



Mines Safety Bulletin No. 165

Subject: Safe access to high voltage powerline corridors

Date: 10 June 2019

Background

The Department is concerned that there is a high degree of non-compliance with the procedures for access to overhead powerlines and powerline corridors on mine sites. There were 26 reported occurrences of contact with overhead powerlines from 2009 to 2018 and, in 2018, the Department received notification of seven incidents involving breaches of powerline corridor procedures. Two of these incidents involved contact with live overhead lines by mobile equipment.

The Department's electrical safety audits from 2014 to 2018 identified that, of the mine sites audited:

- 45% do not have an emergency response procedure for inadvertent contact with an overhead powerline
- 31% had not instructed and assessed relevant personnel in regard to accessing and working in proximity to overhead powerlines, including driving under them
- 25% did not have a competent person appointed to issue powerline corridor access permits
- in 29%, the registered manager had not provided a written summary of responsibilities and duties to the appointed person.

Summary of hazard

Inadvertent contact with live overhead powerlines has the potential to cause death or serious injury. To prevent harm to employees, systems of work relating to the control of vehicles and mobile equipment in the vicinity of overhead powerlines must be strictly adhered to. In particular, any overhead powerline should be considered energised unless there is clear indication that it has been de-energised, isolated and it is visibly grounded.

Possible consequences of powerline contact, or near contact, include:

- electrocution or electric shock to operators and bystanders (including step potential)
- damage to mobile plant and infrastructure
- pyrolysis causing tyre fires and tyre explosions
- electrical flash or arcing.

Contributory factors

- Inadequate controls and signage for access and proximity to powerline corridors.

- Lack of instruction and assessment of employees in regard to powerline access procedures.
- Lack of training of all employees regarding the requirements for access, or being in close proximity, to overhead powerlines.
- Insufficient appointment of competent persons to issue powerline corridor access permits.
- Lack of emergency management procedures for contact with an overhead powerline.

Actions required

The Department recommends referring to section 7 of AS/NZS 3007:2013 *Electrical equipment in mines and quarries – surface installations and associated processing plant* for detail on overhead lines. The Department also recommends the following actions are taken.

- All mine sites conduct an audit on powerline corridor access permit procedures using the Department's Electrical safety audit guide and promptly address any identified non-compliance.
- For vehicle crossings underneath overhead powerlines, check that signage is visible and accurate, and height indicators are in place.
- For vehicle crossings near overhead powerlines, consider installing cables underground to eliminate the hazard associated with overhead powerlines. This is particularly relevant near mine pit and dump areas where crane booms and truck trays are lifted.



Examples of clearance indicators and signage for high voltage overhead powerlines

Further information

- Department of Mines, Industry Regulation and Safety, Electrical Safety Audit – guide
www.dmp.wa.gov.au/Documents/Safety/MSH_AuditGuide_ElectricalSafety.pdf

This Mines Safety Bulletin was approved for release by the State Mining Engineer on 10 June 2019