Arc Flash Training for Utilities

Service Objectives

> Industry-specific training aligned to UAE utility assets and OSH frameworks, connecting NFPA 70E work practices, IEEE 1584 study outputs, and IEC/EN 61482 arc-rated PPE requirements to real network operations.

- Reduce switching errors, ensure correct PPE selection, and authorise energised work only when justified and controlled.
- Interpret IEEE 1584 incident energy results; translate arc flash labels into safe approach boundaries and PPE levels.
- Apply NFPA 70E task tables to utility activities (e.g., racking 11 kV breakers, RMU operations, relay testing, disconnects).
- Conduct point-of-work risk assessments, confirm normal operating condition, and lead concise job briefings.
- Strengthen administrative controls: energised work permits, LOTO quality, and test-before-touch steps integrated with UAE utility OSH frameworks.
- Address utility scenarios: parallel feeds, CT secondary hazards, stuck breakers, remote racking/switching, and emergency response for arc flash burns.

Who This Service Is For

Designed for UAE utility organisations operating low-, medium-, and high-voltage systems across substations, feeders, RMUs, pad-mount transformers, and control rooms.

- Utility HSE managers, operations supervisors, electrical engineers, field technicians, and distribution operators (11 kV/33 kV).
- Substation technicians racking draw-out breakers, linemen on overhead lines, and engineers supervising protection testing/commissioning.
- Water and wastewater utilities (MCCs, VFDs), district cooling utilities, and facility utility departments within industrial estates.
- HSE officers, permitting authorities, work controllers, planners, and training coordinators interpreting labels, boundaries, permits, and LOTO.
- Contractors performing cable terminations, breaker maintenance, or testing under utility supervision.
- Typical exposure points: metal-clad MV switchgear, GIS/AIS yards, RMUs, capacitor banks, LV switchboards, relay rooms, battery chargers, and UPS systems.

> UAE operating context considered: extreme heat and shifting peak loads, desert dust ingress, and short outage windows requiring clear, common language for safe work.

Duration & Process Overview

- 1-day awareness: shared terminology and immediate expectations for switching, labelling, and PPE.
- 2-day practical (operators/technicians): scenarios for job briefings, energised work justification, and remote vs. local switching.
- 3-day deep-dive (engineers/supervisors): IEEE 1584 study assumptions, incident energy variability, and mitigations (arc-resistant gear, relays, maintenance switches).
- On-site, virtual, or hybrid delivery; scheduled around 12-hour shifts and outage windows; typical cohorts of 8–16; materials in English with bilingual facilitation options.

Methodology

A practical, equipment-centred approach using client studies, single line diagrams, labels, and permits; reinforced by scenario practice, team drills, and formal assessment.

Phase	Objective	Deliverable
1) Training Needs Analysis & Document Review	Collect SLDs, arc flash study extracts, permits, and labels to tailor content.	Site-specific scenarios and exercises mapped to your network.
2) Fundamentals	Arc formation, incident energy, boundaries, and label anatomy.	Baseline competence for applying boundaries at LV/MV assets.
3) Standards & Compliance	Contextualise NFPA 70E, IEEE 1584, IEC/EN 61482 for utility tasks.	Clear mapping from task to boundary and PPE level.
4) Risk Controls & Permits	LOTO, energised work permits, normal operating condition, job briefings.	Completed job briefing and permit practice aligned to your procedures.
5) PPE Selection & Use	ATPV/ELIM, face shields, balaclavas, gloves for MV/LV tasks.	Consistent PPE decisions for switching, MCC troubleshooting, capacitors.
6) Switching & Racking	Safe switching steps, remote racking, stuck breaker contingencies, interlocks.	Assessed switching/racking checklist run-throughs.
7) Testing & Commissioning	Relay testing, CT/PT hazards, live panels, exposure time minimisation.	Task-specific point-of-work risk assessments.
8) Incident Response & Assessment	Burn first aid, scene control, reporting, learning reviews; progressive checks and final practical.	Structured debrief approach; NPM Certificate of Completion with unique ID.

> Delivery can include on-site walkdowns of safe-to-access areas to contextualise hazards, with split sessions to maintain network reliability.