Emergency Response Training for Petrochemical Plants

Service Objectives

What this training builds and delivers for petrochemical facilities in the UAE.

- Develop technical confidence and disciplined coordination from first alarm through stabilisation and recovery.
- Enable rapid hazard size-up: distinguish pool/jet/3D fires, recognise BLEVE/VCE risks, and anticipate secondary containment overflow.
- Apply ICS aligned with plant hierarchies to clarify incident, operations, planning, and logistics roles.
- Select and calculate foam strategies (AFFF/AR-AFFF) for tanks and diked areas; integrate with fixed systems per NFPA guidance.
- Use gas monitoring and dispersion awareness (e.g., H2S, benzene) to execute shelter-in-place versus evacuation; maintain muster and accountability under degraded communications.
- Strengthen decision-making using P&IDs, causes-and-effects, and shutdown matrices; coordinate with Civil Defence and align ERP and pre-incident plans for measurable performance gains.

> Aligned with UAE frameworks (OSHAD, Dubai Civil Defence Fire and Life Safety Code) and international references (ISO 22320, NFPA 11/15/30, API guidance). Built around real petrochemical units, storage profiles, and ERPs.

Who This Service Is For

- Petrochemical plants with crackers/reformers, polymerisation lines, blending, utilities, storage terminals, tank farms, jetties, and interlinked process units.
- HSE Managers, Emergency Response Coordinators, Process Safety Engineers overseeing ERPs and drills.
- Control Room Operators and Shift Supervisors managing alarms, ESDs, communications, and coordination with field teams.
- Plant Operators, Maintenance/Utilities personnel executing initial isolation, firefighting set-up, and gas monitoring.
- Dedicated and auxiliary Fire Teams handling foam operations and hydrant/monitor deployment around tank farms and diked areas.
- Logistics/Terminal staff (truck/rail loading, jetty operations), contractor supervisors, and mutual-aid partners interfacing with site command.

Duration & Process Overview

Delivery formats and typical timelines designed for continuous petrochemical operations.

- Delivery modes: on-site (walkdowns and practicals), hybrid (virtual briefings + targeted on-site drills), or classroom using site-specific materials.
- Typical tracks: 0.5–1 day (Awareness); 2 days (Operators/Technicians); 2–3 days (ICS/Command Team); 3–4 days (Fire Team/Specialists); 1 day (Refresher).
- Scheduled around shifts, PTW windows, and access constraints; staged by unit, terminal area, or function for depth where needed.
- Supports multi-site organisations by harmonising core doctrine while tailoring scenarios and pre-incident plans to each plant.

Methodology

Phased approach reflecting how petrochemical incidents unfold, with rigorous assessment and documentation.

Phase	Objective / What It Covers	Deliverable
Pre-training scoping	Needs analysis; collect ERP, P&IDs, layouts, utility drawings, foam inventory, equipment lists.	Tailored training plan and site-specific scenarios aligned to plant hazards and access routes.
Technical briefings	Concise theory linked to process design; physics/chemistry of fires, explosions, toxic releases; ICS principles.	Focused modules connecting MSDS/process data to tactical choices and command structure.
Tabletop simulations	High-fidelity tabletops using drawings and P&IDs; decision-making from P&IDs, causes-and-effects, shutdown matrices.	Decision logs and role clarity for incident, operations, planning, logistics functions.
Practical skill stations	Hose handling; hydrant/monitor set-up; portable/fixed foam systems; gas detection; SCBA readiness; casualty handling (as permitted).	Observed performance against safe set-up and prioritisation standards.
Functional/full-scale drills	Progressive exercises; integrated scenario covering command, field tactics, accountability, multi-agency coordination.	Exercise outcomes evidencing readiness across control room, field, and fire teams.
Structured debriefs	Debriefs tied to ERP, muster procedures, shift handover; include trigger-based escalation learning (e.g., wind shift, delayed isolation).	Performance observations and improvement actions mapped to PSM barriers.
Assessment & certification	Observed performance, scenario-based decision logs, short written checks; emphasis on life safety, stabilisation, property/environment protection.	Certificate of completion; training records suitable for regulator/auditor review.

Process hazards and scenario recognition

- Connect MSDS, process conditions, and inventories to standoff, escalation controls, and tactics.

ICS and multi-agency coordination

- Translate ICS to plant roles; practise span of control and information flow with Civil Defence interfaces.

Foam, firewater, and tactical firefighting

- Calculate application rates; deploy monitors; coordinate with fixed systems for tanks and diked areas.

Toxic gas, shelter-in-place, and evacuation

- Use gas monitoring and dispersion awareness (H2S, benzene) to choose SIP versus evacuation; align control room and field actions.