Root Cause Analysis Training for Manufacturing

Service Objectives

Practical, factory-ready RCA capability tailored to UAE manufacturing operations.

- Move teams from firefighting to first-time-right elimination of repeat issues.
- Define problems precisely, scope investigations, and identify what changed using facts (historians, HMI/PLC logs, SPC, maintenance, LOTO).
- Apply the right tools for the case (5-Why, Ishikawa, Causal Factor Charting/Timeline, Fault Tree, Barrier Analysis/BowTie).
- Address factory-specific human and organisational factors (shift handovers, production pressure, backlog, spares, calibration, training gaps).
- Translate findings into layered engineering/procedural/training controls with control-of-change and sustained monitoring.
- Demonstrate traceable cause logic and verified action effectiveness to management, customers, and regulators.

> Designed for UAE manufacturing realities: shift patterns, turnaround windows, bilingual delivery, and audit expectations (ISO 9001, ISO 45001, IATF 16949, UAE Fire and Life Safety Code).

Who This Service Is For

- Discrete, batch, and continuous manufacturing (food & beverage, packaging/converting, automotive components, building materials, metals, FMCG, pharma secondary packing).
- Roles: HSE managers, production/process/reliability engineers, maintenance supervisors, quality leaders (QA/QC), CI practitioners, shift supervisors.
- Group-level excellence teams standardising problem-solving across multiple UAE sites; factory leaders preparing for audits (ISO 9001, IATF 16949, ISO 45001).
- Typical issues: conveyor jams, interlock defeats, batch deviations, solvent flash fires, combustible dust risks, compressed air failures, utility trips, repeat minor injuries, supplier nonconformities.
- Teams needing a common language, credible evidence collection under time pressure, and robust cause logic before shipments are at risk.

Duration & Process Overview

Modular pathways configured around shifts, turnarounds, and campaigns; Arabic/English delivery available.

- Foundation (RCA Essentials): 1 day (8 hours) or 2 half-shifts; ideal for supervisors and technicians; 12–18 delegates.
- Practitioner (Lead Investigator): 2–3 days with factory-specific scenarios; for HSE/QA/QC/Maintenance/CI engineers; 10–14 delegates.

- Facilitator Clinic: 1 day focused on session design, stakeholder management, and challenging weak logic; 8–12 delegates.
- Delivery: on-site, virtual, or hybrid; pre-work gathers real cases and aligns terminology and data privacy boundaries.

Methodology

Case-led, hands-on training using your records and shop-floor realities to ensure immediate transfer to production.

Phases at a glance

- Pre-work and case selection
- Case-led immersion
- Problem scoping and containment
- Evidence collection
- Timeline and causal factor charting
- Cause analysis tools application
- Barrier analysis and BowTie (for safety events)
- Action planning and effectiveness verification
- Assessment and certification
- Digital RCA tools and templates (where appropriate)

Phase	Objective	Deliverable
Pre-work & Needs Analysis	Select site-specific cases; align terminology; agree data privacy.	Tailored scenarios and pre-reading pack.
Case-led Immersion	Make tools relatable to your lines, utilities, and hazards.	Contextual case studies mapped to your operations.
Problem Scoping & Containment	Define operational problem statements; identify change points; stabilise quickly.	Scoped problem statement and initial containment actions.
Evidence Collection	Capture credible data from photos, batch/lot records, SPC, HMI/PLC logs, historians, interviews.	Structured evidence log and media set.
Timeline & Causal Factor Charting	Reconstruct events across shifts, handovers, and utility trips.	Event map and causal factor chart.
Cause Analysis Tools	Apply 5-Why, Ishikawa, Pareto, and Fault Tree to validate cause chains.	Evidence-backed root and contributing causes.
Barrier Analysis & BowTie (Safety)	Assess safeguards for tasks like LOTO, guarding, hot work, confined space, combustible dust.	Barrier map and strengthening options.
Action Planning & Effectiveness Verification	Develop SMART actions (engineering, procedural, training, controls) and verification plans tied to production KPIs.	RCA action plan with effectiveness checks (OEE, FPY, MTBF/MTTR, defect ppm, TRIR).
Assessment & Certification	Perform exercises and a capstone using real or anonymised cases.	NPM Certificate of Completion (pathway and hours).
Digital Tools & Templates	Demonstrate digital RCA tools and templates to embed sustainability across shifts and sites.	Ready-to-use worksheets and trackers aligned to your workflows.