Working in close proximity to powerlines, above or below the ground, has its hazards. Every year, workers die or suffer serious injuries, mostly because safe work practices around electricity have not been applied. Not only could contact with powerlines cause injury or death but costs to repair the damage could be expensive.

If you are contemplating working or operating plant near overhead or underground powerlines, you should obtain a copy of the ‘Electricity Entities requirements: Working Near Overhead and Underground Electric Lines’ document which is available at ergon.com.au/lookupandlive or energex.com.au/lookupandlive

All machinery operators and other workers working near powerlines should be aware of their safety duties under the Electrical Safety Act 2002 and The Electrical Safety Regulation 2013 and adopt safe work practices in accordance with the Code of Practice ‘Working Near Overhead and Underground Electric lines’.

Always take care when operating around overhead powerlines.

Working in close proximity to powerlines, above or below the ground, has its hazards. Every year, workers die or suffer serious injuries, mostly because safe work practices around electricity have not been applied. Not only could contact with powerlines cause injury or death but costs to repair the damage could be expensive.

Call for safety advice
What to do if contact with powerlines occurs

1. The machinery, or vehicle, will become ‘live’ at the same voltage as the powerlines contacted and electricity will attempt to pass through the vehicle to the ground.
2. Anything in contact with the powerlines will also become ‘live’, such as fences and trees.
3. A potentially dangerous electrical field will be created around anything in contact with the powerlines. This field extends for approximately 10 metres around these items.

What should you do if contact occurs

1. Try to keep clear, remain calm and stay in the vehicle until the power has been isolated and the powerlines removed. Don’t risk being electrocuted by attempting to leave the vehicle before power is disconnected.
2. Advise anyone near the incident site to stay a minimum of 10 metres from the vehicle and anything in contact with the powerlines.
3. Treat all powerlines as if they are ‘live’.
4. Call 000 immediately to report powerlines down and a life threatening situation.

We recommend that operators of machinery practise this jump / shuffle technique on a regular basis.

What if the person in the vehicle needs to be evacuated

An emergency evacuation is extremely dangerous and should only be attempted as a last resort, such as if the vehicle is on fire. Remember to assess the approach and position the vehicle in such a way that machinery or equipment is operating in the Safety Observer Area.

Safety Observer

A Safety Observer or spotter is a person who

a. observes the operating plant; and
b. advises the plant operator if it is likely that the operating plant will enter a Safety Observer Area of 10 metres be delineated either side of overhead powerlines.

Safety Observer undergoes specific training and must be competent to perform the role in observing, warning and communicating effectively with plant operators. Contact us for information on how to become a qualified Safety Observer.

Safety Observer Zone

A Safety Observer Zone is the area where machinery or equipment is operating within the exclusion zone. A trained safety observer MUST be used if the equipment can reach the exclusion zone. To ensure the equipment does not come within an unsafe distance, we recommend that a Safety Observer Area of 10 metres be delineated either side of overhead powerlines. A trained safety observer SHOULD be used when machinery or equipment is operating in the Safety Observer Area.

Exclusion Zone

An Exclusion Zone is a safety envelope around an overhead powerline. Exclusion zone measurements depend on the voltage of the powerline, type of work being performed and qualifications of people involved.

Safety Observer

1. Safety Observer will observe 10 metres around powerlines as follows:
   - 3 metres for voltages up to 120kV
   - 6 metres for voltages up to 330kV

If the work that you and your staff are planning has the potential to encroach into powerline exclusion zones or if you are unsure, contact us for safety advice before starting the job.

These exclusion zones can be reduced if the worker has been trained and approved as an Authorised Person. Contact us for information on how to become an Authorised Person.

Exclusions zones keep people, operating plant and vehicles a safe distance from overhead powerlines. These exclusion zones can be reduced if the worker has been trained and approved as an Authorised Person.


All machinery operators and other persons working near powerlines should be aware of their safety duties under the Electrical Safety Act 2002 and The Electrical Safety Regulation 2013 adopting safe work practices in accordance with the Code of Practice ‘Working Near Overhead and Underground Electric lines’. If you are contemplating working near overhead or underground powerlines, you should obtain a copy of the ‘Electricity Entities Working Near Overhead and Underground Electric lines’ document which is available at energex.com.au/lookupandlive or ergon.com.au/lookupandlive.

Tyres can explode

When a vehicle contacts an overhead powerline a massive electrical current flows through the vehicle and its tyres to earth. This can cause the tyres to explode on contact or to start burning on the inside.

Tyres burning on the inside creates a potential hazard where the build up of gases and heat can cause the tyre to explode at a later time, even 24 hours after the incident. Flying debris from the tyres exploding could potentially cause mechanical damage.

Tyres can explode on contact or to start burning on the inside.

Ensure that the vehicle is isolated with a 300m exclusion zone for a minimum of 24 hours. After this, have the vehicle thoroughly inspected for type and mechanical damage.

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Call for Safety advice

13 74 66
1316 70
13 12 53
13 19 62

1800 635 369
1800 353 031
Working in close proximity to powerlines, above or below the ground, has its hazards. Unfortunately each year, the workers in the building and construction industries come in contact with electricity assets. This includes contact with poles, wires and pillar boxes by vehicles, the loads they are carrying or their associated plant. Contact can occur when moving machinery and plant from one location to another, operating cranes and machinery or when working on roofs.

Practice safe work habits

• Be aware of Electrical Safety Legislation relating to working around electricity. Obtain a copy of the “Code of Practice for Working Near Exposed Live Parts” and the “Electricity Entity Requirements: Working Near Overhead and Underground Electric Lines”. Ensure all workers are familiar with the relevant sections for work being undertaken.

• Ensure workers have been suitably trained and are competent to perform the work being carried out.

• Complete a risk assessment for each structure and piece of machinery to be used and review at the start of each day or if conditions change.

• Ensure all new members of the workgroup, as well as any visitors to the site, are inducted to the Risk Assessment for any potential electrical hazards.

• Consider including a specific check on any risk assessment forms, work instructions or quotation pads to draw workers’ attention to electrical safety.

• Know the location of overhead powerlines and underground cables on the property.

• Ensure safe distances are maintained from all powerlines.

• Assign a Safety Observer to each work team to guide machinery movements or when handling material near overhead powerlines to ensure required clearances are maintained.

• Ensure operators of machinery or delivery vehicles are aware of the height of their vehicle or load and they have been advised of powerline locations.

• Be aware of reduced powerline clearances resulting from damage, often indicated by uneven conductors, excessive sag or slack stays.

• Stay well clear of damaged powerlines and report any damage immediately on Triple Zero (000).

• Provide ground barriers to warn workers of the presence of overhead powerlines and underground cables.

• Arrange for isolation of electricity supply or the application of visual indicators, such as Tigertails or powerline markers, onto the service and nearby powerlines by the Electrical Entity. (Tigertails provide visual indication of overhead powerlines but DO NOT provide protection against electrical hazards.)

• Be aware activities such as making repairs to roofing or guttering, painting, water blasting and scaffolding can be dangerous if carried out to close to overhead service lines and powerlines.

• Take extra care when handling roofing materials, especially when windy or at heights.

• Ensure any long objects such as ladders and trestle planks are carried horizontally.

• Be aware that under no circumstances must anything be attached to or built around powerlines, poles, pillar boxes or other Electrical Entity equipment.

• Remember that access is essential to keep powerlines and equipment safe and reliable. If you need to build close to overhead lines on a private property they may need to be placed underground or moved.

In construction, demolition or removal work

• Contact us for advice at the planning stage of any construction or demolition activity. If any electricity services need to be upgraded, relocated, disconnected or de-energised, a formal request needs to be submitted well in advance of the work commencing.

• Do not start any work near any Electrical Entity equipment and do not demolish any structure where any Electrical Entity equipment is located, until it has been positively confirmed that this equipment has been made safe.
Under normal conditions, electricity that enters an electrical installation to power electrical equipment will return to the local substation transformer via the neutral conductor. However, under certain fault conditions, metal water pipes may provide the return electrical path instead of the neutral conductor. Plumbers working on metal water pipes under these conditions are at risk of serious, even fatal, electric shock.

Working on metal water services

Before installing water meters or repairing or replacing metal water services, plumbers and their assistants should plan and use a safe system of work to prevent or minimise the risk of electric shock.

The safe system of work you use should suit the particular situation and should include the following procedures (refer to AS/NZS 3500.1 Plumbing and drainage Part 1: Water services).

Plan
• Plan the job by assessing electrical and other risks and taking suitable steps to stay safe.

Do
• Where possible, switch off the electrical main switch, or switches, at the premises and attach a tag reading ‘DANGER DO NOT SWITCH ON’.
• Take additional steps to reduce electrical risk. Your work methods should avoid skin contact with metallic water pipes being worked on e.g. gloves and long trousers.
• Thoroughly clean a section of metal pipe on each side of the length being repaired.
• Attach an insulated bridging conductor—stranded copper cable capable of carrying 70 amperes that has appropriate end clamps with insulated handgrips—to span the length of pipe to be cut.

Check
• Check to ensure the clamps make good electrical contact with the metal pipe.
• Check to ensure the bridging conductor remains undisturbed until the work is finished.
• Where any existing metallic service pipe is to be replaced by non-metallic pipe or fittings, have the electrical installation checked by a licensed electrical contractor and modified if necessary to ensure the electrical earthing system for the premises remains effective.

Act
• Notify the local electricity distributor and the householder immediately if you see anything abnormal such as electric sparks or you feel an electric shock.
1. **Stay in the vehicle.** Call 000 immediately.

2. **If there's an immediate danger, like fire, and evacuation is absolutely necessary,** access your escape route and check for fallen powerlines.

3. **Exit the vehicle by jumping—make sure to land with both feet together.**

4. **When jumping, don't touch the vehicle and the ground at the same time.**

5. **Once you've landed with both feet together (be careful not to stumble or fall), jump or shuffle with your feet together away from the vehicle.**

6. **Move in this way until you are at least 10 metres away from the vehicle.** **DO NOT go back.**

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**What to do if your vehicle brings down powerlines**

- **ERGON ENERGY**
  - 13 16 70
- **Powerlink**
  - 1800 353 031
- **energex**
  - 13 19 62
Know your machine

This machinery's stowed height is ___ m

This machinery's extended reach is ___ m

Call for safety advice

Untrained Person Exclusion Zones

3m Up to 132kV

6m Up to and including 330kV

Permit required if transit height exceeds 4.6m

outside view looking through glass

inside view from inside vehicle