Organisation Banner

Risk Assessment Report

Title		**Document Number**	MHC-EHS-HIRA-25
Department	NA	**Site Name**	Leeper, Suffield Depot, Fleischmanns, Alanreed, Galeville, Rosewood, Bowers, Vinings, Weldona, Cowgill, Fort Myers Beach, Council Bluffs
Risk Assessment Type	Temporary Electrical Installations	**Status**	Publish
Next Revision Date	18-Mar-2026	**Revision Number**	1.0
Created By	Renard Whatley	**Created On**	02-Mar-2026 11:07:47 AM
Modified On	02-Mar-2026 11:08:11 AM		

Sections

Activity: Temporary Electrical Installations

Sub-Activity: Material unloading / handling (panels, DBs, cables)

Hazard

Hazard	Fall of electrical panels/appliances during unloading

Risk	Foot/hand injury
Likelyhood	4
Consequences	4
RR	16
Risk Level	NA

Control Measures

E - Elimination	Avoid manual unloading of heavy panels; use mechanical lifting devices. Pre-fabricate smaller modules to reduce handling weight.
SB – Substitution	Replace traditional heavy DB panels with lightweight modular panels if design permits. Use cable reels instead of loose bundled cables for easier handling.
EC – Engineering Controls	Provide lifting cranes, hoists, or forklifts with rated capacity. Use lifting slings and clamps specifically designed for panels. Ensure level, firm ground for unloading zones.
AD – Administrative Controls	Conduct a pre-lift inspection of slings, clamps, and lifting equipment. Train workers on safe lifting posture and team lifts for medium-weight items. Maintain clear access routes and exclude unauthorized personnel from unloading zone.
PPE – Personal Protective Equipment	Safety boots with steel toe Cut-resistant gloves Helmet with chin strap High-visibility vest

Residual Risk

Likelyhood	3
Consequences	4
Residual RR	12
Risk level	NA

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Manual handling of heavy bars

Risk	Back strain, musculoskeletal disorders
Likelyhood	4
Consequences	3
RR	12
Risk Level	Medium Risk

Control Measures

E - Elimination	Avoid on-site manual erection of heavy panels; use mechanical erection tools. Pre-assemble panels at ground level wherever possible
SB – Substitution	Replace temporary heavy panels with lighter prefabricated panels. Use telescopic lifts or scissor lifts to reduce height exposure.
EC – Engineering Controls	Provide fall arrest systems, scaffolds, and ladders compliant with standards. Install toe boards and catch platforms to prevent falling objects. Ensure proper earthing before energization.
AD – Administrative Controls	Permit-to-work for panel erection. Two-person minimum policy when working at height. Toolbox talks emphasizing fall prevention, head protection, and electrical hazard awareness.
PPE – Personal Protective Equipment	Full-body harness and lanyard Helmet with chin strap Safety boots Insulated gloves if handling live parts

Residual Risk

Likelyhood	3
Consequences	3
Residual RR	9
Risk level	Meduim Risk

Additional Control Measures	NA
Opportunities	NA

Sub-Activity: Switchyard / Panel installation

Hazard

Hazard	Fall of men during panel erection

Risk	Fatal fall
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E – Elimination	Avoid manual pulling of long/heavy cables; use mechanical winches. Pre-route cables at ground level where possible.
SB – Substitution	Use lightweight pre-terminated cables or flexible cable types for easier handling. Replace manual pulley systems with motorized cable pullers.
EC – Engineering Controls	Install temporary anchor points and cable trays securely. Provide rope guards or snap-back guards on tensioned cables. Ensure working platforms are level and have edge protection.
AD – Administrative Controls	Permit-to-work for cable pulling at height. Inspect winches, ropes, and pulleys daily. Ensure two-person operation during manual cable pulling. Toolbox talks on snap-back hazards and posture while pulling.
PPE – Personal Protective Equipment	Helmet with chin strap Safety boots Gloves for handling cables Fall arrest harness when working at height

Residual Risk

Likelyhood	3
Consequences	5
Residual RR	15
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Fall of objects (panels, tools)

Risk	Head injury
Likelyhood	4
Consequences	4
RR	16
Risk Level	High Risk

Control Measures

E – Elimination	De-energize circuits before work; avoid live work wherever possible.
SB – Substitution	Use insulated tools and barriers instead of working barehanded near live circuits.
EC – Engineering Controls	Install insulated barriers and lockout/tagout devices. Use arc flash-rated panels and enclosures.
AD – Administrative Controls	Permit-to-work system for live work. Only trained and authorized electricians allowed. Maintain safe distance and buddy system. Toolbox talks on arc flash, shock, and short-circuit hazards.
PPE – Personal Protective Equipment	Arc flash-rated gloves and clothing Safety helmet with face shield Insulated boots Eye protection

Residual Risk

Likelyhood	3
Consequences	4
Residual RR	12
Risk Level	Medium Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Poor earthing connection

Risk	Shock, electrocution
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E - Elimination	Avoid water ingress by elevating DBs and routing cables away from wet areas
SB – Substitution	Replace temporary DBs with IP-rated enclosures. Use modular, pre-wired panels to reduce on-site wiring.

EC – Engineering Controls	Install drip covers, cable glands, and junction box seals. Maintain organized cable trays to avoid loose wires.
AD – Administrative Controls	Routine inspection of connections, earthing, and DB integrity. No unauthorized tapping of live cables. Toolbox talks on wet conditions, electrical hazards, and housekeeping.
PPE – Personal Protective Equipment	Insulated gloves Safety boots Helmet Arc-rated clothing

Residual Risk

Likelyhood	3
Consequences	5
Residual RR	15
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

Sub-Activity: Cabling works (tray, busbar, pulling)

Hazard

Hazard	Fall of workers from height during tray/busbar fixing

Risk	Fatality
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E - Elimination	Avoid working at height by pre-assembling cable tray sections at ground level before lifting to final position. Redesign tray routes to run at accessible heights wherever possible. Use prefabricated busbar trunking sections to reduce time spent at height.
SB – Substitution	Use scissor lifts, boom lifts, or MEWPs instead of ladders/scaffolds. Replace heavy metallic trays with lightweight FRP or aluminum trays to reduce handling load at height. Use telescopic tray supports to minimize climbing.
EC – Engineering Controls	Provide fully erected scaffolding with guardrails, mid-rails, and toe boards. Ensure firm, level platforms with load rating displayed. Install temporary anchor points for fall arrest systems above work zone. Use tool lanyards to prevent dropping tools.
AD – Administrative Controls	Issue Working at Height Permit before starting. Conduct daily inspection of platforms, ladders, and lifting equipment. Assign trained and certified persons only. Two-person rule for height work; spotter to monitor ground area. Toolbox talks on fall hazards and safe climbing techniques.
PPE – Personal Protective Equipment	Full body harness + double lanyard with energy absorber Helmet with chin strap Safety shoes with slip-resistant sole Gloves for grip when fastening trays/busbars

Residual Risk

Likelyhood	3
Consequences	5
Residual RR	15
Risk level	High Risk

Additional Control Measures	NA

Opportunities	NA

Hazard

Hazard	Fall of material/tools while fixing

Risk	Head injury
Likelyhood	4
Consequences	4
RR	16
Risk Level	High Risk

Control Measures

E – Elimination	Remove unnecessary tools/materials from height—assemble at ground level before lifting. Avoid manual carrying of trays above head; use mechanical lifting.
SB – Substitution	Replace loose tools with holster-based tool systems. Use magnetic-tip tools to reduce accidental drop slips.
EC – Engineering Controls	Install toe boards and mesh screens on scaffolds/mezzanines. Use tool lanyards for all hand tools. Provide overhead protection (barricading nets or GI sheets) for workers below.
AD – Administrative Controls	Barricade drop zone and restrict entry. Appoint a banksman to control personnel movement below. Daily inspection for unsecured fasteners, nuts, bolts. Toolbox talk: “NO working under elevated load zones.”
PPE – Personal Protective Equipment	Helmet with chin strap Safety shoes Gloves for handling tray sections Eye protection (falling dust/metal)

Residual Risk

Likelyhood	3
Consequences	4
Residual RR	12
Risk level	Medium Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Cable pulling with winch/pulleys

Risk	Failure of winch/rope → Snap-back injuries
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E – Elimination	Avoid winch pulling where possible by using shorter cable lengths or “pull-from-both-ends” manual methods for light sections.
SB – Substitution	Replace manual pulley systems with motorized cable pullers equipped with load limiters. Use synthetic low-recoil ropes instead of steel ropes to reduce snap-back force.
EC – Engineering Controls	Use winches rated higher than the pulling load (SWL compliance). Install snatch blocks, guide rollers, and anti-snap-back guards. Provide fixed anchor points with certified capacity. Use cable lubricants to reduce tension load

AD – Administrative Controls	Permit-to-work for winch pulling. Only trained winch operators allowed. Maintain exclusion zone—NO personnel allowed in line-of-fire of rope. Pre-pull equipment inspection: rope condition, pulley alignment, anchor points. Toolbox talks on snap-back hazards.
PPE – Personal Protective Equipment	Helmet Gloves with high grip Safety boots Eye protection Long-sleeve clothing to protect from rope burn

Residual Risk

Likelyhood	3
Consequences	5
Residual RR	0
Risk Level	NA

Additional Control Measures	NA
Opportunities	NA

Sub-Activity: Working near live loads

Hazard

Hazard	Direct contact with live wires

Risk	Fatal electrocution
Likelyhood	5
Consequences	5
RR	25
Risk Level	High Risk

Control Measures

E – Elimination	De-energize all circuits before starting work — NO live work unless absolutely unavoidable. Reroute or isolate temporary cables so no exposed live parts remain. Remove all temporary open/joint connections by replacing them with sealed connectors.
SB – Substitution	Use insulated tools, insulated mats, and insulated ladders instead of metal ladders. Replace open temporary joints with plug-and-play connectors or factory-made waterproof terminations. Replace exposed copper tails with pre-terminated cable ends.
EC – Engineering Controls	Install lockout/tagout (LOTO) devices on DBs and breakers. Use insulated barriers, acrylic shields, and lockable covers around live areas. Provide Residual Current Devices (RCDs) or ELCBs on temporary DBs to cut fault currents. Color-code cables to prevent accidental touching of live conductors. Ensure a minimum clearance around live DBs to prevent accidental contact.
AD – Administrative Controls	Permit-to-work for any task within proximity of live cables. Only licensed electricians allowed to work near energized equipment. Pre-task briefing on shock hazards, approach distances, and emergency response. Mark live zones with danger signage: “DANGER: LIVE CIRCUIT – DO NOT TOUCH.” Strict enforcement of “No wet work near live wiring.” Maintain proper illumination to avoid accidental touching in low-light areas.
PPE – Personal Protective Equipment	Insulated gloves (Class 0 or as required) Dielectric safety shoes Helmet with arc-rated face shield Flame-resistant clothing (cotton or arc-rated fabric)

Residual Risk

Likelyhood	4
Consequences	5
Residual RR	20
Risk Level	NA

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Arc flash from panel/DB

Risk	Fatal burns, death
Likelyhood	5
Consequences	5
RR	25
Risk Level	High Risk

Control Measures

E – Elimination	Shut down the panel/DB completely before opening doors or accessing terminals. Avoid racking in/out breakers while energized. Remove temporary overloaded circuits at design stage.
SB – Substitution	Use arc-resistant panels instead of standard DBs where possible. Replace manual torqueing and testing near live terminals with remote-operated testing tools. Use MCBs with arc quenching features.
EC – Engineering Controls	Install arc flash relays, fast-acting breakers, and arc suppression chambers. Provide clear arc flash boundaries and barricades around energized DBs. Keep panels closed, latched, and covered with no exposed busbars. Use thermographic scanning to detect heating before an arc flash event.
AD – Administrative Controls	Arc flash risk assessment and boundary calculation. Permit-to-work for energized panel access. Only authorized electricians trained in arc flash hazards allowed. Display arc flash labels showing PPE category and safe approach distance. Toolbox talks on: Arc flash blast pressure Thermal burns Steps to avoid fault creation
PPE – Personal Protective Equipment	Arc-rated (ATPV-rated) full-body suit Arc-rated gloves Arc-rated face shield and hood Dielectric boots& Fire-resistant underlayers

Residual Risk

Likelyhood	4
Consequences	5
Residual RR	20
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Overloading of temporary DBs

Risk	Fire, explosion
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E – Elimination	Remove redundant loads and plan electrical distribution to avoid multiple high-load equipment on one DB. Replace temporary DBs with properly sized DBs designed for expected load.

SB – Substitution	Use higher-capacity DBs with larger busbar ratings and MCBs. Replace old/defective DBs with modern insulated modular DBs. Substitute temporary power with generator-based power if load exceeds DB capacity.
EC – Engineering Controls	Install MCBs and RCCBs with appropriate ratings to prevent overload. Use load monitoring meters to continuously monitor consumption. Ensure proper cable sizing to prevent heating. Provide ventilation around DBs to reduce overheating risk. Use cable glands and proper termination to avoid loose, high-resistance connections.
AD – Administrative Controls	Load calculation by a qualified electrical engineer prior to installation. Daily temperature check on DB casing for overheating. No unauthorized tapping or connecting equipment. Permit-to-work for addition of any new load. Regular inspection of DBs for burn marks, discoloration, and loose terminations.
PPE – Personal Protective Equipment	Insulated gloves Safety boots Arc-rated clothing (if opening panel) Helmet with face shield

Residual Risk

Likelyhood	3
Consequences	5
Residual RR	15
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

Sub-Activity: Operation & Maintenance

Hazard

Hazard	Water ingress into DBs/cables (rain)

Risk	Short circuit, electrocution
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E – Elimination	Relocate temporary DBs/cables away from water-prone areas (low-lying, near drains, open areas). Remove all non-weatherproof connections and replace with sealed connections.
SB – Substitution	Use IP65/IP67-rated weatherproof DBs instead of standard indoor DBs. Replace normal cables with armoured, waterproof, UV-resistant cables for outdoor runs. Use factory-made waterproof plugs and sockets instead of taped joints
EC – Engineering Controls	Provide canopies, sheds, or rain covers above temporary DBs. Use cable glands, grommets, and sealing compounds to prevent water entry. Elevate DBs and cable joints at least 300–500 mm above ground level. Install GFCI/RCCB to trip in case of water-induced leakage currents.
AD – Administrative Controls	Conduct inspections before and after rains to identify wet cables, condensation, or seepage. Strictly prohibit temporary fixes using polythene bags or tape. Maintain a water ingress log and immediate reporting procedure. Toolbox talk: “Do NOT touch DBs with wet hands or during rain.”
PPE – Personal Protective Equipment	Insulated gloves Dielectric shoes Helmet with face shield FR (flame-resistant) clothing

Residual Risk

Likelyhood	3
Consequences	5

Residual RR	15
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Loose connections/heating of wires

Risk	Fire hazard
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E – Elimination	Remove overloaded/unnecessary circuits to reduce heat build-up. Replace old temporary wiring with new, sized cables to eliminate heating.
SB – Substitution	Use higher-quality copper lugs, ferrules, and terminals instead of makeshift joints. Replace manual screw-type terminals with spring-loaded terminals that resist loosening.
EC – Engineering Controls	Install thermal sensors/thermal labels on DBs to detect overheating. Use properly sized MCBs for each circuit to prevent overcurrent heating. Ensure tight termination using torque wrench following manufacturer's torque settings.
AD – Administrative Controls	Periodic tightening/torqueing schedule—weekly or as per load. Maintain logbook for heating complaints and corrective action. Only certified electricians allowed to open/remove panel covers. Conduct thermographic inspection to detect hot spots.
PPE – Personal Protective Equipment	Insulated gloves Safety boots Arc-rated clothing Helmet with face shield

Residual Risk

Likelyhood	3
Consequences	5
Residual RR	15
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Unauthorized tapping of cables

Risk	Electrocution, fire
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E – Elimination	Remove all unused or illegally tapped temporary lines. Redesign temporary power distribution so workers don't feel forced to "make their own taps."
SB – Substitution	Use industrial-grade extension boards instead of tapping live wires. Replace multi-core cable runs with dedicated circuits to eliminate need for tapping

EC – Engineering Controls	Provide lockable, tamper-proof DBs and cable routes. Install RCCB/ELCB to trip during hazardous tapping attempts. Use cable trays and conduits so that live cables cannot be accessed easily.
AD – Administrative Controls	Strict policy: “No tapping without permit.” Supervisors conduct routine checks for illegal joints. Display warning signage on DBs and cable trunks: “NO UNAUTHORIZED CONNECTIONS.” Toolbox talk: show examples of burns and fires caused by tapping.
PPE – Personal Protective Equipment	Insulated gloves Dielectric footwear Arc-rated clothing Helmet

Residual Risk

Likelyhood	3
Consequences	5
Residual RR	15
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Poor housekeeping around panels	Poor housekeeping around panels

Risk	Trip/fall onto live wires
Likelyhood	4
Consequences	4
RR	16
Risk Level	High Risk

Control Measures

E – Elimination	Remove all scrap, debris, unused cables, tools, and materials from panel surroundings daily. Eliminate storage of materials near or in front of electrical panels.
SB – Substitution	Use cable trays, hooks, and bins instead of leaving cables on the floor. Replace loose floor mats with non-slip rubber flooring to prevent trip hazards.
EC – Engineering Controls	Mark yellow safety zones (1-meter clear zone) around DBs/panels. Install panel guards or small barricades to prevent accidental bumping. Provide proper lighting so ground-level hazards near the panel are visible.
AD – Administrative Controls	Daily housekeeping checklist by supervisors. Assign dedicated housekeeping team during operations. Toolbox talk: “DB area must be obstruction-free at all times.” Strict rule: No coiling/parking of spare cables in DB access area
PPE – Personal Protective Equipment	Safety boots (anti-slip) Helmet Gloves when clearing materials High-visibility vest if panel is roadside or near equipment routes

Residual Risk

Likelyhood	3
Consequences	4
Residual RR	12
Risk Level	Medium Risk

Additional Control Measures	NA
Opportunities	NA

Sub-Activity: Dismantling

Hazard

Hazard	Premature removal of earthing / isolation

Risk	Fatal electrocution
Likelyhood	4
Consequences	5
RR	20
Risk Level	High Risk

Control Measures

E – Elimination	Completely de-energize and isolate all circuits before dismantling. Remove all temporary live connections permanently so no live point remains in the DB.
SB – Substitution	Replace manual isolation methods with lockable rotary isolators and lockable switch disconnection units. Use color-coded insulated covers on any conductor awaiting safe removal.
EC – Engineering Controls	Apply LOTO (Lockout–Tagout) on the main feeder and sub-circuits. Provide test points and insulated inspection windows to verify de-energization. Install earthing bars and discharge rods to ensure residual energy is removed.
AD – Administrative Controls	Mandatory permit-to-dismantle issued after electrical engineer sign-off. Use a step-by-step checklist: Isolate → 2. Lock → 3. Tag → 4. Test → 5. Earth → 6. Dismantle. Only licensed electricians allowed to remove earthing or touch isolation points. Supervisor must verify “ZERO VOLTAGE” using a calibrated tester before dismantling starts
PPE – Personal Protective Equipment	Insulated gloves (certified) Dielectric shoes Helmet with face shield Arc-rated clothing (FR suit)

Residual Risk

Likelyhood	3
Consequences	5
Residual RR	15
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Dropped DBs/panels during removal

Risk	Crush injuries
Likelyhood	4
Consequences	4
RR	16
Risk Level	High Risk

Control Measures

E – Elimination	Eliminate manual lifting by planning dismantling using trolleys, chain blocks, or small lifting devices. Remove all attached equipment to reduce weight before dismantling the DB.
SB – Substitution	Use lightweight modular DBs instead of heavy steel or old-type panels. Replace manual eyebolt lifting with rated lifting frames designed for DB removal.
EC – Engineering Controls	Use proper lifting slings, shackles, and spreader bars for handling larger panels. Ensure DB is fully supported on stands or mechanical lifters before unbolting it. Barricade the drop zone; install warning signage. Maintain stable, level ground for handling equipment

AD – Administrative Controls	Pre-task risk assessment and lift plan. Only trained rigging/lifting personnel involved in DB removal. Supervisor ensures safe sequence: disconnect → unbolt → support → lower. Toolbox talk: pinch points, weight distribution, and safe hand placement.
PPE – Personal Protective Equipment	Steel-toe safety boots Heavy-duty gloves Helmet with chin strap High-visibility vest

Residual Risk

Likelyhood	3
Consequences	4
Residual RR	12
Risk Level	Medium Risk

Additional Control Measures	NA
Opportunities	NA

Hazard

Hazard	Cutting live cables without testing

Risk	Electrocution, fire
Likelyhood	5
Consequences	5
RR	25
Risk Level	High Risk

Control Measures

E – Elimination	Strict rule: No cable is to be cut until verified “dead” and isolated. Remove all temporary live circuits beforehand—convert site to a single controlled power source.
SB – Substitution	Replace manual cable cutters with insulated cable cutters designed for energized systems (as backup safety). Use remote-operated hydraulic cutters to eliminate proximity if live conditions cannot be fully ensured.
EC – Engineering Controls	Mandatory “Test → Prove Dead → Lockout → Tagout” procedure. Use voltage detectors, proving units, and insulated testers to confirm absence of voltage. Cover adjacent live circuits with insulated shrouds, blankets, or barriers. Use arc-rated DBs with isolated compartments.
AD – Administrative Controls	Permit-to-work specifically for “cable cutting/dismantling.” Only certified electricians allowed to cut cables. Supervisor/Electrical Engineer must sign: “Cable tested dead and safe to cut.” Toolbox talk on arc-flash, shock, and “never trust a cable by appearance.” Maintain a safe zone around cable cutting work—no other workers nearby.
PPE – Personal Protective Equipment	Arc-rated (ATPV-rated) suit Insulated gloves Face shield with arc flash protection Dielectric footwear Helmet (electrical class)

Residual Risk

Likelyhood	4
Consequences	5
Residual RR	20
Risk Level	High Risk

Additional Control Measures	NA
Opportunities	NA

History

Created On	Created By	Comment	Attachments
02-Mar-2026 11:08:11 AM	Renard Whatley	Hira Status has been updated to 'Publish' Testing	
02-Mar-2026 11:07:47 AM	Renard Whatley	A new record was created: Hira Type set to 'Temporary Electrical Installations' Hira Status set to 'Submitted' Next Revision Date set to '18-Mar-2026' Revision Number set to '1'	