



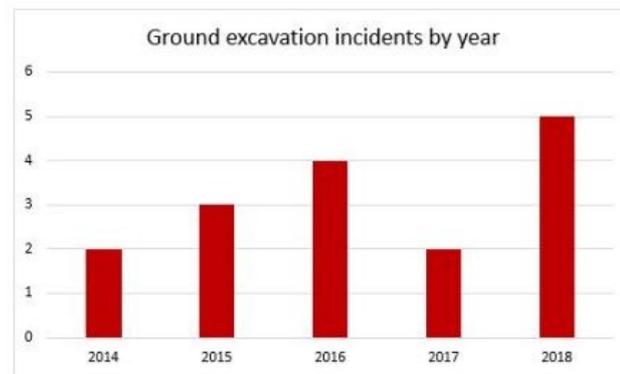
Mines Safety Bulletin No. 166

Subject: Buried electrical cables and ground excavation permit procedures

Date: 28 August 2019

Background

The Department is concerned that there is a growing trend of non-compliance with ground excavation systems of work on mine sites. In 2018, the Department received notification of five incidents involving breaches of excavation procedures on mines in the vicinity of buried electrical cables. In these incidents, the mobile equipment operators were unaware they were working in the vicinity of buried cables.



Before ground excavations commence, all buried services in the area must be identified. A ground excavation permit that identifies the location of buried services and any required controls may then be issued. Only a competent person authorised in writing by the manager of the mine may issue a ground excavation permit. Investigations into two of the 2018 incidents identified that persons issuing permits were not authorised to do so.

A review of the Department's electrical safety audit findings between 2014-2018 revealed that:

- on 40% of the audited mines, the Registered Manager (RM) had not provided the authorised competent person with a written summary of responsibilities and duties for issuing ground excavation permits
- 27% of audited mines did not have a competent person authorised to issue ground excavation permits
- 27% of audited mines had not instructed and assessed relevant personnel in regard to the excavation permit procedure
- 25% of audited mines did not consult plans and identify locations of buried cables
- 24% of audited mines did not detail safeguards to be adhered to on the permit.

Summary of hazard

Contact with buried electrical cables can result in death or serious injury to workers and damage to services and machinery. A buried cable must be considered energised unless there is clear evidence that it has been de-energised and isolated.

Contributory factors

- An established excavation permit system of work was either not in place or not adhered to.
- Persons responsible for issuing permits had not been authorised and instructed by the RM.
- Plans had not been consulted to identify and isolate buried cables.
- Ground scanning was not undertaken for all cables prior to excavation commencing.

Actions required

The Department recommends the following:

- undertake an audit of ground excavation permit procedure using the Department's *Electrical safety audit guide* and promptly address any identified non-compliance
- ensure that surface cable route indicators are installed along cable routes (regulation 5.31 Mines Safety and Inspection Regulations 1995)
- competent person to review plans and drawings to identify buried cables and supervise work
- ensure ground scanning for all cables and services is in the excavation permit system of work
- check that visible and accurate signage is in place for known underground cable paths.



Further information

Electrical safety audit - guide

www.dmp.wa.gov.au/Documents/Safety/MSH_AuditGuide_ElectricalSafety.pdf

Mines Safety Bulletin No. 87 Excavating near cables buried underground

www.dmp.wa.gov.au/Documents/Safety/MSH_SB_087.pdf

Significant Incident Report No. 25 Buried Electric Cable - Fatal Accident

www.dmp.wa.gov.au/Documents/Safety/MSH_SIR_025.pdf

This Mines Safety Bulletin was approved for release by the State Mining Engineer on 28 August 2019