WHERE TO DRAW THE LINE ON SAFETY CLEARANCES FROM ELECTRICITY ASSETS

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Endeavour Energy

POWER together

Where to draw the line on safety clearances from electricity assets

Are you in the clear?

Important information on safe distances

This brochure is designed to inform anyone working on or around building or sites that are connected to or in the vicinity of electricity assets of safe distances that must be maintained from electricity assets, overhead or underground.

Awareness of safety clearances could mean the difference between a safe, successful project and a fatal accident.

It may also save time and money by ensuring the design of a home or building complies with safety requirements without additional measures being taken.

Drawings in this brochure specify the minimum safety clearances for working or living near electrical assets.

Note: Full details about safe work practices, including penalties for non-compliance, are set out in the Safe Work Australia document *Working in the vicinity of overhead and underground electric lines guidance material*. The document can be viewed at the following link:

https://www.safeworkaustralia.gov.au/collection/working-vicinity-overhead-and-underground-electric-lines-guidance-material

The requirements for maintaining safe distances from electricity assets are also set out in the **State Environmental Planning Policy** (Part 3, Division 5 – Electricity transmission or distribution, Subdivision 2 – *Development likely to affect an electricity transmission or distribution network).*

This requires local councils to seek comments from Endeavour Energy before approving any development application where electricity infrastructure is present.

Ensuring you are in the clear

All buildings and other structures must comply with minimum safety clearances from overhead electricity conductors.

The minimum distances from the closest conductor to the building or other structures must be maintained during strong winds or high operating temperatures. Under these conditions, the conductor can swing or sag considerably towards the building or structure.

The minimum safety clearances are shown in the table and illustrations in this brochure. They have been prepared to suit Endeavour Energy's asset construction practices.

Types of assets

The following pictures show typical electricity assets that may be in residential areas.

High and low voltage overhead mains

Underground Service Pillar

Padmount substation

Pole mounted substation

Important Considerations for Minimum Safety Clearances

- Knock-down/rebuilds, where a small, single storey home is replaced by a larger or double storey home, or where land is rezoned to allow multi-storey construction, such as apartments or town houses.
- Moving the location of a driveway or building driveways close to pillars or poles.
- Installing a tall antenna in areas where broadcast reception is poor.
- Erecting a flagpole.
- Any building work near underground or overhead power lines.
- Erecting a cubby house.
- Raising the ground level below power lines.
- Erecting metal fences or scaffolding close to poles or lines.
- Excavating near poles or where electricity assets run underground.
- Using a crane near overhead lines.

Swimming pools are generally unsuitable for installation near electricity assets and are rarely allowed. Above-ground pools in particular are regarded as inherently unsafe.

Working with safety near the point of attachment

The point of attachment (POA) is where the electrical wires attach to a home or building.

When work is being carried out near the point of attachment, special care must be taken to avoid contact with these electrical wires, and the mounting bracket, or to avoid damaging them.

The safe distance from a point of attachment is 1000mm.

Care must be taken with activities such as:

- Cleaning leaves from guttering.
- Painting gutters, facades and eaves.
- Pruning trees and shrubs (particularly around the electrical wires).
- Attaching aluminium cladding to the facades and the eaves.
- Replacing the guttering.

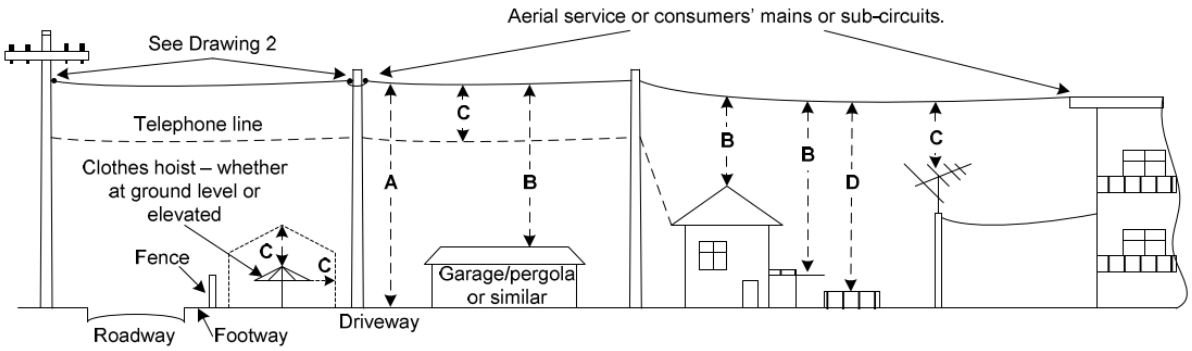
Keeping your distance

The minimum safety clearances over structures, roads and driveways are shown in the following drawings.

Remember – these are the **minimum** safety distances. The minimum safety distance is 3 metres, in some cases, the distance may increase to ensure public safety.

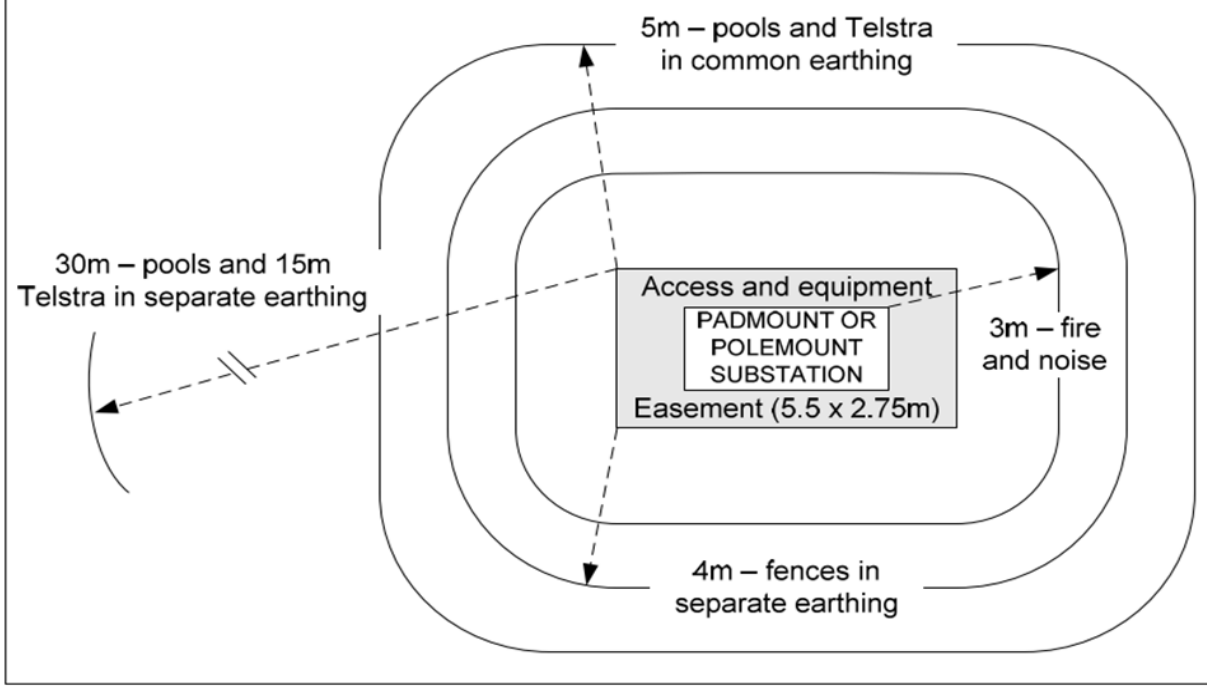
Drawing 1: Minimum safety clearances over structures

Aerial consumers' and service mains



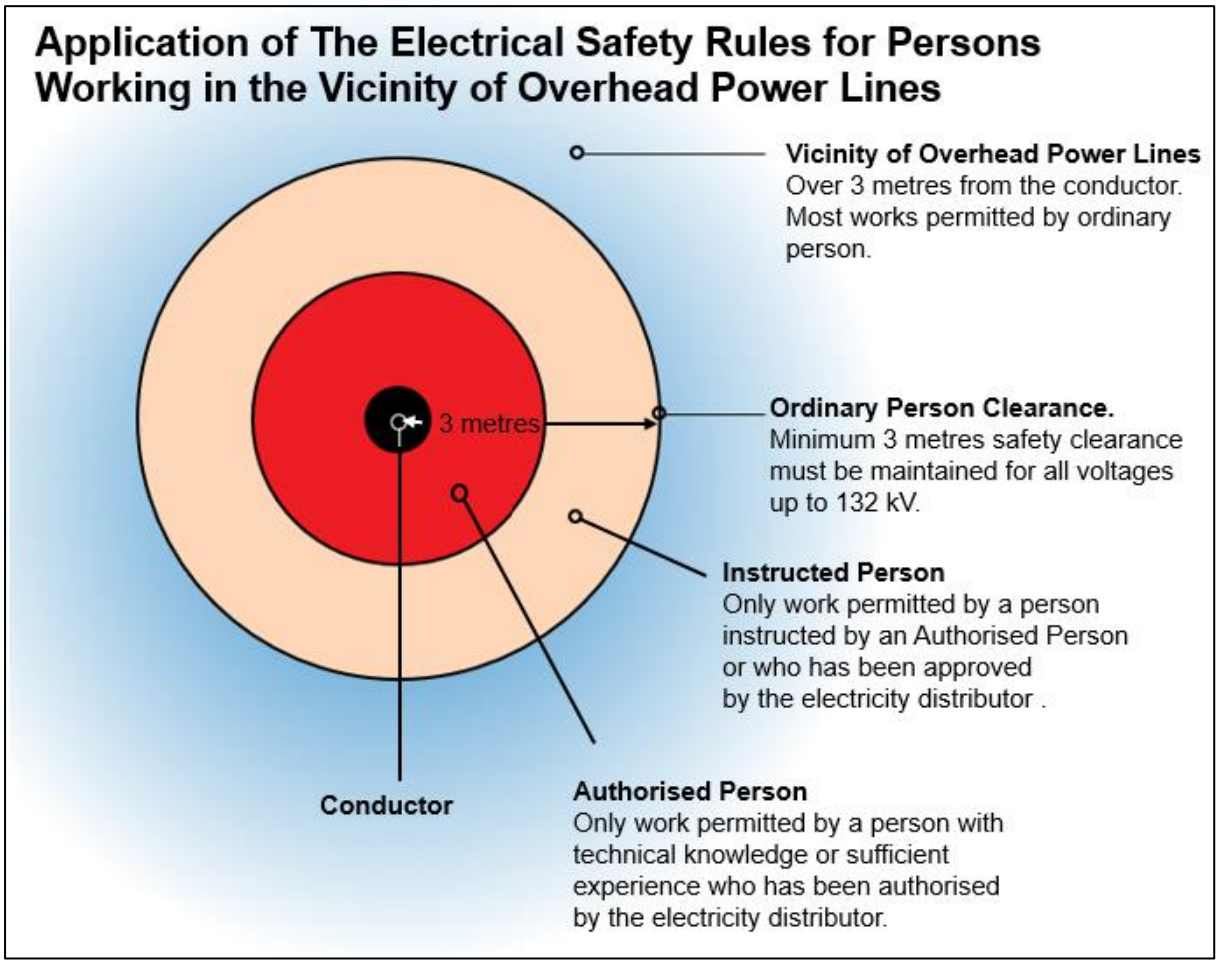
Application / Type of aerial conductor	Minimum height above buildings, structures, ground or elevated areas (mm)		From, **buildings, TV/ radio** antenna or stay wire and **telephone lines** (mm).	Above water level in swimming pool, above walkway around pool	Above areas where irrigation pipes are used, or above areas where sail craft are used
	Over ground	Over roofs			
	A	B	C	D	
Bare or insulated live conductors	Bare 5500 Insulated 4500	3700	2000 3000 for clothes lines	Not permitted	Refer to Integral Energy

Drawing 3: Substations - segregation requirements from other structures



Overhead Power Lines

In addition to the safety clearances required for buildings or structures, Endeavour Energy's Electrical Safety Rules (ESR) specifies the types of persons able to undertake work in the vicinity of overhead power lines which is summarised in the following Figure and apply to all overhead power lines except for low voltage overhead service conductors.



Additional information can be found in the SafeWork – Work Near Overhead Power Lines Code of Practice.

https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/52832/Work-near-overhead-power-lines-code-of-practice.pdf

Low Voltage Overhead Service Conductors

Low voltage overhead services conductors (sometimes referred to as service mains) are the overhead cable/s (there may be more than one) from an Endeavour Energy electricity distribution pole to a customer connection point (also referred to as point of attachment) on a building, structure or pole.

Low voltage service conductors and customer connection points must comply with the 'Service and Installation Rules for New South Wales'.

The Service and Installation Rules (Rules) for New South Wales cover the requirements for the connection of electrical installations to the distribution network. The Rules are used by electricians and Accredited Service Providers.

https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/service-and-installation-rules

Overhead Distribution Cables

Overhead distribution cables (sometimes referred to as distribution mains) are the overhead cables that generally run from an Endeavour Energy pole to another Endeavour Energy pole, or Endeavour Energy electricity asset such as a substation. These can be rated at 230 volts up to and including 132,000 volts (132kV)

All buildings and other structures must comply with minimum safety clearances from overhead electricity conductors.

The minimum distances from the closest conductor to the building or other structures must be maintained during strong winds or high operating temperatures. Under these conditions, the conductor can swing or sag considerably towards the building or structure.

The minimum safety clearances are shown in the table and illustrations in this brochure. They have been prepared to suit Endeavour Energy's asset construction practices.

Important Considerations for Minimum Safety Clearances

- Knock-down/rebuilds, where a small, single storey home is replaced by a larger or double storey home, or where land is rezoned to allow multi-storey construction, such as apartments or town houses.
- Moving the location of a driveway or building driveways close to pillars or poles.
- Installing a tall antenna in areas where broadcast reception is poor.
- Erecting a flagpole.
- Any building work near underground or overhead power lines.
- Erecting a cubby house.
- Raising the ground level below power lines.
- Erecting metal fences or scaffolding close to poles or lines.
- Excavating near poles or where electricity assets run underground.
- Using a crane near overhead lines.

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Look up and Live

Before undertaking work on a site with overhead power lines, the location of powerlines can be checked with the free Look up and Live app which is available via the following link: www.lookupandlive.com.au

The Look up and Live map is an interactive geospatial map that has been developed to display the electricity networks of various distributors including Endeavour Energy.

It is a simple worksite planning tool which provides information on powerline safety and allows specific information to be obtained from Endeavour Energy concerning how to minimize the risk of contact while working in proximity to the electricity network.

When onsite, there are several ways to identify the location of electricity infrastructure to keep your workers and contractors safe. Here are the key ones:
Pre-plan your job by consulting with Endeavour Energy. We provide advice to the building industry, councils or any other organisation or individuals working near our overhead network.

Place an enquiry by completing a Request for Safety Advice and emailing it to construction.works@endeavourenergy.com.au

Develop site plans identifying the location of electrical infrastructure and effectively communicate these plans to staff. Keep the plans available.

Designate and mark out travel paths around the site away from overhead powerlines. These can be used for moving ladders or long objects, and operating tip trucks, elevated platforms, drilling or excavating machinery, backhoes etc.

Use visual indicators such as tiger tails, signage, spray paint or bunting to highlight the presence of overhead powerlines, underground cables, and electrical infrastructure.

Remember that tiger tails and covers are not insulators, and their presence does not mean you can work closer to powerlines. They simply provide a visual indicator to alert you to the presence of powerlines and they do not make powerlines safe to touch under any circumstances.

Use range-limiting devices on excavators and cranes to assist in maintaining clearances from powerlines.

Avoid contact with the point of attachment (where the power comes into a building). If you cannot maintain the required clearances, arrange for a power outage by calling Endeavour Energy on 131 003

Assign an observer, whose only job is to monitor and ensure safe clearances are maintained between operating machinery and powerlines

Always report any contact with powerlines immediately to Endeavour Energy on 131 003.

Underground services

Care must also be taken to ensure that building or excavation activities do not infringe on underground cable, ducts, and protective overs.

The definition of 'excavation' or 'penetration of ground' regarding requirement for BYD or DA notification is any work involving the penetration of the ground or surface of the earth including cutting or caisson, chasing, boring, piering or the digging of trenches, ditches, shafts, wells, tunnels, drifts and rises below the finished levels of the ground surface or finished ground levels. This also includes works involving the movement or placement of soil or other surface materials by removing, boring, or forcing objects into the ground or the surface of the earth.

Before undertaking any work in the vicinity of underground cables, advice should be obtained from the ***Before You Dig Australia (BYDA)*** service.

WHEN EXCAVATING ALWAYS VISIT WWW.BYDA.COM.AU OR DOWNLOAD THE BYDA APP ON IOS OR ANDROID

Before You Dig is a FREE national referral service supported by Endeavour Energy and other major service providers that supplies plans of where electricity, water, gas and telecommunications cables and assets are located, so you know whether it is safe to dig. Contact BYDA on 1100 (Free call) for information, and download the BYDA App on iOS or Android, or visit www.byda.com.au and register to get plans sent to your email address.

NSW legislation requires people who are planning excavation work to obtain copies of underground electricity cable plans from Before You Dig Australia. The plans must be no more than 30 days old when excavation commences.

The aim of the legislation is to ensure workers can establish the exact location of cables and avoid coming into contact or damaging them. It also ensures worker safety and prevents disruption to Endeavour Energy's electricity network.

Contact

Endeavour Energy **131 003**

SafeWork NSW **13 10 50**

Drawings contained in this document are a general guide only to Endeavour Energy's safe distances requirements.

Full details are contained in Endeavour Energy's design and construction drawings and Standards, which are available on request.