SIL Training Abu Dhabi

Service Objectives

A practical, Abu Dhabi-calibrated programme that builds functional safety competence for Safety Instrumented Systems (SIS) across the full lifecycle.

- Apply IEC 61508/61511 confidently from concept to decommissioning.
- Translate HAZOP/LOPA outcomes into defensible SIL targets and SIF allocation for Abu Dhabi facilities.
- Determine architectural constraints, select devices, and validate SIF performance using PFDavg and related metrics.
- Develop proof test strategies and intervals that reduce nuisance trips in local operating contexts.
- Maintain lifecycle documentation aligned with IEC 61511, ADNOC expectations, and typical Abu Dhabi customer requirements.

> Abu Dhabi focus: content, case studies, and exercises reflect ADNOC operations, OSHAD expectations, and Abu Dhabi Civil Defence interfaces (including NFPA 72 alignment for fire and gas).

Who This Service Is For

- Asset owners, EPCs, and system integrators operating in Abu Dhabi (upstream, downstream, utilities, and critical infrastructure).
- Operations and maintenance leaders responsible for SIF availability and proof testing across Abu Dhabi assets.
- Process safety engineers and HSE managers leading HAZOP/LOPA under OSHAD and defending SIL targets.
- Control and instrumentation engineers configuring logic solvers, field devices, and communications for SIS in refineries, gas plants, and utilities.
- Project teams who must align designs and documentation to IEC 61511 and Abu Dhabi client specifications, and interface with Abu Dhabi Civil Defence.

Duration & Process Overview

- Core tracks: Foundation (1 day), Practitioner (2 days), Advanced/Workshop (3 days).
- Refreshers: 0.5–1 day; delivered virtually or on-site.
- Executive briefing: 2–3 hours; on-site for leadership.
- Engagement flow: pre-training scoping and contextualisation; delivery on-site/hybrid/virtual; applied workshops and final assessment.

Recommended cohort size for in-house sessions: 8–16 delegates. All configurations include pre-training scoping so examples reflect real plant modes, shutdown keys, and maintenance intervals.

Methodology

Structured for Abu Dhabi's industrial realities, combining lectures, worked examples, and scenario-based workshops across the SIS lifecycle.

Phase	Objective	Deliverable
Scoping & Contextualisation	Align content to Abu Dhabi assets, site modes, and regulatory expectations.	Context brief and tailored scenarios reflecting your documentation.
Functional Safety Foundations	Establish risk concepts, protection layers, and IEC 61508/61511 principles.	Worked examples linking tolerable risk to IPLs and SIS.
Hazard Identification & LOPA	Translate HAZOP deviations to initiating events, IPL credits, and SIL targets.	Documented SIL target derivation for sample scenarios.
SIF Specification & Architecture	Define HFT, SFF, voting, and device selection considerations.	Draft SIF specifications aligned to IEC 61511.
Reliability Calculations	Explain failure rates, PFDavg, proof test coverage, and common cause factors.	Example PFDavg reasoning and calculation walkthroughs.
Application Program Design	Cover logic solver programming, diagnostics, bypass strategies, and cybersecurity interfaces.	Sample logic considerations and bypass management guidance.
Verification & Validation	Plan FAT/SAT, conduct SIF validation, and document to ADNOC/contractor expectations.	Test plans, validation records, and example reporting formats.
Operations & Maintenance	Manage proof testing, overrides, impairment tracking, and Management of Change.	Proof test strategies and interval rationale for Abu Dhabi contexts.
Lifecycle Documentation	Maintain SRS, cause-and-effect, proof test procedures, and performance monitoring.	Traceable document set aligned with IEC 61511 and client needs.
Common Pitfalls & Lessons	Highlight systematic failure drivers and over-crediting of IPLs with local lessons.	Abu Dhabi-relevant pitfalls checklist and mitigations.
Capstone Exercise & Assessment	End-to-end SIF case from LOPA to proof testing; knowledge checks and final assessment.	Scenario outputs and assessment results; NPM Certificate of Completion (on successful completion).