



# Electrical Engineering Safety

## Decision Sheet 5.3

### Electricity Distributor Overhead Lines at Mines

***A basis for consistent application of Electrical Engineering Safety***

*Decision Sheets are developed by the Inspectors of Electrical Engineering in response to issues raised or questions asked by others in the DPI, in particular Mine Safety Operations and from our external clients. They are for use by any staff in Mine Safety Operations, but primarily by Electrical Engineering staff. They can be distributed externally to the DPI.*

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## Preamble

Many operations (coal, metals and extractives) have overhead lines (OHL's) that are owned by electricity distributors traversing the operation. These OHL's do not supply

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**NO LIVE LINE WORK  
TEST BEFORE YOU TOUCH**



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the operation and supply the local community or are part of the state transmission system. The OHL's operate at voltages from 415 V to 500 kV. The electricity distributor is responsible for this type of asset. The mining legislation requires compliance with AS/NZS3000 and AS3007.

## **Issue**

Should the electricity distributor assets that traverse and do not supply the mining operation, comply with the mining legislation that is comply with AS/NZS3000 and AS3007?

How should operations manage the risks from these types of OHL's?

## **Position**

The legislation relates to mining electrical infrastructure that is used to supply that particular operation. OHL's that do not supply the operation should comply with the requirements of the Electricity Supply Act.

It is the mine's responsibility to make arrangements to manage the risks from ALL OHL's. Points to consider are:

- Risk assessment involving the overhead line owner.
- Design consideration should place all electrical OHL's away from all mining activities for the life-cycle of mining operation;
- Increased minimum conductor heights to take into account mining equipment, drills, trucks, excavators. 10 to 12 m high is good;
- Barriers to prevent access into restricted areas.
- Signage and controls eg. goal posts, marker posts to prevent accidental contact with OHL's,
- ALL overhead powerlines to be identified on a mine plan.
- The owner of the overhead line is to be identified on the plan



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- The plan is to be readily available for risk assessment purposes and job planning purposes.
- Precautions where 33/66/132 kv transmission lines cross above site 11kv/415v power lines eg. use of insulated conductors on the 11kV/415V power lines.
- Plan to install power lines alongside boundaries of the mining area and/or use underground cables where risk of contact is present.
- Emergency contact and response plan agreed to by the overhead line owner and the operation.
- Protocol between the operation and overhead line owner with regard to restoration of power onto the overhead line after a fault trip. Unless a line is protected against reclosure, any line that traverses a working area should be relocated in case it falls into the operating area of the mine.
- The owner of the OHL's to provide the operation with details and requirements for inspection and maintenance programs. (Need to consider Pole inspections including sub-surface termite and rot tests. Adequacy of stabiliser and guy wires, cross arms and identification of physical damage to poles)
- Protocol between the mine operation and overhead line owner with regard to providing safe vehicular access to any overhead line where the access involves passing through an operating area of the mine.
- Any movement of road vehicles on the mine haul roads must be controlled by the mine operator.
- Supervision/containment of OHL workers to ensure that individuals do not wander into the operational area.
- Notification by the OHL owner to the Mine Operator before entry and upon exiting may be crucial at mines where blasting takes place.
- Restrictions on use of land below OHLs. Easement corridors may be provided under the OHL's.

