Arc Flash Training for Power Generation

Service Objectives

- Reduce arc flash risk and protect personnel while maintaining generation reliability.
- Translate NFPA 70E, IEEE 1584, IEC 61482, and EN 50110 into practical switching, racking, testing, and maintenance behaviours.
- Align with site electrical safety rules, permit-to-work (PTW), LOTO, isolation, and incident energy labelling programmes.
- Build fluency in boundaries, labels, and PPE selection; execute safe MV/LV switching and generator circuit breaker operations.
- Embed risk assessment into job planning to control backfeed, interlocks, generator run-down times, and configuration dependencies.
- Strengthen compliance evidence for OSHAD SF, Dubai Municipality, and Civil Defence reviews.

> Standards are contextualised to your single-line diagrams, protection philosophy, and safe systems of work, creating a disciplined, auditable approach to energised work decisions.

Who This Service Is For

Designed for power generation and desalination assets across the UAE, including gas turbine, combined-cycle, steam, nuclear, solar PV/CSP, and co-generation facilities.

- Electrical technicians and engineers; O&M supervisors; authorised persons/senior authorised persons; operators performing switching.
- Instrument technicians, HSSE coordinators, and contractors active during shutdowns and outages.
- Planners, permit issuers, and compliance officers verifying documentation, training currency, and handover readiness.
- Facilities with MV/LV switchgear (11 kV/33 kV), GIS/AIS substations, generator circuit breakers, excitation systems, and DC battery/UPS rooms.
- Multi-plant portfolios seeking standardised competence and consistent labelling/PPE policies.

> Expected operational benefits: fewer near-misses during MV switching/racking, faster permit approvals and job starts, improved PPE compliance, and a stronger compliance posture.

Duration & Process Overview

- Course formats: 1-day awareness (operators/permit issuers); 2-day practitioner (switching/racking/testing); 3-day advanced (simulations, permits, supervisory validation).
- Delivery options: on-site classroom with plant walkdowns/demonstrations; hybrid (remote theory + on-site practicals); live-virtual for dispersed teams.

- Cohorts: 8–16 for hands-on modules; awareness sessions scalable to 25–30 with Q&A and case studies; staggered scheduling to maintain staffing.
- Learning materials: pre-reads, workbooks, post-course reinforcement to support toolbox talks and onboarding.

Methodology

A structured, standards-aligned approach tailored to your plant documentation and real operating tasks.

Phase	Objective	Duration / Deliverable
Pre-training scoping	Assess needs with HSE/O&M; review PTW/LOTO, procedures, single-lines, and arc flash labels.	Scoping session + document review pack
Standards alignment	Map NFPA 70E, IEEE 1584, IEC 61482, EN 50110 to site rules, boundaries, PPE, and labelling.	Customised content using site documentation
Modular curriculum	Progress from awareness to task proficiency for switching, racking, testing, and job planning.	1–3 days depending on cohort level
Practical simulations	Recreate switching orders, energised work permits, and plant scenarios (e.g., GIS, GCB, DC rooms).	Scenario run-throughs, de-energised rigs/walkdowns
Assessment & certification	Written exam plus practical evaluations (briefings, racking, PPE inspection, instrument use).	Results + NPM certificate of completion
Post-course reinforcement	Provide feedback, refresher intervals, and improvement suggestions for procedures/training.	Individual feedback + recommendations (2–3 year refresh)

Key Modules (examples)

- Electrical Hazard Fundamentals: shock vs arc flash, NFPA 70E boundaries, incident energy (3h).
- Labels, Studies, and PPE: IEEE 1584 labels, PPE categories, IEC 61482 selection/inspection (3h).
- Safe Switching & Racking: job safety plans, sequencing, proving dead, interlocks (4h).
- Substations & Generators: GIS/AIS specifics, GCBs, transformer bays, backfeed risks (3h).
- DC Systems & Testing: battery/UPS hazards, relay testing, CAT-rated instruments (2h).
- Emergency Response: burns, first aid, rescue planning, incident reporting (1.5h).

> Supervisors are equipped to validate job safety plans, assess competence, and intervene when controls or PPE are insufficient, improving consistency across multi-unit stations.