

SAFETY ALERT



DRILL RIG STRIKES OVERHEAD POWER LINES

INCIDENT

A number of incidents involving contact with energised overhead power lines have occurred on mine properties within the past year. In a recent incident, a drill rig was inadvertently driven into an overhead power line. No one was injured. However, any contact of machinery with an energised overhead power line has the potential to cause death.

CIRCUMSTANCES

A contractor's tracked drilling rig with a 10 metre high mast was used to drill a series of blast holes at a quarry. Upon completion, the operator moved the drill to an adjacent flat location to service the machine, ready for transporting it to another mine. The mast was not lowered. During the move the mast contacted 11,000 volt overhead power lines, approximately 9 metres above ground level. The operator saw a flash and then jumped from the cabin to the ground. Had he made contact with the ground and the drill rig, he may have been killed or seriously injured as the lines remained in contact with the drill mast.

INVESTIGATION

An investigation has been conducted by the mine owner, Department of Mineral Resources officers and the Electricity Supply Authority.

1. Multiple spark marks were evident on the drill mast where it contacted the power lines.
2. The power line had three phase conductors, one broke and fell to the ground and the other two remained in contact with the near-vertical drill mast.
3. The power supply tripped off and was automatically reclosed after six seconds. The power then tripped off again.
4. The drill rig would have had clearance if the mast had been folded to its horizontal position after drilling, and before being relocated.
5. There were no signs or barriers to warn of the presence of overhead power lines.
6. The mine did not have a specific risk management strategy for overhead power lines, but mine employees had power line awareness training within the past six months.
7. The drilling contractor did not have a risk management strategy for overhead power lines.
8. The contractor's drill rig operator had no power line awareness training.

RECOMMENDATIONS

1. The location, height and voltage of all power lines should be identified.
2. The maximum height for any equipment that may be transported below or work near overhead power lines should be established. Refer Minerals Industry Safety Handbook – overhead lines.

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3. A risk assessment should be conducted to develop a risk management strategy for all activities near overhead power lines, irrespective of the frequency. Risk assessments should consider controls to prevent equipment entering the safety clearance area nominated in AS 3007. For example:
 - a) Eliminating exposure of power lines by relocation, fencing or by installing cables underground.
 - b) Wherever power lines cross a road or other temporary access corridor install the following:
 - Signs on each side of the power lines on both sides of the road identifying the voltage of the power line and the clearance. Signs should be positioned at a distance from the power lines appropriate to the speed and size of approaching vehicles.
 - An elevated, clearly visible boom (goal posts) should be positioned where each pair of signs is located. The height of the boom should be set at the safe clearance below the power lines.
4. A hazard management procedure for working near power lines should be established; this should include:
 - All persons to identify risks and inspect work sites before any work starts eg. movement of machinery or equipment, commencement of a new job or new procedure.
 - Use of a simple check sheet for cranes, excavators and masted machinery operators to assist them in identifying the existence of power lines.
5. Emergency procedures should include contact details of the electricity supply control officer.
6. Hazard management and emergency procedures should be regularly reviewed.

A handwritten signature in black ink, appearing to read 'R Regan'.

R Regan
ASSISTANT DIRECTOR SAFETY OPERATIONS