



VUL-SWP-125(a)-Relocation of Highwall Mining Infrastructure

SAFE WORK PROCEDURE (SWP)					
Description	Relocation of Highwall Mining Infrastructure				
Site	Vulcan Mine				
Department	Highwall Mining				
PPE Required				Job Step Analysis Reference	
					Job Hazard Analysis- Prepare HWM power farm for relocation Job Hazard Analysis- HWM Infrastructure relocation
Task Specific PPE				Other Relevant Information	
				☐ Relevant OEM instructions & specification available ☐ Permit Required – HV Access Permit ☐ OCE Report	
VUL SOP / PRO Reference					
VUL-SOP-021a-Access to High Voltage Conductors VUL-SOP-021-Access to Exposed Electrical Conductors VUL-SOP-065-Personal Protective Equipment VUL-SOP-076-Using Mobile Plant VUL-SOP-078-Isolation & Tagging VUL-SOP-096b-Manual Handling & Ergonomics			VUL-SOP-125(2)(a)-Highwall Mining Area entry and Evacuation VUL-MOP-028-Cable Management VUL-MOP-089-Dust Management and Monitoring VUL-MOP-144-Lighting VUL-PHMP-02-Vehicle Interaction VUL-SWP-125-Highwall Mining Operations		
Critical (Hazard) Risks					
Ensure controls are in place for critical risks associated with this task. These include:			- Electrical Shock - Dropped Load/Crushing Injury - Vehicle or Mobile Plant Interaction - Manual Handling & Ergonomics - Pinch points and Caught between Hazards - Load instability or shift during transport - Equipment or lifting gear failure - Slips, trips or falls		



People, Equipment, Materials and Tools Required			
People	Equipment	Materials	Tools
Electrician			Test meters Hand tools
Operator	Loader- Bucket and forks		
Operators	PPE		
1. Job Preparation			
- Conduct pre-start meeting to discuss tasks, hazards and controls - Access Highwall Mining Relocation Scope from Highwall Mining Manager - Confirm New Infrastructure location, confirm Pad preparation completed: level, drainage complete, bunding compliant, LV road correct, trailing cable way prepared. - Confirm Infrastructure relocation Path, communicate with any active circuit and OCE around movement plans, identify and assess potential hazards along movement path. - Relocate Highwall Miner to safe place for isolation as required - Confirm all required personnel and equipment are available and in good condition, hang cable hooks on generators, fork attachment on loader - Determine which pieces of infrastructure need to be relocated first to allow for proper set up of new pad			
2. Electrical Isolation and Disconnection			
- Electricians to conduct isolations as per High Voltage Switching Sheet and lock out in accordance with VUL-SOP-078-Isolation and Tagging - Verify zero energy state using a test instrument - Electrician to issue High Voltage Access Permit for duration of works, HV keys to be placed in the HV Lockbox, worker's personal isolation locks to be placed on lockbox - Decommission the HV trailing cable run by disconnecting the plug from substation - Disconnect generator interconnecting cables from VIT156 and VIT158 - Disconnect the power supply cables from substation - Disconnect Nitrogen plant cable from substation - Disconnect extension leads from nitrogen plant to diesel tank, roll up on diesel skid			
3. Infrastructure Decommissioning			
- Remove cable tray lids and place them in a safe area for relocation, putting all screws in a safe place - Roll up generator interconnecting wires on VIT157 - Roll up Nitrogen plant cable on nitrogen plant skid - Disentangle and roll up power supply cables, starting with the generator that needs to be moved first, secure at a suitable height to prevent damage during transport - Disconnect nitrogen plant interconnection pieces - Remove earth straps from cable tray, move tray to a safe area for relocation - Visually inspect the entire area for any potential issues that could arise during the relocation process - Trailing cable to be disentangled from nitrogen and water pipes, put in a safe area for relocation			



4. Infrastructure Relocation

- Determine what order the infrastructure will be relocated in for proper setting up of the new pad
- Communicate with any active circuit and OCE before relocation of any infrastructure, active circuits may need to be shut down for relocation duration for safe work
- Generators, Substation, Fuel Pod:
 - Attach the tow chains to the skid tow points (All chains and tow slings to be in date)
 - Attach the tow chain to the tow point on Loader
 - Tow behind loader, ensuring speed is no greater than **5km/h**
 - Spotter to follow load monitoring cable and plug locations, dust production, and any other issues
- Nitrogen Plant, Containers, Cable Tray and Lids:
 - Relocate on loader forks, ensuring speed is no greater than **5km/h**, Cable tray and lids to be secured using ratchet straps before moving
 - Spotter in front of load monitoring load stability, driving path, and any other issues due to low vision of loader operator
- Transport trailing cable using correct cable handling processes as per VUL-MOP-028-Cable Management, transported separately from nitrogen and water lines to ensure it is not tangled and stays segregated
- Nitrogen and water lines towed behind light vehicle using slings
- Ensure new layout matches Highwall Mining Relocation Scope provided and exclusion areas adhered to

5. Infrastructure Recommissioning

- Lay out cable trays, on blocks, as per design and reconnect earth straps, ensuring connection to substation, generators and nitrogen plant
- Lay power cables in cable tray, ensuring plugs are segregated and easily identifiable as to which generator they are from, or reconnected by the electrician as the cables are laid in
- Lay Nitrogen plant cable in cable tray
- Lay out generator interconnecting wires back to VIT156 and VIT158
- Run extension lead from nitrogen plant to diesel pod
- Replace cable tray lids, screwing them back down
- Reconnect nitrogen generator interconnection pieces
- Hang trailing cable over the highwall separately to ensure not tangled with water and nitrogen and place blue cones 20m apart to correct identify trailing cable

6. Electrical Reconnection and Energisation

- Reconnect extension lead from nitrogen plant to diesel tank
- Reconnect Generator Interconnection cables to VIT156 and VIT158
- Reconnect power supply cable to substation
- Reconnect nitrogen plant cable to substation
- Reconnect HV trailing cable plug to substation
- Electrician to cancel HV Access permit, after having work group remove personal isolation locks from the HV lockbox
- Electricians to conduct re-energisation process as per High Voltage Switching sheet