

## Know the dangers

Employees and contractors in the building and construction industry may run the risk of receiving an electric shock and causing substantial damage to plant and equipment when operating plant near overhead powerlines or underground cables when excavating.

This fact sheet has been developed to help you understand why you may be at risk and what you can do to work safely.

## What should I do before starting work?

- Complete an onsite risk assessment to identify and implement appropriate control measures to prevent any hazards or hazardous work practices and procedures which may have the potential to harm the health or safety of a person or damage equipment.
- Know the location of underground cables and overhead powerlines and their proximity to your work activities and worksite transit routes before commencing digging or any other activities.
- Install appropriate signage around powerlines and worksites.
- Complete a Dial Before You Dig application by dialing **1100** or visit **1100.com.au** when planning excavation work.
- Visually inspect points of attachment, at both ends, before commencing work as gutters and metal roofs may become “live” due to deteriorating insulation on electrical wiring.
- All electrical portable power tools must be tested and tagged as well as protected by an earth leakage device (RCD).
- Determine electricity asset safety clearances and whether an isolation needs to occur.

- Understand and maintain a safe working distance from overhead powerlines.
- Before commencing work, install eye level visual markers in any area where overhead power lines are identified.
- Carefully monitor weather conditions – overhead powerlines can sway in the wind, sag as temperatures increase and are difficult to see at dawn and dusk.
- Ensure operators are aware of the height and reach of their machinery in their travel, stowed and working positions to ensure that minimum approach distances to powerlines are maintained. For more information refer to *Work Near Overhead Power Lines Code of Practice 2006*, WorkCover NSW.
- Engage an observer to monitor machines working near overhead powerlines.
- Ask the occupant if they have experienced any minor electrical shocks from plumbing or appliances.

## Before you dig

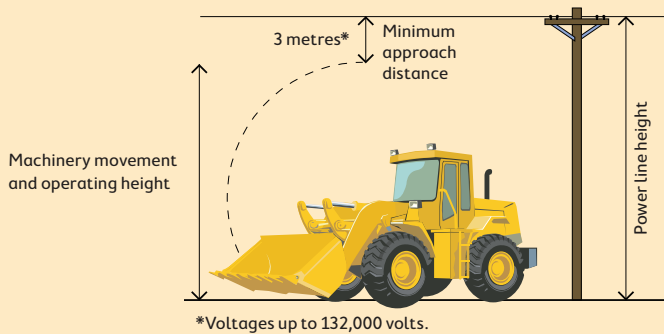
- Confirm that the DBYD plans are within date for each location where you intend to dig.
- Read and comply with Ausgrid Network Standard NS156 *Working Near or Around Underground Cables* which you will receive with your DBYD plans.
- Use cable location services and technologies such as Global Positioning Systems (GPS) and Ground Penetrating Radar (GPR) to accurately identify the location of underground utilities.
- Manually Pothole to physically locate the asset indicators within the excavation zone before using any mechanical excavators.
- For more information on approach distances for underground assets refer to *Work Near Underground Assets Guide 2007*, WorkCover NSW.

## Safe work habits

Look up and locate overhead powerlines and maintain at least the minimum approach distance from them and do not commence excavation without DBYD plans.

Workers and their equipment should not approach overhead power lines any closer than the following, when machinery is being operated:

<b>Powerlines with voltages up to 132,000 volts</b>	e.g. low voltage distribution and subtransmission lines, usually on poles	3 metre
<b>Between 132,000 and 330,000 volts</b>	e.g. subtransmission and transmission lines, usually on either poles or towers	6 metres
<b>More than 330,000 volts</b>	e.g. transmission lines usually on towers	8 metres



- Remember that WorkCover requires a minimum approach distance of at least three metres from overhead powerlines (up to 132,000 volts).
- Exercise extreme caution when working near the point of attachment of the electrical service line to the house/building.
- Look for cables and the signs of underground assets whenever digging, such as changes in grass, depressions or mounds, change of soil conditions and pipe work.
- Look out for signs of electric arcing. If identified, do not commence work and contact Ausgrid immediately on **13 13 88**.
- To eliminate the possibility of making contact with power lines on a job site, plan and communicate safe traffic paths by providing diagrams of plant and vehicle travel paths away from overhead powerlines.

- Assign an observer to each operator of high machinery and excavators to guide movements near overhead powerlines and underground cables and ensure that minimum approach distances are maintained.
- Before every relocation, lower all machinery into the transport position.
- Use proximity sensor technologies on plant while you dig.

## Permit to work systems

Using a permit to work (PTW) system can be an effective way to be sure preventative measures have been taken before any mechanical digging commences. It acts as a checklist that can only enable mechanical digging work to commence (usually with supervisor sign off) once all preventative actions have been taken first.

A typical permit to work checklist should ask/specify the following:

1. Has Dial Before You Dig been undertaken?
2. Have cable location services/technologies been used and their results compared with the DBYD plans?
3. Have the plans been marked up to reflect any new information/changes?
4. Has the safest plant suitable for the job been selected and ordered?
5. Has an observer been allocated to this job to observe hand, mechanical or powered digging?
6. Is potholing included in the safe work procedure?
7. Has the job been assessed to use non-destructive digging?
8. Have overhead power lines been identified as a risk? If so, has this risk been managed as low as reasonably practicable?
9. Have all persons who may face/are affected by the risk of hitting underground utilities been consulted/made aware of the safe work procedures?

## For more information

Contact Ausgrid at [electricalsafety@ausgrid.com.au](mailto:electricalsafety@ausgrid.com.au) to discuss electrical safety or organise an Electrical Awareness Session for your worksite or visit us at [www.ausgrid.com.au/dontworkblind](http://www.ausgrid.com.au/dontworkblind)