Electrical Safety Training for Oil & Gas

Service Objectives

- Translate NFPA 70E, IEC 60364, IEC 60079, and API RP 14F/14FZ/500/505 into site-ready procedures aligned with PTW, SIMOPS, and isolation practices.
- Execute LOTO and positive isolations that protect people, process containment, and SIS integrity during maintenance and concurrent operations.
- Assess arc-flash and shock risk, set approach boundaries, and select arc-rated PPE based on fault current and clearing times from coordination studies.
- Select, inspect, and maintain Ex equipment and cabling to prevent ignition sources in Zone 1/2 hazardous areas per IEC 60079 and API RP 500/505.
- Integrate PTW, gas testing, temporary power controls, and energised work decisions to avoid ignition and sustain production reliability.

> Built for refineries, gas plants, LNG terminals, offshore platforms, and pipelines in the UAE; tailored to your single-line diagrams, switchgear, Ex equipment, and turnaround schedules.

Who This Service Is For

- Maintenance electricians, E&I technicians, electrical supervisors, and operations coordinators authorising isolations.
- PTW officers and instrument engineers working with intrinsically safe loops and classified areas.
- Contractors performing tie-ins during shutdowns and construction teams executing brownfield modifications.
- Facility managers overseeing MCC rooms, substations, UPS/ESD supplies, and emergency switchboards.
- Integrity teams responsible for Ex inspections and crews working near flare headers or hazardous zones (Zone 0/1/2).
- Organisations coordinating OEMs and EPCs across upstream, midstream, and downstream assets, onshore and offshore.

> Aligns with UAE frameworks and expectations: OSHAD, Dubai Municipality technical guidance, UAE Civil Defence, MOHRE, and ADNOC Codes of Practice.

Duration & Process Overview

- Awareness: 1 day for supervisors, PTW officers, HSE. On-site or live-virtual. Focus on boundaries and energised work justifications.
- Practitioner: 2 days for E&I technicians and electrical fitters. On-site/offshore. Emphasises LOTO, isolations, Ex inspection, and temporary power controls.

- Advanced: 3 days for electrical engineers and HV authorised persons. On-site/blended. Covers HV switching, arc-flash label use, and SIS/UPS/ESD coordination.
- Typical class size 8–16; English and Arabic delivery; printed and digital materials aligned to your PTW, isolation forms, and equipment tags.

Methodology

A modular, site-tailored pathway that blends classroom learning, practical demonstrations, and case-based exercises mapped to your documentation and operating constraints.

Phase	Objective	Deliverable / Duration
Needs Analysis & Scoping	Gather drawings, PTW forms, and recent incidents to target real tasks.	Scoping pack; tailored outcomes (pre-course).
Customisation to Site	Map content to your single-line diagrams, labels, SOPs, and tags.	Custom learner materials and checklists.
Classroom Foundation	Build core knowledge on hazards, arc-flash, shock, and NFPA 70E principles.	Foundation module (Day 1).
Practical Demonstrations & Drills	Practice LOTO, zero energy verification, Ex inspection, and safe testing.	Hands-on exercises with LOTO kits, Ex enclosures, tools (Day 1–3).
Case-Based Exercises	Apply decisions to your protection settings, incident learnings, and PTW.	Scenario worksheets; decision records aligned to hierarchy of controls.
SIMOPS & Offshore Integration	Coordinate with hot work, lifting, gas testing, and ESD/F&G dependencies.	SIMOPS-ready procedures and permit steps.
Assessment & Certification	Verify competence through quizzes, scenarios, and practical demonstrations.	NPM Certificate of Completion; assessment records (end of course).
Post-Training Actions	Embed improvements and close gaps identified during exercises and audits.	Action plan and recommended renewal interval.

Hazardous Areas & Ex Equipment Mastery

- Gas groupings, EPLs, temperature classes; inspection to IEC 60079-17; common non-conformities and documentation.

LOTO & Isolation Planning in Process Plants

- Lock hierarchy, interlocks, zero energy verification; protect SIS, UPS, and ESD coverage during maintenance and turnarounds.

Arc-Flash & Shock Protection for HV/LV Systems

- Interpret labels, set approach boundaries, choose arc-rated PPE; safe racking, switching, and instrument use.

PTW, SIMOPS, & Energised Work Decisions

- Energised work permits, task risk assessment, gas monitoring, and cross-permit coordination to audit standards.