TASK RISK ASSESSMENT WORKSHEET

CONTRACT NO	REF	DATE	REV
190707	RA-2026-w490mB2y	05.09.2026	A

PROJECT 132 kv cable works

CLIENT	CONSULTANT	MAIN CONTRACTOR	SUBCONTRACTOR
Taqa	Green	El Sewdy	Heliopolis

ACTIVITY Cable Pulling

ASSESSORS	— PROJECT MANAGER *signature*	— HSE ENGINEER *signature*	— PROJECT MANAGER *signature*	— CIVIL ENGINEER *signature*	— HSE ENGINEER *signature*

SN	Activity	Hazard / Aspect	Consequence	Groups Exposed	Existing Controls	Initial Risk P × S = R	Additional Controls	Residual Risk P × S = R
1	**Delivery, offloading, and site handling of heavy cable drums using mobile crane or HIAB**	1. Failure of lifting accessories (slings, shackles, spreader beam) 2. Overturning of lifting equipment due to soft/uneven ground 3. Uncontrolled rolling or shifting of heavy cable drums 4. Personnel struck by suspended or swinging load 5. Proximity to overhead power lines or underground utilities during outrigger setup	Catastrophic crushing injuries, fatalities, structural damage, equipment rollover, and severe downtime.	Riggers, crane operators, banksmen, logistics personnel, and adjacent ground workers.	1. Obtain and verify valid third-party inspection certificates (EIAC/DAC approved) for crane, lifting tackle, and operators. 2. Develop and brief an approved Lift Plan under the supervision of an Appointed Lifting Supervisor. 3. Conduct ground bearing capacity assessment; deploy outrigger steel/hardwood spreader pads. 4. Secure drum chocks/wedges immediately prior to and post offloading. 5. Establish a 360-degree barricaded exclusion zone with physical barriers and warning signage. 6. Comply with OSHAD CoP 34.0 and CoP 36.0 requirements.	**P 2 × S 3** **6**	1. Utilize non-conductive taglines to guide the drum without manual hand contact. 2. Station a dedicated, competency-certified Banksman with high-visibility vest and whistle. 3. Verify clear approach path free from overhead power cables (minimum 6m clearance).	**P 3 × S 3** **9**
2	**Erection of cable drum jacks and mechanical mounting of cable drum spindle**	1. Hydraulic/screw jack failure or collapse under heavy dynamic load 2. Finger trapping and pinch points during spindle insertion and drum alignment 3. Uneven jacking causing the drum to slide off the axle 4. Musculoskeletal injury from manual lifting of heavy steel spindles 5. Unstable base plate placement on uneven or uncompacted sub-base	Limb fractures, severe pinch injuries, finger amputation, spinal damage, and impact contusions.	Electrical technicians, mechanical fitters, riggers, and general helpers.	1. Inspect jacks and spindles prior to use; verify Safe Working Load (SWL) exceeds combined drum weight by minimum 20% safety factor. 2. Ensure ground under drum jacks is level, compacted, and reinforced with certified timber sole boards. 3. Jack up both sides simultaneously and evenly using synchronized screw/hydraulic jacks. 4. Install locking collars/split pins on both ends of the spindle to prevent lateral travel. 5. Mandate cut-resistant heavy-duty impact gloves (EN 388 Level 4/5).	**P 4 × S 4** **16**	1. Assign minimum four-person team for heavy spindle positioning or utilize mechanical lifter. 2. Supervisor must inspect and sign off drum stability on jacks prior to starting uncoiling. 3. Position anti-rotational mechanical brakes on the drum rim to prevent free-wheeling.	**P 2 × S 2** **4**
3	**Cable containment route inspection, duct rodding, clearing, and mandrelling**	1. Contact with hazardous gases/stagnant water inside trenches/ducts 2. Snap-back or whipping of flexible fiberglass/spring-steel duct rods 3. Compressed air line rupture during pneumatic duct cleaning/sponge blowing 4. Eye injuries from flying debris, silt, or compressed slugs 5. Hand pinch injuries inside draw boxes and conduit mouths	Eye penetration, blunt force facial trauma, soft tissue lacerations, and toxic gas exposure.	Cable pullers, telecom/electrical technicians, and duct work operatives.	1. Wear sealed safety goggles (EN 166) and full-face shield during pneumatic duct rodding/cleaning. 2. Inspect rodding equipment, couplings, and guides for stress cracks before inserting into ducts. 3. Secure catch boxes/slug catchers at duct discharge ends to contain propelled debris. 4. Use whip-checks on all compressed air hose couplings and test safety relief valves. 5. Calibrate duct testing pneumatic pressure; never exceed pipe manufacturer rated burst pressure.	**P 4 × S 3** **12**	1. Establish two-way radio communication between duct insertion point and receiving pit. 2. Position safety stand-off barriers around the exit duct opening to prevent unauthorized entry during rodding.	**P 2 × S 2** **4**

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4	**Setup, anchoring, and operation of motorized cable pulling winch**	1. Winch anchor point pull-out or mechanical failure under peak pulling tension 2. Wire rope / Dyneema rope breakage causing severe energy snap-back 3. Entanglement of loose clothing or limbs in rotating winch capstan/drum 4. Hydraulic hose rupture under high operating pressure 5. Lack of dynamometer monitoring leading to over-tensioning of cable	Traumatic amputations, fatal snap-back strikes, severe crush injuries, and high-pressure fluid injection.	Winch operators, electrical supervisors, and personnel along the line of tension.	1. Structural calculation and sign-off required for winch deadman anchors or concrete eye bolts. 2. Install electronic dynamometer with auto-shutoff when maximum safe pulling tension is reached. 3. Place bullet-resistant shatterproof polycarbonate guards between capstan and operator. 4. Maintain strict 'snap-back line of fire' exclusion zones using rigid red chain barriers. 5. Inspect wire ropes/pulling synthetic ropes daily for bird-caging, broken strands, or fraying. 6. Comply with OSHAD CoP 36.0 (Plant and Equipment Safety).	P 4 × S 5 20	1. Equip winch with emergency stop (E-Stop) reachable directly by the operator and via remote pendant. 2. Winch operators must wear tight-fitting coveralls with no loose sleeves, jewelry, or drawstrings. 3. Use anti-whip safety socks on all pulling rope termination eyes.	P 1 × S 3 3
5	**Underground manhole / joint pit entry for cable pulling (Confined Space Entry)**	1. Atmospheric hazards (H2S, CO, methane, oxygen deficiency (<19.5%) or enrichment (>23.5%)) 2. Inundation by ground water, sewage, or localized trench wall collapse 3. Presence of venomous fauna (scorpions, snakes, spiders) 4. Heat stress, heat stroke, and dehydration inside deep concrete chambers 5. Falls from height when descending manhole access ladders	Asphyxiation, loss of consciousness, drowning, heat stroke fatality, and permanent disability.	Authorized entrants, standby watchmen (hole watch), and rescue team members.	1. Issue Confined Space Entry Permit (PTW) per OSHAD CoP 27.0 with continuous 4-gas atmospheric monitoring. 2. Continuous forced mechanical ventilation via intrinsically safe blowers directed to the bottom of the pit. 3. Erect tripod and self-retracting lifeline (SRL) with rescue retrieval winch at access manhole. 4. Entrants must wear full-body harness attached to retrieval system prior to descending. 5. Station dedicated, trained Standby Person (Hole Watch) at the manhole surface at all times.	P 4 × S 5 20	1. Conduct pre-entry environmental check for dangerous fauna; clear chamber using long-handled flashlights. 2. Implement UAE heat stress management protocol (TWL monitoring, shaded rest shelters, mandatory hydration breaks).	P 1 × S 3 3
6	**Application of cable pulling lubricant (biodegradable/chemical based)**	1. Slips, trips, and falls due to wet, low-friction lubricant spillage on floors/staging 2. Skin dermatitis or ocular chemical irritation from direct chemical contact 3. Runoff into adjacent stormwater drainage or environmental contamination 4. Pressurized lube-pump hose failure	Slip/trip fall fractures, eye chemical burns, contact dermatitis, and environmental remediation fines.	Cable pulling helpers, chemical application crew, and general walking traffic.	1. Review and communicate chemical Safety Data Sheet (SDS) to operatives prior to task initiation. 2. Provide personal protective equipment: chemical splash goggles, nitrile heavy-duty gloves, and slip-resistant boots. 3. Install drip trays, absorbent pads, and containment curbs around cable entry funnel and lubricant pump. 4. Clean up spills immediately using dedicated spill kits with non-hazardous absorbent granules. 5. Keep eyewash station within 10 meters / 10 seconds of application zone.	P 3 × S 2 6	1. Use automatic lube-injection nozzles attached to duct collars to eliminate open manual pouring. 2. Mark slip hazard zone with prominent bilingual (English/Arabic) hazard warning signs.	P 1 × S 1 1

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ACTIVITY **Cable Pulling**

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7	**Cable pulling along high-level elevated containment (cable tray/ladder) using MEWPs and mobile towers**	1. Falls from height during cable laying onto overhead trays 2. Over-reaching leading to scaffold or Mobile Elevated Work Platform (MEWP) tip-over 3. Falling objects (cables, cable rollers, tools) striking personnel below 4. Entrapment/crushing of MEWP operator against overhead concrete beams or structural steel 5. Manual handling strain pulling heavy cables overhead while working from baskets	Fatalities from height falls, serious traumatic brain injuries, crush asphyxiation, and shoulder dislocations.	Overhead electrical technicians, MEWP operators, ground assistants, and personnel beneath work zone.	1. Work at height PTW issued in compliance with OSHAD CoP 11.0. 2. 100% tie-off mandatory: full body harness connected via short restraint lanyard to certified MEWP anchor points. 3. Third-party IPAF certified operators for MEWPs; daily pre-use checklists strictly enforced. 4. Complete exclusion zone beneath overhead tray route demarcated with solid barriers and 'Danger - Overhead Work' signs. 5. Install overhead cable rollers fixed to tray members with approved secondary safety chains.	**P 4 × S 5** **20**	1. Equip all MEWPs with secondary guarding (anti-entrapment overhead bar system). 2. Mandate tool lanyards on all hand tools and use canvas tool buckets for small components. 3. Use lightweight pulling winches for overhead runs to prevent manual overhead muscle strain.	**P 1 × S 3** **3**
8	**Routing and pulling cables into operational switchrooms or live substations**	1. Accidental contact with exposed energized busbars, switchgear, or live terminals 2. Induced electrical voltage in long metallic cables running parallel to live circuits 3. Arc flash and blast initiation due to conductive pulling ropes or steel cable tails 4. Tripping live protection relays causing catastrophic plant blackout or equipment damage 5. Restricted egress corridors blocked by loose cable coils during emergency	Fatal electric shock, severe third-degree arc flash burns, emergency shutdown, and blast wave trauma.	High voltage/low voltage electricians, substation commissioning engineers, and pulling crew.	1. Work governed under energized substation Permit to Work (PTW) with Sanction to Test/Route. 2. Install certified insulating flash barriers, rubber blanketing, and temporary acrylic partitioning around live cubicles. 3. Strictly prohibit metallic pulling tapes, steel ropes, or conductive draw wires; use Kevlar/Dyneema lines only. 4. Ground/earth the cable conductor ends and metallic armor/sheath at both ends during pulling to dissipate induced charge. 5. Personnel must wear NFPA 70E Arc Flash PPE (minimum Cat 2 or Cat 4 based on substation arc assessment).	**P 4 × S 5** **20**	1. Assign an Authorized Electrical Person (AEP) to provide full-time safety watch inside the switchroom. 2. Keep designated primary and secondary escape routes unobstructed by uncoiled cable length at all times. 3. Ensure battery-operated emergency lighting is operational in the switchroom prior to work.	**P 1 × S 3** **3**

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LIKELIHOOD / FREQUENCY

Descriptor	Likely Frequency	Probability
Frequent	Occurs frequently	5
Often	Occurs several times per year	4
Likely	Has occurred more than once	3
Possible	Has occurred	2
Rare	Never occurred	1

RISK MATRIX — PROBABILITY × CONSEQUENCE

Probability	Consequence				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Rare (1)	1	2	3	4	5
Possible (2)	2	4	6	8	10
Likely (3)	3	6	9	12	15
Often (4)	4	8	12	16	20
Frequent / Almost Certain (5)	5	10	15	20	25

15 - 25	Extreme Risk	Activity or industry should not proceed in current form.
8 - 12	High Risk	Activity or industry should be modified to include remedial planning and action and be subject to detailed EHS assessment.
4 - 6	Moderate Risk	Activity or industry can operate subject to management and/or modification.
1 - 3	Low Risk	No action required, unless escalation of risk is possible.