Workplace Risk Assessment for Utilities

Service Objectives

- Identify foreseeable hazards in routine and non-routine tasks across generation, electrical, water, wastewater, and district cooling assets.
- Quantify risk using your corporate or authority-aligned matrix and define practicable controls that fit site constraints.
- Align processes and outputs with ISO 45001 and integrate with your HSE management system.
- Validate life-saving rules and permits (LOTO, confined space, hot work) and verify contractor safety at high-risk interfaces.
- Review emergency preparedness for electrical incidents, chemical spills, and process upsets.
- Harmonise risk language and critical control standards across sites with full traceability to action closure.

> Outcomes highlighted in the engagement: fewer incidents and near-misses; improved reliability and uptime; demonstrable compliance with traceable actions; harmonised standards across portfolios; targeted training and competency focus based on observed gaps.

Who This Service Is For

- UAE utilities operating power generation (OCGT/CCGT, solar PV with battery storage), substations, desalination/RO plants, district cooling plants and ETS networks, central boiler/steam plants, pumping stations, and wastewater treatment works.
- Stakeholders: HSE managers (OSH compliance and safe systems of work); plant managers and O&M supervisors (uptime, maintenance, contractor interfaces); asset integrity and electrical safety engineers (arc-flash, switching, isolation); compliance officers (audit readiness).
- Operational contexts: multi-emirate footprints, industrial zones with controlled access, shift-based work, tight outage windows.
- Real exposures addressed: energised work and arc-flash, LOTO discipline, confined spaces (tanks and culverts), chemical dosing and storage (chlorine, acids, polymers), legionella in cooling systems.
- Environmental/operational factors: heat stress in summer, traffic and lifting in yards, proximity risks at substations.
- Tailored to 24/7 operations, contractor-heavy maintenance, and coordination with dispatch and control centres.

Duration & Process Overview

- Single plant (e.g., district cooling or mid-size RO): 2–4 on-site days across at least two shifts; 1–2 weeks for analysis and reporting.
- Large/multi-unit power or combined water & power plants: 5–10 on-site days covering generation islands, balance-of-plant, workshops, and switchyards; aligned with outages and maintenance windows.

- Distributed networks (substations, pumping stations, ETS): phased programme with remote pre-reviews and clustered visits to minimise travel and access coordination.
- Hybrid delivery: remote kickoff and document review; on-site walkdowns and workshops; remote validation meetings for findings sign-off and an executive debrief with a practical action plan.
- UAE considerations: Ramadan schedules, midday heat breaks, and high-security permit/access restrictions integrated into planning.

Methodology

NPM combines document review, stakeholder engagement, task-level studies, and field verification to deliver a defensible, action-ready risk register.

Pre-engagement Scoping

- Confirm system boundaries, align risk matrix and permits, define logistics and documentation set.

Desktop Review

- Targeted review of procedures, permits, drawings (SLDs, P&IDs), OEM manuals, incidents/near-misses, competency and maintenance records.

Fieldwork Walkdowns

- Multi-shift observations and verifications: isolation points, arc-flash labelling, interlocks, rescue gear, eyewash/showers, spill control, egress.

TRA/JSA Workshops and Critical Scenario Studies

- Facilitated task risk assessments; apply bow-tie/LOPA thinking to scenarios such as inadvertent energisation, chemical exposure, engulfment in wet wells.

Analysis & Gap Assessment

- Evaluate risks, validate critical controls, and assess gaps against standards/codes and authority expectations.

Reporting & Action Planning

- Produce risk register, prioritised action plan, executive summary, and an implementation roadmap ready for your HSE system.

Validation & Handover

- Review meetings and optional rechecks; actions exported in structured formats; mapping to management system elements; client implements, NPM can verify on request.

Phase	Objective	Deliverable
Pre-engagement Scoping	Set boundaries, align risk criteria, plan logistics and access.	Scope note, site list, risk matrix confirmation, document request.
Desktop Review	Focus fieldwork using existing procedures, drawings, and learnings.	Targeted review log and initial focus areas.
Fieldwork Walkdowns	Verify safeguards and observe real work across shifts and areas.	Observation notes, photo/evidence (as permitted), verification checklist.

TRA/JSA Workshops	Capture task hazards and practicable controls with crews.	TRA/JSA outputs and critical scenario bow-ties where applicable.
Analysis & Gap Assessment	Rate risks, validate critical controls, and assess gaps to standards.	Risk evaluation summary and gap analysis notes.
Reporting & Action Planning	Consolidate findings into a ranked, traceable action plan.	Executive summary, narrative report, risk register, actions register.
Validation & Handover	Confirm practicality and ownership; prepare audit-ready evidence.	Validation meetings, optional rechecks, CSV/Excel/API-ready exports mapped to your HSE system.