



VULCAN MINE

Standard Operating Procedure Locating and Dealing with Electrical Faults



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1. PURPOSE

The purpose of this procedure is to effectively manage the risks associated with locating and dealing with electrical faults as required by Section 22 of the Coal Mining Safety and Health Regulation 2017 and is supported by VUL-RSK-022(i)-Locating and Dealing with Electrical Faults.

2. SCOPE

This procedure applies to all employees, contractors and visitors.

3. DEFINITIONS

Electrical Worker	Appointed electrician holding a trade certificate as defined in the electrical safety regulation (Queensland) and site-appointed by the Site Senior Executive (SSE).
Extra-low voltage	Not exceeding 50 V a.c. or 120 V ripple-free d.c.
Low Voltage (LV)	Exceeding extra-low voltage, but not exceeding 1200V a.c. or 1500V d.c.
High voltage (HV)	Exceeding low voltage.

4. PROCEDURE

Work methods for use at Vulcan Mine for electrical work shall be written in accordance with the electrical safety code of practice, "Managing electrical risk in the workplace". Low voltage work procedures will also consider the requirements of AS/NZS 4836-2011 Safe working on or near low-voltage electrical installations and equipment.

Appointed electrical workers may undertake resetting of electrical faults at the mine as per this procedure.

Authorised persons may undertake resetting of electrical trips at the mine as per the procedures below.

- VUL-MOP-022(1)-01 Re-energise Tripped Fixed Plant Electrical Circuit
- VUL-MOP-022(1)-02 Re-energise Tripped LV Electrical Circuit
- VUL-MOP-022(1)-03 Re-energise Tripped Welding Equipment
- VUL-MOP-022(1)-04-Re-energise Tripped HV Electrical Circuit

Step 1: Confirm reset authorisation

Only appointed electrical workers are permitted to:

- reset **low voltage** circuits
- reset **high voltage** circuits
- use electrical energy (other than electrical energy generated from appropriately designed test instruments) to locate, isolate or clear **ONLY** the following electrical faults:
 - electric motor overload
 - earth leakage trip related to an impedance earthing circuit
 - 30mA earth leakage trip
 - earth continuity trip

Following **VUL-MOP-022(1)-02 Re-energise Tripped LV Electrical Circuit** or **VUL-MOP-022(1)-04-Re-energise Tripped HV Electrical Circuit**.

Step 2: Conduct investigation LV protection trip

Only electrical workers appropriately trained, assessed and appointed for low voltage electrical work can carry out resets of low voltage circuit protection devices.

BEFORE resetting any low voltage protection device, the electrical worker shall:

- establish the circumstances relating to the trip, e.g. visible flashes, arcing, electrical burning smell, reports
- confirm safety of all personnel in immediate area
- record the protection device trip
- establish that the circuit is safe to re-energise.



If the circuit is unable to be reset, then the electrical worker shall commence further testing to establish the reason for the fault and tag out of service until repaired, as detailed in VUL-MOP-022(1)-02 Re-energise Tripped LV Electrical Circuit

Restoring power into a fault could cause serious injury, equipment damage or fires

Step 3: Conduct investigation HV protection trip

Only electrical workers appropriately trained, assessed and appointed for high voltage work can carry out resets of high voltage protection devices.

BEFORE resetting a high voltage protection device, you must:

- establish the circumstances relating to the trip, i.e. visible flashes, arcing, operator reports
- confirm safety of all personnel in immediate area
- record the protection device trip indication
- establish the high voltage circuit is safe to re-energise.

If the circuit is unable to be reset, then a VUL-FRM-021-08-High Voltage (HV) Access Permit will be required for any investigation and repairs that are required to be undertaken prior to re-energisation as detailed in VUL-MOP-022(1)-04-Re-energise Tripped HV Electrical Circuit

All high voltage trips must be reported to the Electrical Engineering Manager

Restoring power into a fault could cause serious injury, equipment damage or fires.

Step 4: Use of electrical energy to locate faults

Where it is required to use electrical energy to clear an overload condition this shall only be done after the following points have been considered:

- the number of starts per hour in the overloaded condition needs to be limited to the manufacture's recommendations. **Note:** Most manufactures limit the starts per hour to 4
- Adjustment of protection settings shall only be done after confirmation that the upstream protection is suitable to protect the cabling and equipment
- Any changes to protection settings will need to follow VUL-MOP-064-Change Management and shall immediately be returned to their original setting after the overload condition has been cleared

NOTE: No permanent changes shall be made to protection settings without the approval of the Electrical Engineering Manager.

Under no circumstance should overloads be increased beyond 115% of the motor nameplate and 10x starting current

5. ROLES AND RESPONSIBILITIES

SSE	Shall review and approve this procedure.
Electrical Engineering Manager	Shall establish & maintain this standard operating procedure
Superintendents	Shall Implement this standard operating procedure
Supervisors	Shall apply and monitor this standard operating procedure
All CMWs	Shall comply with the requirements of this procedure.



6. REFERENCES

- Coal Mining Safety and Health Act 1999 (Qld)
- Coal Mining Safety and Health Regulation 2017 (Qld)
- Recognised Standard 02: Control of risk management practices
- Qld Electrical Safety Act 2002
- Qld Electrical Safety Regulation 2017
- Qld Electrical Safety Codes of Practice 2020 - Work
- Qld Electrical Safety Codes of Practice 2021 - Managing Electrical Safety Risks in the Workplace
- AS/NZS 4836:2001 Safe working on low voltage electrical installations
- Electrical Safety Regulation 2013
- AS/NZS3007:2013 Electrical equipment in mines and quarries – Surface installations and associated processing plant
- Code of Practice for Electrical Work
- Safe Work Australia - Model Code of practice: Managing electrical risks in the workplace

7. RELATED DOCUMENTS

- VUL-SOP-078-Isolation and Tagging
- VUL-MOP-049-Risk and Hazard Management
- VUL-MOP-022(1)-01 Re-energise Tripped Fixed Plant Electrical Circuit
- VUL-MOP-022(1)-02 Re-energise Tripped LV Electrical Circuit
- VUL-MOP-022(1)-03 Re-energise Tripped Welding Equipment
- VUL-MOP-022(1)-04-Re-energise Tripped HV Electrical Circuit
- VUL-MOP-022(1)-05-Electrical Safety

8. MONITORING AND REVIEW

A review of this Procedure can be triggered by:

- A site or external event directly related to the document contents.
- A legislated change directly related to the document contents.
- A change of method, technology and/or operation change that may affect the accuracy of this document;
- Outcomes from inspections, audits, hazard identification, risk assessment, or other processes where the actions recommended are directly related to the document contents.
- A change required by the site SSE directly related to the document contents.

9. DOCUMENT CONTROL

Version	Date	Description	Document Controller
01	11/11/2024	Development	Kelly Jensen
02	19/01/2025	Review & Formatting	Kelly Jenen