping, shoreline clean-up, response waste and incident command. The final day runs a timed simulation and produces an Oil Spill Contingency Plan and Tiered Response Playbook ready for the next drill.