

Risk Assessment Report

Title		Document Number	TTK-CET-EHS-HIRA-25
Department	NA	Site Name	Central Team
Risk Assessment Type	Hazard Identification & Risk Assessment - Electrical Work	Status	Submitted
Next Revision Date	NA	Revision Number	NA
Created By	Rajkumar Pativada	Created On	12-Feb-2026 01:38:00 PM
Modified On	12-Feb-2026 01:38:00 PM		

Sections**Activity: 14 act (Type:)****Sub-Activity: 123 (Type:)**
Section: Hazard - Snake / insect bite
Section:

Risk: Poisoning, fatality	: NA	Risk Level: NA
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Section: Control Measures

E - Elimination: Clear all bushes, tall grass, and shrubs before allowing the survey team entry. Use brush cutters/grass cutting machines instead of bare manual clearing. (If Possible)	SB – Substitution: Apply snake repellent chemicals around working zones, such as: Naphthalene balls (crushed and sprinkled along boundaries of work path). & Phenyl solution or bleaching powder mixed with water sprayed on grass areas. Commercial snake repellent granules (where available in the Indian market, e.g., sulfur-based). For insects, use mosquito repellents like Odoros cream for workers. Use insecticidal spray (e.g., pyrethrin-based spray or HIT-type spray) in bushes before the survey begins.	EC – Engineering Controls: Provide cleared walk paths (minimum 1 m wide) for surveyors to walk safely. Provide snake snake-catching stick and a snake bag with trained personnel (security or safety team). Install solar-powered anti-snake vibration devices in high-risk zones (where survey work will continue for weeks). Provide torches/headlamps for early morning or evening survey work to detect snakes on the ground	AD – Administrative Controls: Conduct snake awareness toolbox talk: teach workers how to identify common snakes (cobra, viper, krait, rat snake) and how to react (don't panic, don't run, stay still). Train supervisors and safety personnel on first aid for snake bite (immobilization, no cutting/sucking, keep patient calm). Keep the emergency contact information of the nearby hospital. Ensure at least one vehicle is always on standby for snakebite emergency transport. Display "Snake-prone area" signboards at entry points of bushy areas.
PPE – Personal Protective Equipment: Gumboots (knee-length) for all survey/land clearance workers. Thick canvas/cotton trousers (not shorts) to reduce direct bite contact. Gloves (rubber/canvas) for those clearing bushes. Headlamps/torches if working in early morning/low light. Mosquito repellent cream (odomos) for insect bite prevention			

Section:

Risk level : NA	Residual RR: NA
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Section: Hazard - Sharp thorny vegetation
Section:

Risk: Cuts, puncture wounds	Risk level : NA	RR: NA
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Section: Control Measures

E – Elimination: Clear thorn bushes before survey/marketing activity using mechanical brush cutters (available with local hardware suppliers if possible). Remove shrubs (like babul, lantana, cactus) from the root level to avoid regrowth. Don't allow workers to enter until the area is cleared.	SB – Substitution: Replace wooden pegs/poles with PVC/plastic poles (lighter, safer to handle). Use spray paint or lime powder for boundary marking instead of pegging in thorny areas. Use fiberglass survey staffs instead of heavy wooden/metal ones.	EC – Engineering Controls: Provide long-handled cutters/sickles so workers don't reach directly into bushes. Collect thorny waste in gunny bags/bins for safe disposal (don't leave lying around). Arrange for municipal/vendor disposal of thorn waste (GHMC-approved). Baricade the areas not yet cleared to prevent accidental entry.	AD – Administrative Controls: Toolbox talk before bush clearing: demonstrate correct cutting & safe handling. Instruct workers to never pull thorny bushes by hand, always use tools. Assign minimum 2 workers per team to support each other and respond to injury. Keep first aid box stocked with antiseptic solution (Savlon/Dettol), bandages, tetanus injection info at site. Ensure all small cuts/wounds are reported and treated immediately to prevent infection
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PPE – Personal Protective Equipment: Cut-resistant gloves Full sleeve cotton shirts & full trousers (no shorts at site). Safety shoes with thick sole to avoid thorn punctures. Safety goggles/face shield when using brush cutters (protection from flying thorn pieces).

Section:

Residual RR : NA	Risk level : NA
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Section: Hazard - Uneven ground / hidden pits

Section:

Risk: NA	RR: NA	Risk level : NA
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Section: Control Measures

E – Elimination: Backfill and level known pits and holes with soil or debris before survey/marketing starts. Remove large stones, bricks, scrap, and construction waste from survey paths. Restrict worker entry into unsafe/unleveled areas until made safe.	SB – Substitution: Instead of pegging in dangerous uneven areas, use bright spray paint/lime powder to mark boundaries. Replace wooden pegs (which can trip workers) with PVC pegs or marker tapes that are more visible.	EC – Engineering Controls: Barricade open pits using bamboo/metal stands with caution tape Use temporary walkways (wooden planks, metal plates, or sandbag leveling) for safe access across uneven zones. Install reflective markers for survey points in low-light conditions. Ensure drainage provision in rainy season to avoid hidden waterlogged pits.	AD – Administrative Controls: Conduct a pre-survey walkover inspection with safety team to identify pits and mark them on site layout. Train workers to walk carefully and avoid shortcuts in unbarricaded zones. Enforce no lone working during survey – always a minimum 2 persons. Daily supervisor inspection of survey paths to confirm barricades and pathways are intact. Communicate in toolbox talks: “If you see a pit, barricade it immediately – don't wait for safety team
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PPE – Personal Protective Equipment: Safety shoes with ankle support and slip-resistant sole. Helmet with chin strap (in case of fall against hard surface). Reflective Jacket if working near road or in low visibility. Gloves for handling barricades and pegs.

Section:

Residual RR: NA	Risk level : NA
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Section: Sun/heat exposure

Section:

Risk: NA	RR: NA	Risk level : NA
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Section: Control Measures

E – Elimination: Stop survey work during peak sun (12 pm – 3 pm). Avoid unnecessary waiting in open fields.	SB – Substitution: NA	EC – Engineering Controls: Provide temporary shade tents near survey zones. Arrange water coolers with ORS/electrolytes at the site in the respective location Provide portable fans or air movers for semi-closed survey areas. (If possible)	AD – Administrative Controls: Implement work–rest cycles in hot weather. Conduct toolbox talks on heat stroke symptoms (dizziness, heavy sweating, confusion). Maintain a buddy system so one worker monitors another. Supervisor to keep a heat index log (temperature + humidity monitoring) for further reference to implement additional measure
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PPE – Personal Protective Equipment: Cotton full-sleeve shirts & trousers. Helmet with neck flap or cap under Safety helmet. & safety glasses.

Section:

Residual RR: NA	Risk level : NA
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Section: Working near road/traffic

Section:

Risk: Struck by vehicle	RR: NA	Risk Level: NA
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Section: Control Measures

E – Elimination: Avoid survey work directly on near busy roads if possible. Shift survey points to safer off-road locations where traffic is less.	SB – Substitution: Use reflective survey tripods/staffs instead of wooden ones so drivers can see them clearly. Use spray paint or GPS marking instead of pegging on road edge.	EC – Engineering Controls: Place traffic cones, barricades, and warning signs at least 20–30 m before the survey point. If we survey the busy traffic area Create a safe work zone by using plastic barriers or drums filled with sand at the site premises Provide speed breakers with sand inside the site roads. Separate vehicle and pedestrian paths inside project areas.	AD – Administrative Controls: Deploy a traffic marshal/flagman for every vehicle while entering into site with stop/slow sign boards to control vehicles. Enforce speed limit (≤5 kmph inside the site). Do survey work only during low-traffic hours (early morning, late evening, or when movement is restricted). where applicable Conduct toolbox talk: Survey team must not stand on the road – stand inside barricaded area only. Drivers to be informed about ongoing survey works every day.
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PPE – Personal Protective Equipment: High-visibility reflective jackets (must, even in day time). Safety helmet with chin strap. Safety shoes with anti-slip sole. Reflective armbands or LED lights if working at night.

Section:

Residual RR: NA	Risk level : NA
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Section: Carrying / setting tripods

Section:

Risk: NA	RR: NA	Risk Level: NA
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Section: Control Measures

E – Elimination: Avoid long-distance manual carrying of tripods. Transport tripods close to work area using pickup vehicle, tractor, or site trolley.	SB – Substitution: Use lightweight aluminum or fiberglass tripods instead of heavy wooden/metal ones. Use carbon fiber prism poles which are lighter to carry	EC – Engineering Controls: Provide small trolleys, wheelbarrows, or carriers for moving multiple tripods and survey tools. Design storage points near survey areas so tripods are not carried far daily. Keep stands with adjustable height to reduce repeated bending during setup	AD – Administrative Controls: Toolbox talk on correct lifting posture: bend knees, keep back straight, hold tripod close to body. Enforce two-person lifting rule for heavy or awkward tripods. Rotate workers if survey involves long hours of carrying. Supervisor to check that tripods are stored safely and not left lying where they must be repeatedly lifted.
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PPE – Personal Protective Equipment: Gloves with grip for holding tripod securely. Safety shoes with ankle support to avoid slips/twists while carrying. Back support belt for workers who repeatedly lift heavy equipment.

Section:	
Residual RR: NA	Risk level : NA

Section: Electrical lines overhead
Section:

Risk: NA	RR: NA	Risk level : NA
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Section: Control Measures

E – Elimination: Do not do survey work directly under high-tension or low-tension lines. Change survey line alignment to a safe area if possible.	SB – Substitution: Use fiberglass or wooden survey rods/staffs instead of metal ones. Use shorter survey rods in low-clearance areas. EC – Engineering Controls Put danger signboards and barricades near areas with overhead lines. Mark a safe clearance zone (as per CEA/IS rules normally 3 m for LT, 6 m for HT lines). Provide warning flags on rods so surveyors see them near lines.	AD – Administrative Controls: Permit-to-Work (PTW) is required before starting a survey near power lines. Supervisor to check overhead clearance before the survey team starts. Give a toolbox talk on “Safe Distance from Power Lines”. Inform all survey team: “Never lift rods vertically near live wires.” If a shutdown is needed, coordinate with the electricity board/contractor in advance	PPE – Personal Protective Equipment: Insulated gloves for surveyors working near HT/LT lines. Safety helmet with a chin strap. Rubber-soled safety shoes. Reflective jacket if working near roadside power poles.
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Section:	
Residual RR: NA	Risk level : NA

Section: Struck by hammer while driving pegs
Section:

Risk: NA	RR: NA	Risk level: NA
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Section: Control Measures

E – Elimination: Avoid hammering where possible use spray paint or lime powder for boundary marking instead of pegs in open areas. For very hard soil, drill a small hole first with rotary hammer so less hammer force is needed.	SB – Substitution: Use manual post driver (hammerless peg driver) instead of normal hammer no chance of hitting fingers. Use PVC/wooden pegs instead of steel pegs (require less force to drive). Use rubber mallet instead of steel hammer for light pegging.	EC – Engineering Controls: Use a peg holder tool or clamp so worker's hand is not near the striking area. Keep a 2 m safe zone around the hammering area using cones/tape. Use anti-vibration / soft-faced hammers that reduce slips and chips.	AD – Administrative Controls: Toolbox talk before pegging: show safe hammering method. Strict instruction: “Never hold peg directly with bare hand when someone is hammering.” Two-person system: one operates, one observes safety. Daily check of hammer: no loose heads, no cracks in handle. Supervisor to stop pegging if hammer is unsafe or PPE not used.
PPE – Personal Protective Equipment: Cut-resistant gloves or thick canvas gloves. Safety goggles to protect eyes from chips. Safety helmet with chin strap. Steel-toe safety shoes			

Section:	
Residual RR: NA	Risk level : NA

Section: Flying chips from hammer/pegs
Section:

Risk: NA	RR: NA	Risk level: NA
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Section: Control Measures

E – Elimination: Avoid steel-on-steel hammering where chips fly. Use paint or chalk marking instead of pegging in rocky/hard soil.	SB – Substitution: Use PVC or wooden pegs instead of steel. Use rubber mallet or hammer with rubber cap instead of steel hammer.	EC – Engineering Controls: Provide peg holders so worker's face and eyes are away from striking area. Use hammer with anti-spark/fiber head (soft striking face). Maintain 2 m exclusion zone so others are not hit by flying chips.	AD – Administrative Controls: Toolbox talk on Never hit peg directly with steel hammer always use safe tool. Supervisor to inspect hammers daily discard damaged/mushroomed heads. Train workers to stand sideways while striking, not directly in line. Allow only trained workers to do pegging not helpers or unskilled labor.
PPE – Personal Protective Equipment: Safety goggles/face shield (mandatory). Gloves to protect from small flying chips. Helmet for head protection. Safety shoes.			

Section:

Residual RR: NA	Risk level : NA
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Section: Manual handling of pegs

Section:

Risk: NA	RR: NA	Risk level: NA
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Section: Control Measures

E – Elimination: Avoid carrying pegs by hand over long distances. Drop pegs closer to survey area using a pickup, tractor, or site trolley instead of manual carrying.	SB – Substitution: Use lightweight PVC or plastic pegs instead of heavy wooden/steel ones. Use shorter pegs where technically possible easier to handle.	EC – Engineering Controls: Provide wheelbarrows, hand trolleys, or buckets to carry multiple pegs. Store pegs at temporary storage points near work zones to reduce travel distance. Use proper stacking racks so workers can lift pegs at waist height (not from ground level).	AD – Administrative Controls: Toolbox talk on safe lifting: bend knees, keep back straight, don't twist body while carrying. Enforce two-person lifting for heavy bundles. Rotate workers if pegging involves continuous handling to avoid fatigue. Supervisor to check that pegs are not overloaded in one bundle (max 5–6 pegs per person). Keep first aid support ready in case of muscle sprain.
PPE – Personal Protective Equipment: Gloves with good grip to avoid slipping. Safety shoes with ankle support. Back support belt for workers with repeated lifting tasks.			

Section:

Residual RR: NA	Risk level : NA
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Section: Slips on muddy ground

Section:

Risk: NA	RR: NA	Risk level : NA
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Section: Control Measures

E – Elimination: Stop survey and site marking work during heavy rainfall or when ground is waterlogged. Avoid using muddy/slippery access paths identify alternate safe routes.	SB – Substitution: Use wooden planks or bamboo walkways instead of walking directly on mud. Spread gravel, quarry dust, or sand on slippery paths to reduce slipping.	EC – Engineering Controls: Create temporary drainage channels so water does not collect in survey areas. Provide anti-slip mats or boards near instrument setup points. Barricade dangerous muddy slopes with caution tape. Install temporary lighting in low visibility (early morning/evening) so workers can see ground hazards.	AD – Administrative Controls: Toolbox talk before monsoon: If you see lightning, stop work and move to a safe shelter immediately. Supervisor to monitor weather conditions daily during the monsoon. Emergency SOP: No work in open areas if thunder/lightning is seen within a 10 km radius. (If we have correct information) Display safety signage: "Lightning-prone area — work stops during storms." Train workers: never take shelter under isolated trees, scaffolds, or tower cranes during lightning.
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PPE – Personal Protective Equipment: Gumboots with anti-slip sole (mandatory during monsoon). Safety helmet with chin strap. Reflective jacket if visibility is low. Safety gloves for stable grip while moving equipment.

Section:

Residual RR: NA	Risk level : NA
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Section: Lightning strike (open ground, metal staff)

Section:

Risk: NA	RR: NA	Risk level : NA
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Section: Control Measures

E – Elimination: Stop all survey/site work immediately during thunderstorms, lightning, or heavy rain. Prohibit carrying metallic tripods, rods, or staffs in open areas during lightning activity.	SB – Substitution: Use fiberglass or wooden survey staffs instead of metal ones. Replace metal tripods with aluminum/fiberglass lightweight tripods.	EC – Engineering Controls: Provide lightning arrestors on tall structures and open high-rise construction zones. Designate safe shelters (site office, shed, container cabins) for employees & workers to wait during lightning. Barricade and restrict access to open fields when lightning is predicted. Use weather monitoring apps to predict lightning activity (many free mobile apps are available in India).	AD – Administrative Controls: Toolbox talk before monsoon: If you see lightning, stop work and move to a safe shelter immediately. Supervisor to monitor weather conditions daily during the monsoon. Emergency SOP: No work in open areas if thunder/lightning is seen within a 10 km radius. (If we have correct information) Display safety signage: “Lightning-prone area — work stops during storms.” Train workers: never take shelter under isolated trees, scaffolds, or tower cranes during lightning.
PPE – Personal Protective Equipment: Rubber-soled safety shoes (reduce grounding risk). Helmet with a chin strap. Raincoat made of non-conductive material (PVC/fiber). (Note: PPE only reduces small risks; lightning is mainly controlled by elimination & admin controls.)			

Section:

New check tuybhnk: NA	Residual RR: NA
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History

Created On	Created By	Comment	Attachments
12-Feb-2026 01:38:00 PM	Rajkumar Pativada	A new record was created: Site Name set to 'Central Team' Hira Type set to 'Hazard Identification & Risk Assessment - Electrical Work jythfg' Hira Status set to 'Submitted'	