

Fact sheet

Assessment program – Electrical energy metalliferous mines and tier-1 quarries

October 2022

Electrical energy is a hazard which can occur within various mining environments and can potentially cause serious and/or fatal injuries to workers if not controlled effectively. This fact sheet is primarily based on the critical controls for electrical energy risks within the metalliferous and quarry sectors and should be considered by mine operators when assessing the risk at their operation.

As a result, the Resources Regulator is commencing a program of planned inspections and targeted assessments which will be focussing on the below criteria and ensuring compliance across the metalliferous and quarry industries in NSW.



Figure 1

Identify electrical services

- The location of electrical services are labelled, and concealed services are positively identified before penetrating ground or structures.

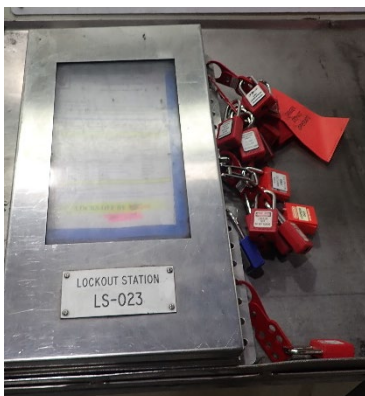


Figure 2

Energy isolation

- Energised electrical conductors are securely de-energised prior to accessing them.

Basic electrical protection

- Prevent unintentional contact with energised electrical parts above extra low voltage.

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Figure 3

Reduced voltage

- Reduce the consequence of contact with electricity by reducing the supply voltage to a level that does not cause harm.

Switchgear design

- Switchgear is adequately rated to prevent personnel being exposed to an uncontrolled release of electrical energy.

Fault protection

- Fault protection detects and disconnects faulty electrical equipment.



Figure 4

Shelter from lightning

- Protect people from being struck by lightning.

Earthing

- To provide a sufficiently secure low impedance path to clear faults such as an insulation failure to earth and to limit touch, step and transfer voltages to a level that is not dangerous.

Considerations

Mines should consider the above criteria as a minimum and ensure that such information is included within their respective principal hazard management plans and associated documentation. Following investigations into electrical energy related incidents, it is evident that non-compliance to these key control measures have contributed to incident outcomes, which has caused both severe and fatal injuries to workers. When identifying and implementing control measures, mines are also reminded to follow the hierarchy of controls to ensure health and safety risks are minimised so far as is reasonably practicable.

Other relevant safety alerts and bulletins published by the NSW Resources Regulator:

Date published	Reference	Title
8 August 2022	SB22-11	<u>Photovoltaic and battery energy supply systems and their connection to a mine electricity system</u>
25 May 2020	SB20-03	<u>Electric shocks in the mining industry</u>
15 August 2018	SB18-13	<u>Alternators and IS equipment</u>
11 May 2017	SB17-04	<u>Uninterruptible power supply installations at mines</u>
20 April 2015	SA15-03	<u>Electrician injured after making contact with live high voltage conductor</u>

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