



A GUIDE
to
working safely
near
OVERHEAD
POWER 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 *Workplace Health and Safety Act 1995*, the *Workplace Health and Safety Regulations 1998* and any other relevant legislation. Copies of the legislation can be purchased from Print Applied Technology: call (03) 6233 3289 or freecall 1800 030 940. It is also available on the Internet at www.thelaw.tas.gov.au

This guide was produced by staff from WorkCover Tasmania and Workplace Standards Tasmania.

We welcome your feedback on this guide. Send to: wstinfo@justice.tas.gov.au

ABOUT THIS GUIDE

A guide to working safely near overhead power lines outlines the precautions you need to take to work safely.

The information in this guide applies to using objects, plant, machinery or equipment near overhead power lines. It 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, boom-type concrete placing units, excavators, earth moving machinery, grain elevators/ augers, slashers, irrigation systems, scaffold or a tip-truck.

Although this guide does not specifically cover transporting from worksite to worksite, drivers and operators need to be aware of overhead power lines while transporting objects, plant, machinery or equipment.

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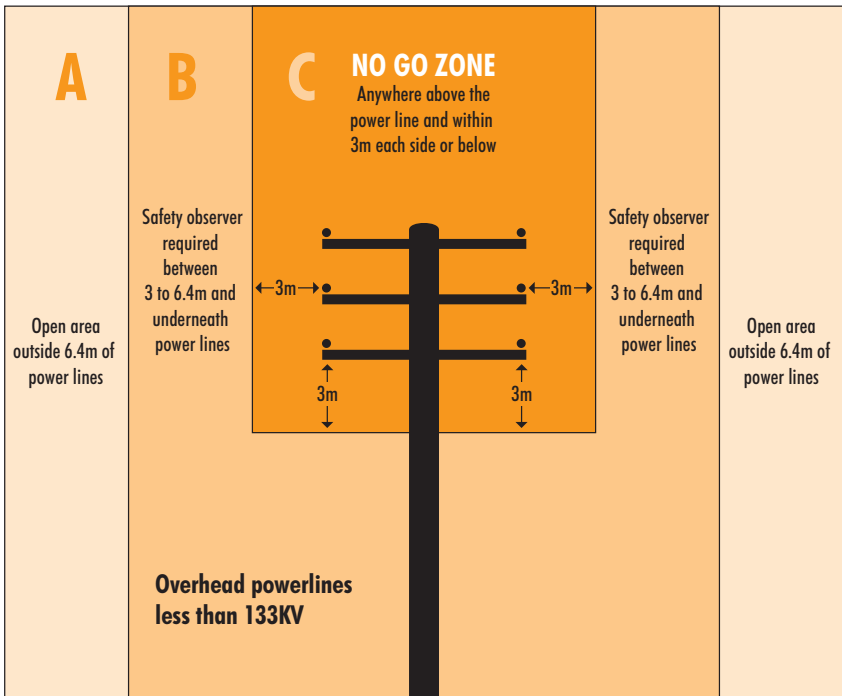
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The ABC to WORKING SAFELY Near POWERLINES

Assess Safe Distances

Be Cautious and Seek Assistance From "Observer"

Contact Electricity Supplier (13 2004) & seek advice



An **OBSERVER** is required when working under Power Lines

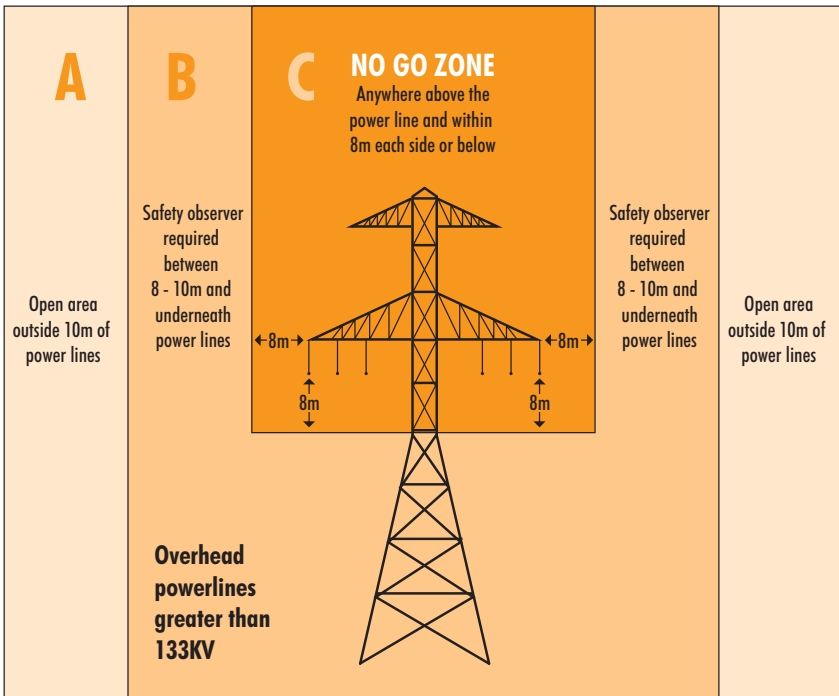
Objects, Plant, Machinery or Equipment
are **NOT** to be stored, stacked or kept under Power Lines

The ABC to WORKING SAFELY Near POWERLINES

A Assess Safe Distances

B Be Cautious and Seek Assistance From "Observer"

C Contact Electricity Supplier (13 2004) & seek advice



An **OBSERVER** is required when working under Power Lines

Objects, Plant, Machinery or Equipment
are **NOT** to be stored, stacked or kept under Power Lines

IF YOU DO NOTHING ELSE, DO THIS!

Do not enter or work inside the no go zones (3 metres/10 feet from the overhead wires on a pole, or 8 metres/26 feet from the overhead wires on a transmission tower) without express permission from the electricity supplier. Always call 13 2004 first.

Do not store, stack or keep objects, plant, machinery or equipment under overhead power lines.

Do not work near or under overhead power lines without a dedicated safety observer to keep an eye on you.

Be vigilant at all times when working near overhead power lines. Beware of 'inattention blindness' and forgetting about the hazards around you.

BEWARE OF 'INATTENTION BLINDNESS'

Inattention blindness develops when you are so focused on your work task that you become temporarily 'blind' to what's going on around you.

This means you sometimes, momentarily, forget about the hazards around you, especially the ones you can't see or that aren't in your normal field of vision — like overhead power lines.

This is the main reason for the requirement to use a dedicated safety observer when working near or under overhead power lines.

PRECAUTIONS FOR WORKING NEAR OVERHEAD POWER LINES

| Be vigilant at all times

Check for the presence of overhead power lines.

Always assume that overhead power lines are live.

Always keep a safe distance from overhead power lines.

Make sure that every time your workplace is moved, you thoroughly check the distances between your workplace and the overhead power lines.

| Conduct a risk assessment

A risk assessment needs to be carried out for all work where there is a risk of workers being exposed to electrical hazards — such as working near overhead power lines.

Work through the four SAFE steps — spot the hazard, assess the risk, fix the problem, and evaluate the results — before you start any work. This will ensure all hazards are identified, and control measures are in place to remove or reduce risks to an acceptable level.

For more detailed guidance on this process, call the Workplace Standards Helpline on 1300 366 322 for your free copy of *Hazard management: Play it SAFE* (GB081).

| Call 13 2004

If circumstances change during the job, or you need to work in an area closer than 3 metres/10 feet to the wires on a power pole or closer than 8 metres/26 feet from the wires on a transmission tower, then you must call the electricity supplier on 13 2004 for assistance.

Work should not start or should stop until you have made this call, and the necessary safety controls have been put in place.

I Know your equipment

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

Make sure you consider all possible situations, such as:

- any deflections of the structure of the plant or working conditions under movement
- 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 power lines in windy and other extreme weather conditions
- the effect of unloading plant on uneven ground.

I Use a safety observer

You must use a competent person as a safety observer when you are working:

- on the ground and under power lines that are on a pole, and you are able to stay at least 3 metres/10 feet away from the wires
- either side of power lines on a pole, from 3 metres/10 feet to 6.4 metres/21 feet
- on the ground and under power lines that are on a tower, and you are able to stay at least 8 metres/26 feet away from the wires
- either side of power lines on a tower, from 8 metres/26 feet to 10 metres/33 feet.

The safety observer must:

- not do any other duties while performing their safety observer duties
- ensure they are able to communicate with the worker/s 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.

Watch separation distances

The separation distances for working with objects, plant, machinery or equipment near overhead power lines must not be less than those shown in the table below.

Clearances from live overhead power lines		
	Overhead power lines on a pole	Overhead power lines on a tower
No go zone	3 metres either side 3 metres below Anywhere above the power line*	8 metres either side 8 metres below Anywhere above the power line*
Safety observer required	3–6.4 metres	8–10 metres

* The no go zone extends above the overhead power lines, with no boundaries — therefore prohibiting any work over the power lines.

Separation distances must 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.



Overhead power lines can be found in many locations around Tasmania. They pass over construction and mine sites and over rural, forestry and urban areas. No matter where you are working, it's likely you will be operating close to overhead power lines at some stage.



MOBILE PLANT

Mobile plant must not be operated within the no go zone unless you call the electricity supplier on 13 2004, seek assistance and ensure all necessary safety controls have been put in place.

Mobile plant must not be operated within the safety observer required zone unless you use a competent, dedicated safety observer to oversee the operation for as long as you are working in this zone.

You must also:

| Use barriers at ground level

Set up barricades to prevent people other than those involved in the work from entering the restricted zone. These barricades should have appropriate warning signs.

| Consider fitting warning devices

Warning devices alert workers to when their mobile plant has entered energised, high-voltage overhead power line zones. These devices are available to be fitted to plant and equipment. However, they are not a substitute for properly managing safe work practices.

When operating mobile plant close to buried or underground power lines, the same precautions should be observed as for operating near overhead power lines.

Remember to dial 1100 before you dig.

IF SOMETHING GOES WRONG

What to do if you contact overhead power lines

Call the electricity supplier on 13 2004

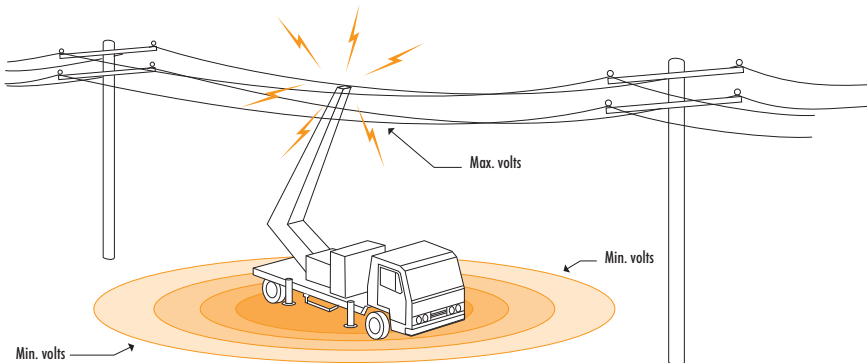
Call Workplace Standards Tasmania on 1300 366 322

If electrical arcing or flashover occurs, or if objects, plant, machinery or equipment make contact with overhead power lines, you must call the electricity supplier immediately. Until help is received, a competent person should remain in control of the situation to caution others of the danger of electrocution.

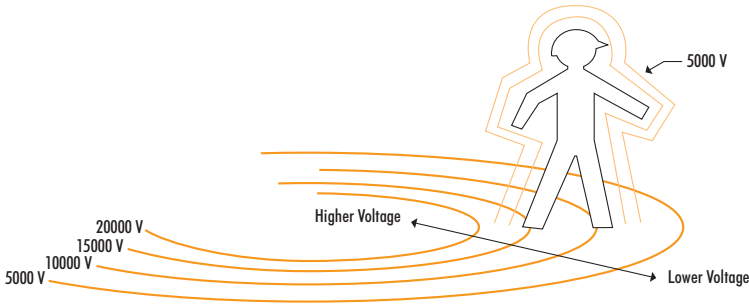
You should assume that all power lines are live and are capable of delivering a fatal shock.

Do not allow anyone to touch or approach any part of the plant or any fallen wires. Simply being too close can kill.

The diagram below shows the typical affected area surrounding mobile plant when in contact with live overhead power lines.



As shown in the diagram below, you should avoid simultaneous contact across areas of high potential difference.



What the operator should do

If mobile plant contacts overhead power lines, you should:

- stay inside the operator's cabin or on the plant until the power has been switched off and the site made safe
- warn others to keep clear and not touch any parts of the plant, rope or suspended load
- where possible, try and operate the plant to break contact with the overhead power 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 power line, then take no further action until it is confirmed that the conditions are safe.

If there is a fire or imminent threat of direct bodily contact with the overhead power line, you must leave the operator's cabin or the plant (to avoid being electrocuted or injured) by:

- jumping clear and as far away as possible from the plant
- 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 diagram above).

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.

| Other points to remember

In the event of an object, plant, machinery or equipment contacting overhead power lines:

- it must not be moved or otherwise interfered with without the permission of a Workplace Standards Tasmania inspector. You may only move plant if it is necessary to save a life, relieve suffering, prevent damage to property or prevent injury to people
- it must be checked by a competent person to assess any damage to its components. Any actions the competent person recommends should be recorded and must be completed before the plant is returned to service.



Coming into contact with overhead power lines is one of the largest causes of fatalities associated with plant and equipment.



FIRST AID

I Freeing a victim from electrical contact

Before attempting to free any victim, always assess the danger. Do not become the next victim — anyone touching a victim still in contact with an electrical current may also receive a severe electric shock. Remember, you should always assume that overhead power lines are live.

When freeing a victim from electrical contact:

- isolate the power immediately and before any other action is taken
- call emergency services on 000, or if calling from a mobile phone, 112
- start resuscitation immediately if required, but only if it is safe to do so.

You don't even need to directly touch a high-voltage overhead power line to receive a fatal shock. Simply being too close can kill.

Resuscitation

If breathing or circulation stops and you need to perform resuscitation, remember the DRABCD action plan:

- D Check for danger: to yourself, others and the victim
- R Check for response: is the casualty conscious or unconscious
- A Check the airway: is the airway clear and open?
- B Check breathing: look, listen and feel
 - If the victim is breathing: place them on their side and monitor signs of life
 - If the victim is not breathing: give two initial breaths; check for signs of life
- C Start CPR if no signs of life: if the victim is unconscious, not breathing, not moving
 - Start CPR with 30 compressions followed by two breaths
 - Continue CPR in this way (30:2) at the rate 100 compressions a minute until help arrives
- D Use a defibrillator if available. Follow the voice prompts

Teams working in remote or isolated locations should make sure at least one member of the team is trained and competent in workplace first aid. The team must, where reasonably practicable, have an effective method of communication established with a base location, so emergency assistance can be arranged if required.

LEGAL RESPONSIBILITIES

Everyone involved in working near overhead power lines needs to understand the that will be carried out, and their legal roles and responsibilities under the *Workplace Health and Safety Act 1995*.

Employers

If you're an employer, manager or supervisor, you are responsible for providing and maintaining:

- a safe work environment
- safe work systems or procedures
- safe plant and equipment
- training, information, instruction and supervision
- protective equipment if needed.

Workers

If you're a worker, you also have OHS responsibilities. These include acting responsibly and taking reasonable care of the health and safety of yourself and others by:

- following any reasonable instruction, information and training given
- working safely and following safe work procedures
- working with your employer and anyone else — such as your co-workers and employees' safety representative — to make your workplace safer
- reporting any hazards, accidents or near misses.

For more information, call the Workplace Standards Helpline on 1300 366 322 for your free copy of *A Guide to Workplace Health and Safety Legislation* (GB133) or go to www.wst.tas.gov.au and search for 'GB133'.

FURTHER INFORMATION

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

The electricity distribution company in Tasmania is Aurora Energy Pty Ltd (trading as Aurora Energy) and the electricity transmission utility is Transend Networks Pty Ltd (trading as Transend Networks). Hydro Tasmania, an electricity generator, also has some overhead power lines.

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

| Aurora Energy Pty Ltd (trading as Aurora Energy)

Faults and emergencies: 13 2004

Always ring this number as first contact in a dangerous situation or when you need to work within the designated no go zones

GPO Box 191 Hobart Tas 7001

www.auroraenergy.com.au

| Transend Networks Pty Ltd (trading as Transend Networks)

1300 361 811

PO Box 606 Moonah Tas 7009

www.transend.com.au

| Hydro Tasmania

1300 360 441

4 Elizabeth Street Hobart Tas 7000

www.hydro.com.au

| Workplace Standards Tasmania

1300 366 322 (within Tasmania) (03) 6233 7657 (outside Tasmania)

30 Gordons Hill Rd Rosny Park 7018

www.wst.tas.gov.au

Aurora Energy and Transend Networks have established safe access procedures; contact them for details.

Please also note that overhead power lines at some workplaces could be privately owned. Check with the accountable person at that workplace and ensure that you comply with their safe operating procedures.

Further information on determining safe work practices when operating mobile plant and equipment can be found in these Australian Standards:

- AS 2550.1—2002 *Crane, hoists and winches—Safe use Part 1: General requirements*
- AS 2550.5—2002 *Cranes, hoists and winches—Safe use Part 5: Mobile cranes.*

We gratefully acknowledge:

- the permission given by Standards Australia to use information from Australian Standards. A substantial amount of information contained in this safety bulletin has been derived from AS 2550.1—2002 *Crane, hoists and winches—Safe use Part 1: General requirements*. For more information go to www.standards.com.au
- the assistance given by the Office of the Chief Electrical Inspector in Victoria, and information from their publication *Rules for operating near overhead power lines for cranes, concrete placing booms and excavating equipment*.

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

For more information contact
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ISBN: 978 1 876712 26 0