Root Cause Analysis Training for Utilities

Service Objectives

- Equip utility teams to identify, validate, and eliminate true root causes under real operating constraints.
- Plan and execute investigations that preserve perishable evidence (DCS/SCADA, protection relays, alarms, samples).
- Build defensible timelines across shifts, contractors, and OEMs for rapid, reliable conclusions.
- Apply 5 Whys, Ishikawa, barrier analysis, change analysis, and basic fault/event tree techniques correctly.
- Differentiate technical failure modes from human and organisational contributors (e.g., LOTO, switching, alarm rationalisation, supervision).
- Translate findings into SMART, risk-ranked actions aligned with outage plans and compliance, with clear verification criteria.

> Built for power generation, desalination, wastewater treatment, transmission and distribution, and district cooling operations in the UAE, with outputs that integrate into incident management and asset reliability programmes.

Who This Service Is For

- EHS managers, plant managers, shift supervisors, reliability and asset integrity leaders.
- Electrical and mechanical maintenance supervisors, control room operators, process engineers.
- Permit-to-work coordinators and teams engaged in switching, outages, and turnarounds.
- Utility portfolios: CCGT/open-cycle plants, desalination (MSF/RO), wastewater treatment (including digesters), 11/33/132/400 kV substations, and district cooling.
- Contexts including arc-flash near misses, transformer faults, turbine trips, pump/seal failures, water hammer, membrane breaches, dosing anomalies, SCADA/OT errors, and contractor-related incidents.

Duration & Process Overview

- Typical delivery: 2-day practitioner workshop for investigation leads; optional 1-day awareness for supervisors and PTW roles.
- Hybrid option: virtual pre-work for theory and evidence familiarisation; on-site workshops for simulated walkdowns, switching reviews, and interviews.
- Scheduling aligned to 12-hour shifts and outage windows; sessions run 0900–1700 or in split blocks; bilingual delivery (English/Arabic) available.
- Pre-reading tailored to asset base (e.g., HV protection, RO overviews); cross-functional cohorts mirror real investigation interfaces.

Methodology

Modular, practice-led training using utilities-specific case packs and evidence (SOE/alarm logs, switching records, lab results, OEM histories, photos, P&IDs), culminating in a capstone aligned to your operations.

Phase	Objective	Deliverable
RCA Fundamentals	Establish triggers, evidence hierarchy, and bias control for reliable investigations.	Quiz and evidence classification exercise.
Evidence Capture & Timelines	Collect and validate time-sensitive data; build cross-shift timelines.	Peer-reviewed event timeline.
Technical Analysis Methods	Apply 5 Whys, Ishikawa, barrier and change analysis, and basic fault/event trees.	Facilitated team analysis outputs.
Human & Organisational Factors	Assess procedures, supervision, alarm rationalisation, and LOTO/switching controls.	Root cause justification write-up.
Actions, Verification & Reporting	Design SMART actions, align to outage plans, and define verification and governance.	Standardised RCA report and action plan.
Capstone Investigation	Execute a scenario mirroring your operations to demonstrate end-to-end competence.	Final presentation and defence to peers and facilitator.