HAZOP Training for Petrochemical Plants

Service Objectives

- Build confident HAZOP team members and leaders for petrochemical units and shared facilities.
- Align to IEC 61882; integrate IEC 61511/ISA, API 520/521/2000, and UAE Civil Defence requirements.
- Practise scoping nodes; effective use of PFDs/P&IDs, cause-and-effect matrices, and safeguarding/IPL management.
- Write precise, verifiable recommendations aligned to MOC, CMMS, and site procedures.
- Interface HAZOP with LOPA, alarm rationalisation, and proof-test/maintenance strategies for instrumented functions.
- Apply the method to petrochemical deviations (feed swings, fouling, catalyst deactivation, utility loss, nitrogen purge failure, tank overfill).

> Designed to produce HAZOPs that withstand regulator, insurer, and corporate technical assurance scrutiny while improving operability and compliance.

Who This Service Is For

- Integrated petrochemical sites: crackers, reformers, aromatics complexes, polymerisation units, storage farms, and utilities/OSBL.
- Roles: process engineers; operations/production supervisors; console/DCS/PLC operators; maintenance and reliability; I&C; projects/MOC coordinators; HSE/process safety specialists.
- Teams needing to structure guideword-based deviations and interrogate design intent versus actual operation.
- Facilities with high-throughput, exothermic reactions, extensive interconnections, and inventory-dense storage.
- Brownfield debottlenecking, turnaround tie-ins, and MOC involving control strategies, SIL-rated functions, or relief headers.
- UAE operating and regulatory context to enable effective workshops and practical, prioritised action plans.

Duration & Process Overview

- 2-day core programme with optional 1-day advanced workshop for facilitators and scribe skill-building.
- Modular delivery across shifts; hybrid formats combining on-site simulation with remote pre-work and post-course coaching.
- Delivered in English or bilingual; scheduled around turnaround windows, permit-to-work limits, and DCS console staffing.

- Typical class size 10–14; optional mock workshop on a live unit; layered assessments; NPM certificate of completion.

Methodology

Phase	Objective	Deliverable
Method & Team Roles	Apply IEC 61882; clarify chair/scribe discipline in high-throughput units.	Workshop plan, node selection, role matrix.
Reading the Plant	Navigate PFDs/P&IDs, control narratives, cause-and-effect, safeguarding memos; set boundaries.	Node maps and deviation lists.
Safeguards & IPLs	Credit interlocks and SIS per IEC 61511; relief per API 520/521; identify LOPA and alarm rationalisation needs.	Safeguard/IPL register and LOPA triggers.
Storage & Transfer	Address API 2000 venting, tank overfill, jetty operations, truck loading; align with ESD and emergency response.	Storage/transfer HAZOP actions and ESD interfaces.
Polymerisation Hazards	Probe runaway, fouling, inerting, inhibitor dosing, and quench reliability.	Cause–consequence worksheets with precise recommendations.

Method & Team Roles

- Workshop planning, node selection, role clarity, guideword use.

Reading the Plant

- Document navigation, boundary setting, deviation mapping.

Safeguards & IPLs

- Safeguard crediting, alarm rationalisation, LOPA entry points.

Storage & Transfer

- Scenario framing, emergency response alignment, ESD tie-ins.

Polymerisation Hazards

- Cause–consequence reasoning and recommendation precision.