



*A guide
to working
safely with*

Mobile Plant

near

Overhead *and*
Underground
Electrical Lines



Please note

This information is for guidance only and is not to be taken as an expression of the law. It should be read in conjunction with the Work Health and Safety Act 2012, the Work Health and Safety Regulations 2012 and any other relevant legislation. To view, go to the WorkSafe Tasmania website at www.worksafe.tas.gov.au

We welcome your feedback on this guide.

Send to: wstinfo@justice.tas.gov.au

Acknowledgement

WorkSafe Tasmania acknowledges Standards Australia's permission to use information from AS 2550.1 Crane, hoists and winches—Safe use Part 1: General requirements. To purchase this standard, go to the SAI Global website at <http://infostore.saiglobal.com> and search for '2550.1'.

Further information

Safe Work Australia has further detailed guidance on working near overhead and underground electrical lines.

Go to www.safeworkaustralia.gov.au and search for 'electric lines', or call 1 300 551 832.

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ABOUT THIS GUIDE

This guide:

- outlines suggested precautions you should take to work safely near overhead and underground electrical lines
- applies to plant, machinery or equipment near overhead and underground electrical lines
- is not limited to any particular type or class of objects, plant, machinery or equipment. For example, you could be operating or moving mobile cranes, elevating work platforms, scissors lift, boom-type concrete placing units, excavators, earth moving machinery, harvesters, grain elevators/augers, slashers, irrigation systems or a tip-truck.

Although this guide does not specifically cover transporting items to, in and from the workplace or site, drivers and operators need to be aware of overhead electrical lines while doing so.

This guide is aimed at:

- the person conducting a business or undertaking (PCBU)
- the person with management or control of the workplace
- workers, operators, safety observers and drivers.

Figure 1: No go zones for electrical lines

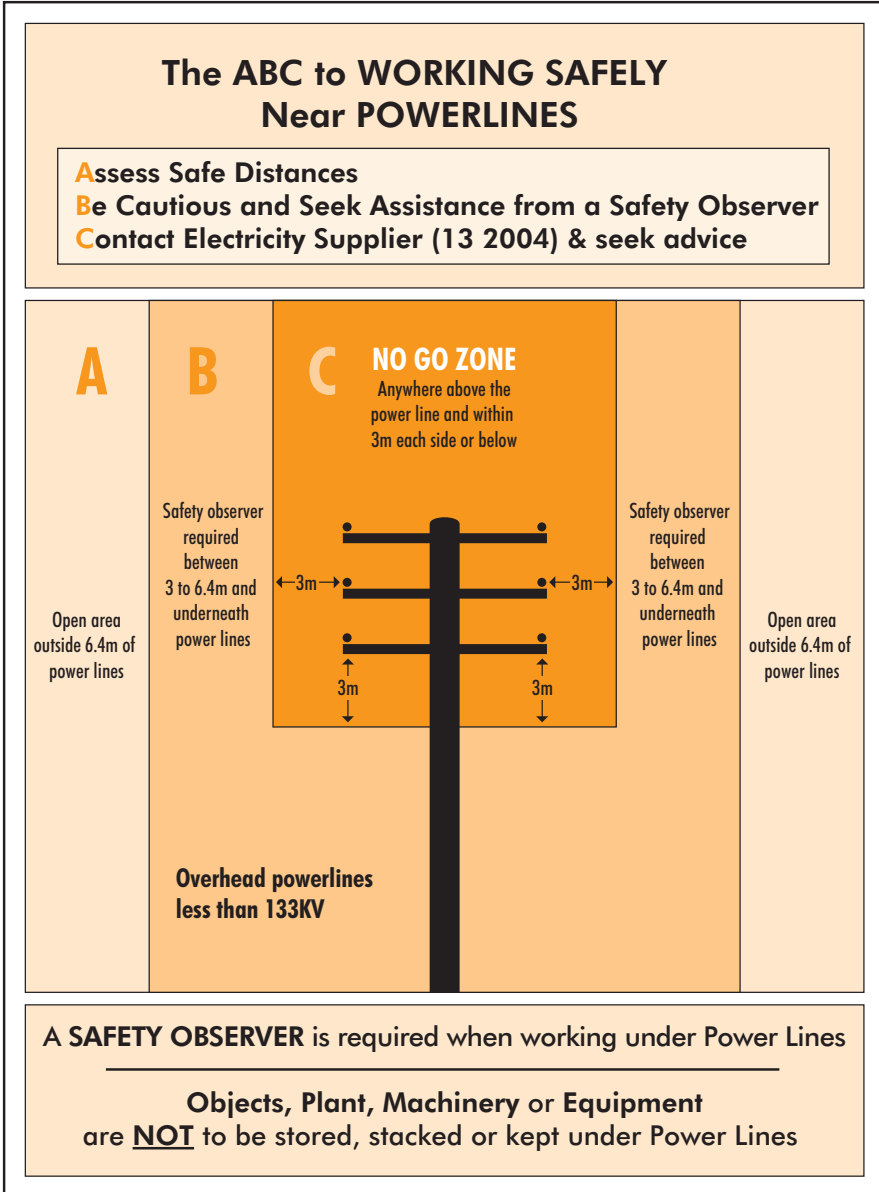
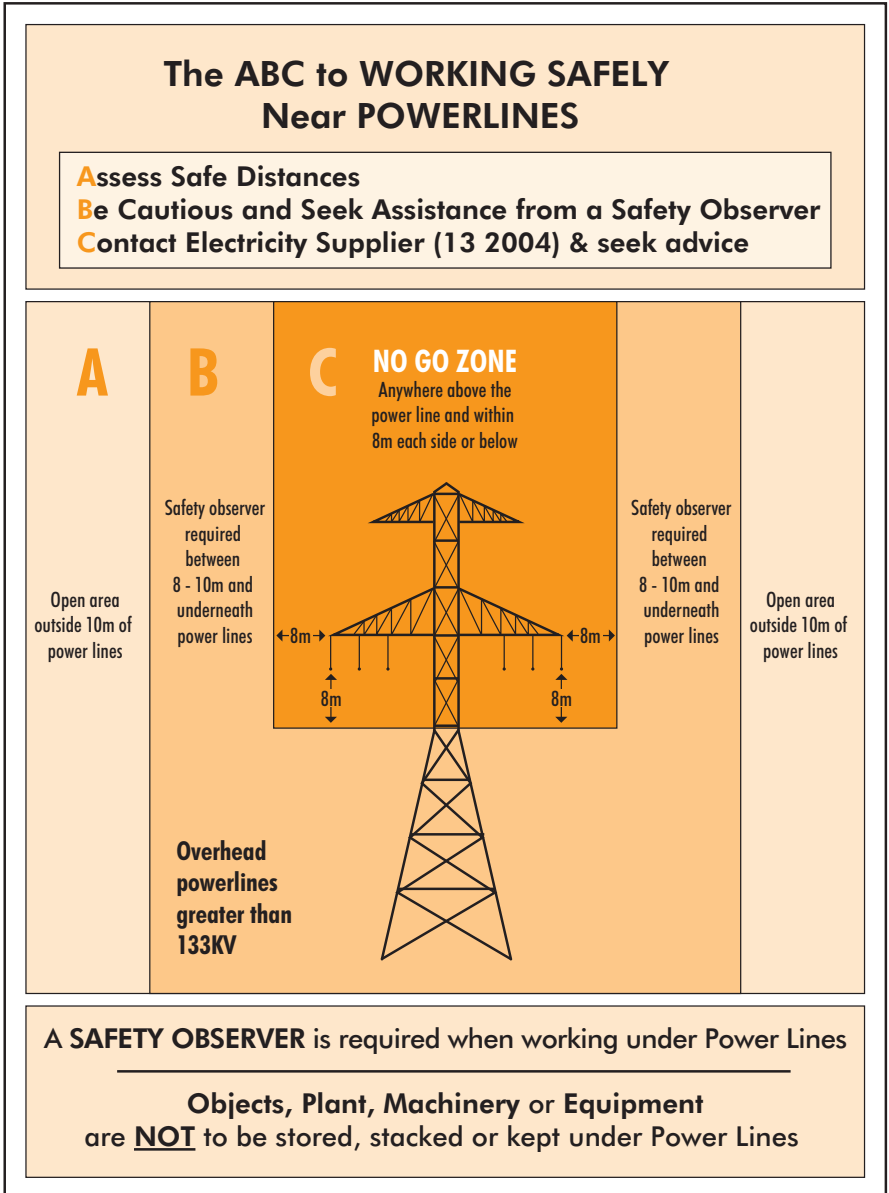


Figure 2: No go zones for towers



IF YOU DO NOTHING ELSE

- Do a risk assessment before you start work.
- Do not enter or work inside the overhead electrical line no go zones (see figures 1 and 2) unless you have written permission from TasNetworks or the private owner of the line (whichever is applicable).
- Do not store, stack or keep objects, plant, machinery or equipment under overhead electrical lines.
- Do not store fuel, oils or chemicals above or near underground electrical lines.
- Use a dedicated safety observer to observe clearances and provide direction to the operator.
- Pothole to locate underground electrical lines.
- Be vigilant at all times.

PRECAUTIONS FOR ALL WORK

When working near overhead and underground electrical lines

I Before you start work

Overhead or underground electrical lines at some workplaces may be privately owned. Check with the person with management or control of the workplace at that workplace and make sure you comply with their safe operating procedures.

Private electrical poles in Tasmania are regulated by Consumer, Building and Occupational Services (Department of Justice). Call 1300 366 322 for any private pole matters.

If the overhead lines are owned by TasNetworks, you must call 13 2004 and get written permission from TasNetworks, if you wish to work in the no go zones (see figures 1 and 2).

I Be vigilant at all times

- Check for the presence of overhead and underground electrical lines.
- Always assume that electrical lines are live.
- Only approach electrical lines when necessary.
- Do not work in the no go zone unless you have written permission from TasNetworks or the private owner of the line (whichever is applicable)
- Make sure every time your worksite is moved, you thoroughly check the distances between your worksite and the electrical lines.

I Do a risk assessment

You must conduct (and document) a risk assessment to identify the hazards and appropriate control measures. These control measures must be implemented to ensure the safe distance of a person, plant or thing from overhead or underground electrical lines. If TasNetworks is responsible for the line, your control measures must be consistent with any TasNetworks requirements.

For guidance on doing a risk assessment, read the 'How to Manage Work Health and Safety Risk' code of practice. Go to www.worksafe.tas.gov.au and search for 'CPI12'.

| Complete a safe work method statement

Construction work on or near energised electrical installations or services is defined as one of the 'high risk construction work' activities. Before undertaking any high risk construction work, you must prepare a documented safe work method statement. Always work in accordance with the safe work method statement.

For a safe work method statement template, go to www.worksafe.tas.gov.au and search for 'SWMS'. For guidance on preparing and implementing a safe work method statement, read Part 4 of the 'Construction Work' code of practice. Go to www.worksafe.tas.gov.au and search for 'CPI04'.

| Beware of 'inattentive blindness'

You may become so focused on your work that you become temporarily 'blind' to what's going on around you. You may forget the hazards around you, especially the ones you can't see or aren't in your normal field of vision — like overhead or underground electrical lines. This is the main reason for the requirement to use a dedicated safety observer when working near or under overhead electrical lines.

UNDERGROUND ELECTRICAL LINES AND CABLES

I Get all information

If you're the person with management or control of the workplace, you must:

- take all reasonable steps to obtain current underground essential services information about the work area before directing or allowing any excavation work to begin
- provide this information to anyone you have engaged to carry out the excavation work
- ensure this information is available for inspection.

If you're the person conducting a business or undertaking (PCBU) that is given the information, you must consider it when doing, directing or allowing the work to be done.

To help you do this:

I Identify all underground services

Use the free Dial Before You Dig service at least two business days before your job begins, to make sure you have the correct information needed to carry out a safe project.

Provide Dial Before You Dig with your dig location, and it passes your request to the relevant asset owners, which then send you the information directly.

Go to www.1100.com.au or call 1100 during business hours.

Using an underground locating service is the safest and most effective way to accurately locate and determine the depth of all underground assets that may be at your worksite.

You need to know and understand:

- the location and depth of underground electrical lines
- any earthmoving and construction activities that:
 - fill in or raise the ground level under an overhead electrical line, or
 - remove or change the depth of coverage over an underground electrical line.

I Pothole

Pothole to locate underground electrical lines; that is, vacuum or hand excavate, don't mechanically excavate. The preferred method is vacuum potholing.

I Protect

Protect and support exposed infrastructure. Always erect safety barriers in areas at risk to protect underground electrical lines.

This is the responsibility of the person conducting the excavation work.

OVERHEAD ELECTRICAL LINES

I Know your equipment

Know the exact height of your equipment — specifically, the exact height when it is fully raised or extended.

Consider all possible situations, including:

- any deflections of the structure of the plant or working conditions under movement
- the additional height when loaded on a transporter
- the deflection of the boom of a crane under load
- the movement of any load being lifted
- the movement of the plant or the overhead electrical lines in windy and other extreme weather conditions
- the effect of unloading plant on uneven ground
- the ground conditions
- ground clearance from overhead lines, including allowances for the sway and sag of the conductors.

I Use a safety observer

You should use a competent person as a safety observer when you are working in zone B (see figures 1 and 2) and where you have written permission from the power line owner, to work in the no go zone.

The safety observer should:

- not do any other duties while performing their safety observer duties
- ensure they are able to communicate with the worker/operator during the process
- position themselves where they can have an unobstructed view of the work being performed and the potential hazards
- be aware of any hazards unique to the site, and make sure they are not at risk from them
- be a competent person.

Please also see table 1 below for when a safety observer should be used.

Note: A competent person means a person who has acquired (through training, qualification or experience) the knowledge and skills to carry out the task.

I Maintain clearance distances

The clearance distances for working with objects, plant, machinery or equipment near overhead electrical lines must not be less than those shown here.

Table 1: Clearance from live overhead electrical lines

Zone	Electrical lines (figure 1) < 133KV	Tower (figure 2) >133KV	Actions
A	Open area outside 6.4m	Open area outside 10m	
B	3m to 6.4m	8m to 10m	Safety observer
C	No go zone	No go zone	Written permission required from TasNetworks/ private owner (whichever is applicable)

The no go zone extends above the overhead electrical lines, with no boundaries, therefore prohibiting any work over the electrical lines. You cannot enter this zone without written permission from TasNetworks, or the owner of the private overhead line.

Clearance distances should allow for the sag and sway of lines due to the effects of wind and temperature. You should also be aware of the possibility of making errors when estimating distances.

IF YOU CONTACT OVERHEAD OR UNDERGROUND ELECTRICAL LINES

- Call TasNetworks on 13 2004. You should also call if electrical arcing or flashover occurs.
- Call WorkSafe Tasmania on 1300 366 322.

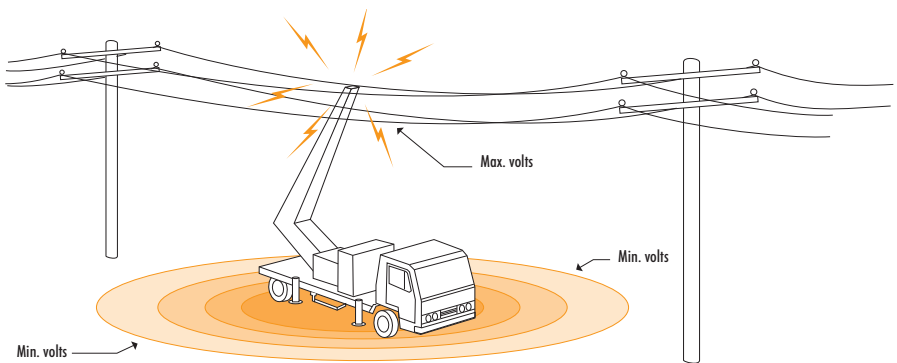
Until help is received, a competent person should remain in control of the situation to warn others of the danger of electrocution.

Assume all electrical lines are live and are capable of delivering a fatal shock:

- do not allow anyone to touch or approach any part of the plant or any fallen wires or exposed cables. Simply being too close can kill
- do not move or interfere with the area or the plant without the permission of a WorkSafe Tasmania inspector — unless it is necessary to save a life, relieve suffering, prevent damage to property or prevent injury to people.

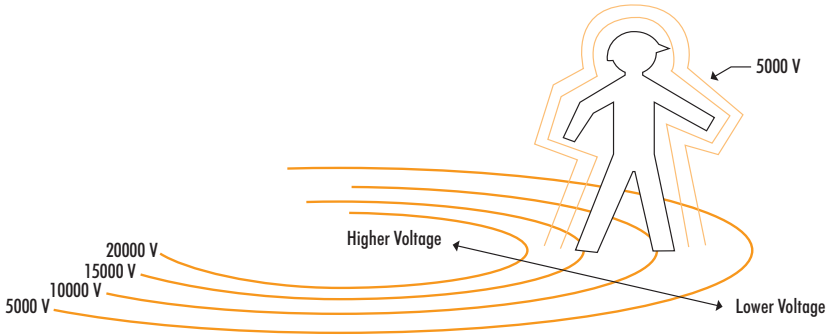
This is the typical affected area surrounding mobile plant when in contact with live overhead electrical lines:

Figure 3



This shows that you should avoid simultaneous contact across areas of high potential difference:

Figure 4



Mobile plant contact

If your mobile plant contacts an overhead electrical line:

- stay inside your cabin or on the plant until the electricity has been switched off and the site made safe
- warn others to keep clear and not to touch any parts of the plant, rope or suspended load
- where possible, try and operate the plant to break contact with the overhead electrical line. For mobile crane operation, for example, if a dogman is in contact with the hook or load, immediately raise the hook to break contact between them and the ground. If you cannot break contact with the overhead electrical line, don't do anything further until it is confirmed that the conditions are safe.

I Fire, direct bodily contact

If there is a fire or imminent threat of someone making direct contact with an overhead electrical line, you should leave your vehicle cab or the plant by:

- jumping clear and as far away as possible
- avoiding touching the plant and the ground at the same time
- moving slowly away from the danger area by shuffling or hopping with both feet together; avoiding simultaneous contact with areas of high potential difference (see figure 4).

Do not return to the mobile plant once you have left it. Electricity flows through the ground, so an electric shock can be received from walking too close to the scene.

I Freeing a victim from electrical contact

Before attempting to free any victim, always assess the danger. Assume all electrical lines are live and are capable of delivering a fatal shock.

Do not become the next victim. Just approaching the site can be dangerous; you don't even have to touch a victim who is still in contact with an electrical current to receive a severe electric shock or arch flash burn yourself.

When freeing a victim from electrical contact:

- isolate the electricity immediately and before any other action is taken
- call emergency services on 000 (if using a mobile phone: 112)
- if required, start resuscitation immediately, but only if it is safe to do so.

PRECAUTIONS FOR MOBILE PLANT

When working near overhead and underground electrical lines

I Get permission

Whether you are operating mobile plant within or outside the no go zones (see figures 1 and 2), get written permission from TasNetworks or the private owner of the line (whichever is applicable) to perform the work. Put controls in place to comply with this permission.

I Use a safety observer

You should not operate mobile plant within the safety observer required zone unless you use a dedicated and competent safety observer to oversee the operation for as long as you are working in this zone.

See page 10 for more information about safety observers.

I Complete a safe work method statement

If you're doing any high risk construction work on or near energised electrical installations or services, you must complete a safe work method statement.

See page 7 for more information about safe work method statement templates, and preparing and implementing these.

I Other precautions

You should:

- do a risk assessment. See page 6 for more information about risk assessments
- use barriers/barricades at ground level, to prevent anyone not involved in the work from entering the restricted zone. These barriers should have appropriate warning signs
- consider fitting (or retro-fitting) warning devices to mobile plant, to alert workers when their plant has entered energised, high-voltage overhead electrical line zones. However, they are not a substitute for properly managing safe work practices.

LEGAL RESPONSIBILITIES

For a complete description of the duties of —

- the person conducting a business or undertaking (PCBU)
- the person with management or control of the workplace
- workers

— read the 'Guide to the Work Health and Safety Act 2012'. Go to www.worksafe.tas.gov.au and search for 'GB311'.

The PCBU also has obligations under the Work Health and Safety Regulations 2012: to ensure (so far as is reasonably practicable) that no person, plant or thing at the workplace comes within an unsafe distance of an overhead or underground electrical line.

CONTACTS

This guide does not substitute for or override any safety rules implemented by network operators.

For a dangerous incident, a serious electrical incident, or more information, contact:

| WorkSafe Tasmania

1300 366 322

www.worksafe.tas.gov.au

| TasNetworks

13 2004

www.tasnetworks.com.au

| Hydro Tasmania

1300 360 441

www.hydro.com.au

| Dial Before You Dig

1100

www.1100.com.au

| Safe Work Australia

1300 551 832

| Private poles

Private electrical poles in Tasmania are regulated by Consumer, Building and Occupational Services (Department of Justice). Call 1300 366 322 for any private pole matters.

1300 366 322
www.worksafe.tas.gov.au

For more information contact

Phone: 1300 366 322 (within Tasmania)

(03) 6166 4600 (outside Tasmania)

Fax: (03) 6173 0206

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