



Electricity Entity Requirements: Working Near Overhead and Underground Electric Lines

Table of Contents

1. Purpose and Scope	3
2. Definitions, Abbreviations and Acronyms	3
3. References	4
4. About This Guide	5
4.1. Who does the Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines and Electricity Entity Requirements apply to?	5
4.2. Are you working or planning to work near overhead or underground electric lines?	5
4.2.1 Work near overhead electric lines	6
4.2.2 Exclusion Zones	6
4.2.3 Work near underground electrical lines (underground electrical assets)	8
4.3. Obtaining Safety Advice	8
4.4. Authorised Person and how to become one?	8
4.5. Contacting Electricity Entity for Safety Advice or Authorised Person Enquiries	9
5. Overhead Electric Lines	9
5.1. Isolation of supply to customer installation to eliminate exclusion zone around LV service line	10
5.2. Operating Plant	11
5.3. Scaffolding Requirements	12
5.4. High Load transport under Overhead Electric Lines	15
5.5. Additional Details and Fact Sheets on Electricity Entity Requirements	15
6. Underground Electrical Assets	16
6.1. Responsibilities When Working in the Vicinity of Electricity Entity Underground Electrical Assets ..	16
6.2. Conditions of Supply of Information	16
6.3. When Working in the Vicinity of Electricity Entity Underground Electrical Assets, You Must Observe the Following Conditions	17
6.3.1 Records	17
6.3.2 Location of underground electrical assets	18
6.3.3 Remote or On-Site Cable Location conducted by Electricity Entity	18
6.3.4 Electrical Cables	19
6.3.5 Separation from Electricity Entity underground electrical assets	19
6.4. Additional Details and Fact Sheets on Electricity Entity Requirements	20
7. Excavation	21
7.1. Excavating near Poles and Stay Wires	21
7.1.1 Certified Engineering Assessment	22
7.2. Excavating Near Underground Electrical Assets	23
7.2.1 Excavating Parallel to Underground Electrical Assets	23
7.2.2 Excavating Across Underground Electrical Assets	23
7.2.3 Heavy Machinery Operation Over Underground Electrical Assets	24
7.2.4 Directional Boring Near Underground Electrical Assets	24
7.2.5 Hydro Vac Operation	24
7.3. Blasting	24
8. Reporting Damage Caused to Overhead or Underground Electric Lines	24
9. Infrastructure near Electric Lines	25
9.1. Easements and Wayleaves	25



Electricity Entity Requirements: Working Near Overhead and Underground Electric Lines

9.1.1 What is an Electricity Easement?	25
9.1.2 Why are easements necessary?.....	25
9.1.3 How do I know if there are easements on my property?	25
9.1.4 Who owns the land the easement is on?	25
9.1.5 How does an easement affect what I can do with my property?	25
9.1.6 Who is responsible for maintenance of easement area?.....	26
9.1.7 What type of maintenance work does Electricity Entity undertake on easements?	26
9.1.8 Where consent (Wayleave) to installing Electricity Entity infrastructure has been given	26
9.2. Contact Electricity Entity when planning construction work near electric lines	27
9.3. What clearances must be maintained once construction work is completed?	27
9.4. What about Electric and Magnetic Fields?	30

Disclaimer

This document refers to various standards, guidelines, calculations, legal requirements, technical details and other information and is not an exhaustive list of all safety matters that need to be considered.

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Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

1. PURPOSE AND SCOPE

The purpose of this document is to set out the Electricity Entity requirements for anyone who may be contemplating working or operating plant near any Electricity Entity overhead or underground electric lines.

2. DEFINITIONS, ABBREVIATIONS AND ACRONYMS

Applicant

A person contacting, or submitting an application to the Electricity Entity for Safety Advice.

Authorised Person

For work near an electrical line, means a person who has enough technical knowledge and experience to do work that involves being near to the electrical line; and has been approved by the person in control of the electrical line (Electricity Entity) to do work near to the electrical line.

Authorised Person (Electrical)

An Electrical Mechanic or Electrical Linesperson (holding current Queensland Licence) working on behalf of an electrical contractor and accredited with the Electricity Entity who is permitted to remove and replace LV service fuse(s) when isolation of customer LV service line is required to eliminate the exclusion zone around the LV service line, or to work on the customer's mains and / or switchboard.

Earthworks

Any digging, penetration or disturbance of ground including but not limited to post hole digging, excavating, trenching, directional boring, bore hole sinking, driving pickets/posts into ground, cut and fill, dam or levee bank construction, blasting.

Electricity Entity

Where Electricity Entity appears throughout this document, it relates to either Energex or Ergon Energy area of responsibility. Refer to respective contact details below.

Energex:

- General Enquiries - ph 13 12 53
- Loss of Supply – ph 13 62 62
- Emergencies – ph 13 19 62

Ergon Energy:

- General Enquiries - ph 13 74 66
- Loss of Supply – ph 13 22 96
- Emergencies – ph 13 16 70

Instructed Person

For an electrical line, means a person who is acting under the supervision of an Authorised Person for the electrical line.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

Safety Advice

A written notice identifying the known electrical hazards at a specific site and advising the control measures required to be implemented by Responsible Person (person responsible for worksite) to reduce the likelihood of harm to person, plant or vehicle at site.

Safety Observer

A safety observer or “spotter”, for the operation of operating plant, means a person who:

- (a) observes the operating plant; and
- (b) advises the operator of the operating plant if it is likely that the operating plant will come within an exclusion zone for the operating plant for an overhead electric line.

This is a person who has undergone specific training and is competent to perform the role in observing, warning and communicating effectively with the operator of the operating plant.

Untrained Person

For an electrical line, means a person who is not an Authorised Person or an Instructed Person for the electrical line.

3. REFERENCES

Electrical Safety Regulation 2013: Part 5 - Overhead and Underground Electric Lines

Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines

Work Health and Safety Act 2011

Work Health and Safety Regulation 2011

Energex documents:

- Form 1227 Application for Safety Advice – Working near Energex exposed live parts
- Form 1228 Important Notice – Working near Energex Power Lines Including Overhead Services
- Form 0347 Safety Advice on working near Energex exposed live parts

Ergon Energy documents:

- BS001405F107 Safety Advice Request Form
- BS001405F108 Safety Advice on Working around Electrical Parts Form
- BS001405R101 Important Notice Regarding Safety Advice QRG

Working Near Overhead and Underground Electric Lines

4. ABOUT THIS GUIDE

This guide to working near the Electricity Entity network is designed to assist any person working, contemplating work or operating plant near any Electricity Entity overhead or underground electric lines to meet their duties under the Work Health and Safety Act 2011, Electrical Safety Act 2002, Electrical Safety Regulation 2013 and relevant Codes of Practice including Electrical Safety Code of Practice 2010 Working Near Overhead and Underground Electric Lines and help to identify the steps needed to ensure risks are minimised for all who work or are likely to be affected by the work in these situations.

The Electrical Safety Code of Practice 2010 Working Near Overhead and Underground Electric Lines, provides practical advice on ways to manage electrical risk when working near electric lines including the exclusion zones that apply. An electronic copy of this Code of Practice as well as, Electrical Safety Act and Regulation is available at the Queensland Government Electrical Safety Office web site at <https://www.worksafe.qld.gov.au/electricalsafety>. You should obtain a copy and read this material, to enable you to fully understand your obligations, and prospective means of complying with them.

4.1. Who does the Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines and Electricity Entity Requirements apply to?

A person, worker or Person Conducting a Business or Undertaking (PCBU) at a workplace is required to comply with the requirements of Electrical Safety Regulation 2013 Part 5 Overhead and Underground Electric Lines and Electrical Safety Code of Practice 2010 Working Near Overhead and Underground Electric Lines to ensure that no person, plant or thing comes within an unsafe distance (exclusion zone) of an overhead electric line. Compliance with these regulatory requirements is essential to reduce the risk of electric shock and contact with Electricity Entity electric lines and other assets which can have deadly consequences.

Examples of work activities where risk of person, plant or equipment coming near or into contact with overhead electric lines include but are not limited to:

- Pruning or felling trees or vegetation near overhead electric lines, including the service wire into a building;
- Carrying out building work, scaffolding or demolition adjacent to overhead electric lines;
- Painting fascia, replacing roofing, guttering or external cladding near service line point of entry to a building;
- Operating cranes, tip trucks, cane harvesters, elevated work platforms, fork lifts, grain augers, excavators, irrigators, etc near overhead electric lines;
- Erecting or maintaining advertising signs or billboards near overhead electric lines;
- Dam or levee bank construction.

Examples of work activities that could involve risk of damage to underground cables or earthing systems include but are not limited to:

- Digging holes, excavating, sawing, trenching, under boring, sinking bore holes, earthworks or laying cables, pipes, etc or driving implements into the ground (e.g. star pickets, fence posts) near where underground cables or earthing systems may be located.

4.2. Are you working or planning to work near overhead or underground electric lines?

Electrical Safety Regulation Section 68 requires that before carrying out any work at a workplace where there is a risk of any person, plant or thing encroaching the exclusion zone of

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

overhead electric lines, the person, worker or PCBU is required to ensure that the potential hazards are identified, a risk assessment conducted and the necessary control measures implemented to minimise electrical safety risks to ensure the safety of all workers and other persons at the workplace. The Electrical Safety Regulation 2013 and Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines detail the Exclusion Zones that must be maintained.

4.2.1 Work near overhead electric lines

Where a risk assessment has been conducted and control measures implemented in accordance with requirement of Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines and Electricity Entity Requirements (this document) and it has identified that exclusion zones from overhead electric lines cannot be maintained, the person, worker or PCBU is then required to contact Electricity Entity and request written Safety Advice (refer Section 4.3 below).

The person, worker or PCBU shall be required to maintain exclusion zones until such times as the Electricity Entity has provided written Safety Advice.

A person, worker or PCBU would not be required to contact the Electricity Entity and request written Safety Advice where their risk assessment and implemented control measures ensure that exclusion zones from overhead electric lines will be maintained throughout performance of work to be undertaken at a particular site.

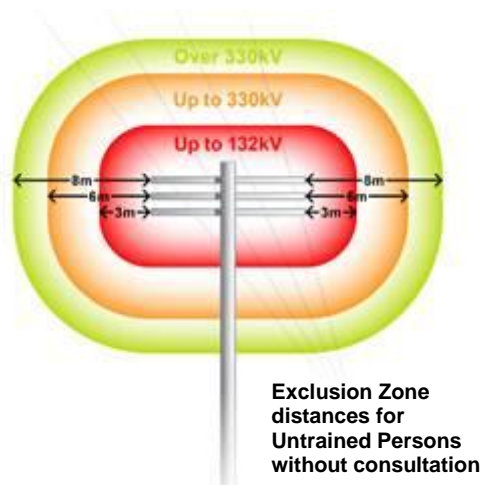
4.2.2 Exclusion Zones

An exclusion zone is a safety envelope around an overhead electric line. No part of a worker, operating plant or vehicle should enter an exclusion zone while the overhead electric line is energised (live).

Exclusion zones keep people, operating plant and vehicles a safe distance from energised overhead lines.

You must keep yourself and anything associated with the work activity out of the exclusion zone (e.g. a safe distance) unless it is not reasonably practicable to do so; and the person conducting a business or undertaking complies with the requirements of Section 68(2) of the Electrical Safety Regulation in relation to:

- conducting a risk assessment;
- implementing control measures; and
- adhering to any requirements of an Electricity Entity responsible for the line.



Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

Exclusion Zone - Untrained Person (distances in mm)

Nominal phase to phase voltage of electric line	Untrained Person		
	Person	Operating Plant	Operating Vehicles
Insulated LV: Consultation with and verified by AP (Electrical)	No exclusion zone prescribed	1000	300
LV with NO consultation with Electricity Entity	3000	3000	600
LV With consultation with Electricity Entity	1000		
>LV up to 33 kV with NO consultation with Electricity Entity	3000		900
LV up to 33 kV with consultation with Electricity Entity	2000		
>33 kV up to 132 kV	3000	6000	2100
>132 kV up to 220 kV	4500		2900
>220 kV up to 275 kV	5000		

(information extracted from Electrical Safety Regulation 2013 Schedule 2)

Exclusion Zone – Instructed Person and Authorised Person (distances in mm)

Nominal phase to phase Voltage of electric line	Instructed Person (IP) & Authorised Person (AP)		
	AP and IP	Operating Plant with Safety Observer or another Safe System of work	Operating of Vehicles
Insulated LV: Consultation with and verified by AP (Electrical)	No exclusion zone prescribed	No exclusion zone prescribed	No exclusion zone prescribed
LV	No exclusion zone prescribed	1000	600
>LV up to 33 kV	700	1200	700
>33 kV up to 50 kV	750	1300	750
>50 kV up to 66 kV	1000	1400	1000
>66 kV up to 110 kV		1800	
>110 up to 132	1200		1200

(information extracted from Electrical Safety Regulation 2013 Schedule 2)

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

4.2.3 Work near underground electrical lines (underground electrical assets)

Before carrying out any earthworks at a location, the person, worker or PCBU is required to ensure that the potential hazards are identified, a risk assessment conducted and the necessary control measures implemented to minimise the risk of damaging identified or unidentified underground electrical assets and to ensure the safety of all workers and other persons at the workplace. The Electrical Safety Regulation 2013 and Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines and Electricity Entity Requirements (this document) detail the requirement for work near underground electric lines.

There is no exclusion zone applicable for underground electrical assets – conduits, cables (unless cable is damaged, or conductors or terminations have been exposed) therefore there is **no requirement for a written Safety Advice** to be requested by a person, worker or PCBU, or issued by an electricity entity for work at a site that only involves identified or unidentified underground electrical assets (e.g. does not involved overhead electric lines or other exposed live parts within the work location).

4.3. Obtaining Safety Advice

To obtain written Safety Advice where identified as being required in Section 4.2.1 above, complete and return (by fax or email) the applicable Safety Advice Request Form which is accessible via the electricity entity website link on page 9:

- Energex Form 1227 Application for Safety Advice – Working near Energex exposed live parts
- Ergon Energy BS001405F107 Safety Advice Request Form

On receipt, the Electricity Entity will contact the Applicant to advise date and time to meet at site to provide written Safety Advice. It is advisable to bring to the meeting your copy of the Electrical Safety Code of Practice 2010 Working Near Overhead and Underground Electric Lines (and Dial Before You Dig Plan for location of underground assets where required), as reference to this will be necessary during the meeting. Written Safety Advice and/or other control measures provided by the Electricity Entity may incur a fee.

Failure to adhere to the Electrical Safety Regulation Section 68 requirements and mandatory control measures as documented on written Safety Advice as issued will result in written non-compliance advice being sent to the Electrical Safety Office.

Where this work is required to occur on a regular basis at a workplace, the PCBU may consider arranging to have one or more employees trained and subsequently accredited with the Electricity Entity as Authorised Persons.

4.4. Authorised Person and how to become one?

Under the Electrical Safety Regulation 2013, the exclusion zones for working near or operating plant or vehicles near exposed, low voltage or high voltage electric lines vary depending on whether a person is classed as an “Untrained Person”, “Authorised Person” or “Instructed Person”. An Authorised Person is permitted to carry out work closer to the electric lines than an Untrained Person (refer Electrical Safety Code of Practice 2010 Working Near Overhead and Underground Electric Lines Appendix B Exclusion Zones for Overhead Electric Lines).

To become an Authorised Person, the employer / self-employed person must first satisfy the “person in control” of the electric line, in this case the Electricity Entity, that their Applicants possess the required competencies. They must then apply in writing to Electricity Entity for approval.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

Removal or replacement of LV service fuse to permit work on consumers' mains, installation switchboard, consumer's terminals or eliminate an exclusion that would exist requires the Electrical Mechanic to hold a current Queensland Electrical Mechanic Licence and perform the work in accordance with their documented safe system of work.

NOTE: It is not permissible to replace a blown LV service fuse(s) after loss of supply to consumer's installation or to alter Electricity Entity LV aerial services.

4.5. Contacting Electricity Entity for Safety Advice or Authorised Person Enquiries

By phone

- call Electricity Entity on General Enquiries phone number (refer page 3).

By email

- **Energex:** custserve@energex.com.au or authorisedperson@energex.com.au
- **Ergon Energy:** safetyadvice@ergon.com.au

Website

- **Energex:** <https://www.energex.com.au/safety/safety-around-the-network>
- **Ergon Energy:** <https://www.ergon.com.au/network/safety/business-safety/the-outdoor-workplace/working-near-powerlines>

5. OVERHEAD ELECTRIC LINES

The following table sets out preparatory work options that may be required to be performed by the Electricity Entity (or electrical contractor where identified as being permitted who is an Authorised Person - Electrical) to assist a person, worker or PCBU in minimising the electrical safety risks of, encroaching within the exclusion zone or, contact with electric lines.

Category of work		Description	Costing arrangement
Safety Advice	Base information	Provide Safety Advice	Nil cost to customer
LV Service isolation	1. Isolation carried out by customer's electrical contractor	Isolation of overhead or underground service by removal of the service fuse(s). (Preferred option to isolate supply and eliminate the exclusion zone).	No involvement by the Electricity Entity. May be a cost charged by the customer's electrical contractor.
	2. Isolation carried out by Electricity Entity	Customer requested isolation of overhead or underground service by removal of the service fuse(s); or Customer requested physical disconnection and reconnection of overhead or underground service.	Cost to customer.
Insulation integrity verification	3. Verification of insulation integrity to reduce exclusion zone to no exclusion zone prescribed e.g. no contact permitted	Verification of insulation integrity to classify as insulated service – Insulation integrity can only be verified at the time of inspection – visual inspection is required before confirmation in all cases. When service insulation integrity verified - no exclusion zone prescribed e.g. no contact permitted. This can be performed by an Electrical Contractor who is also an Authorised Person (Electrical).	Cost to customer.

Electricity Entity Requirements:



Working Near Overhead and Underground Electric Lines

Category of work	Description	Costing arrangement	
Service replacement	4. Open wire service, service fuse(s) at house/building	Replacement of service with new XLPE service cable and service fuse(s) installed at origin (pole end) of service to allow isolation of service. Insulation integrity can be verified for new XLPE services at the time of installation – visual inspection is required before confirmation.	Nil cost to customer for service replacement. Customer responsible for necessary installation, Mains Connection Box and service support bracket upgrade and associated costs if required.
		Service installations where: a. the consumer's mains cannot be insulated and an exclusion zone must be maintained, and b. the service cannot be isolated at the service fuse. Service to be isolated by breaking the service cable connection to the LV mains at the pole. Service fuse(s) to be installed at origin (pole end) of service prior to reconnection.	Nil cost to customer for first disconnection and reconnection. Cost to customer for subsequent requests.
	5. All other service replacements	Customer requested replacement of existing service with new XLPE service cable to classify as insulated service, in lieu of isolation, to allow work close (no exclusion zone prescribed e.g. no contact permitted). Service fuse(s) to be installed at origin (pole end) of service.	Cost to customer for service replacement. Customer responsible for necessary installation, Mains Connection Box and service support bracket upgrade and associated costs if required.
Tiger Tails	6. Installation of Tiger Tails (for visual indication only – not for providing electrical insulation of LV mains)	Customer requested coverage of LV mains for visual indication only (not permitted on HV mains). Ergon Energy also fit tiger tails to LV service line for visual indication only.	Cost to customer.
Aerial Markers	7. Installation of aerial marker flags or balls (for visual indication only)	Customer requested temporary or permanent installation of appropriate aerial marker devices on LV or HV mains.	Cost to customer.
Switching	8. Customer requested switching	Customer requested switching to allow customer/contractor to work close (no exclusion zone prescribed e.g. no contact permitted).	Cost to customer.

5.1. Isolation of supply to customer installation to eliminate exclusion zone around LV service line

An Electrical Mechanic (holding current Queensland Licence) working on behalf of an electrical contractor and accredited with the Electricity Entity as an Authorised Person (Electrical) is permitted to remove and replace LV service fuse(s) when isolation of customer LV service line is required to eliminate the exclusion zone around the LV service line, or to work on the customer's mains and/or switchboard. Isolation of the customer's LV service line by an Authorised Person (Electrical) is only permitted at an underground service pillar or service pole by removing a fuse wedge(s) from a service line, in accordance with Electricity Industry practices e.g. from ground level using appropriate insulated tools, PPE and insulating mats. In those situations where the service fuse/circuit breaker is not located at supply end of the LV service, contact the Electricity Entity to arrange for Safety Advice where elimination of exclusion zone around LV service line is required.

Any controls used by the Authorised Person (Electrical) to identify and confirm isolation and ensure supply to the customer's installation is not inadvertently re-energised shall comply with Electrical Safety Regulation 2013 Section 14 and 15 requirements.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

NOTE: The Authorised Person (Electrical) will not be permitted to replace a blown LV service fuse(s) after loss of supply to a customer's installation or to alter the Electricity Entity overhead LV services. The low voltage pole top service fuse shall only be removed by use of an approved, in test, insulated telescopic pole device while standing at ground level and wearing class 00 insulating gloves. At no time is it permissible for an Authorised Person (Electrical) to climb or work aloft on the Electricity Entity's poles or assets unless approved by the Electricity Entity.

5.2. Operating Plant

It can be extremely difficult for operating plant operators to see overhead lines and to judge distances from them. Contact with overhead lines can pose a risk of grounding live conductors and electrocution.



In many cases the likelihood of damage or injury can be reduced by setting up and operating the machinery well clear of overhead electric lines.

In situations where operating plant is operated by an Authorised Person or Instructed Person without a Safety Observer or another safe system, the exclusion zone requirements (refer Section 4) for an Untrained Person applies (refer Electrical Safety Regulation 2013 Schedule 2 or Electrical Safety Code of Practice 2010 Working Near Overhead and Underground Electric Lines).

For an Authorised or Instructed Person and their Operating Plant to approach overhead electric lines closer than the exclusion zone distances for an Untrained Person, a Safety Observer or another safe system shall be used. Refer to the Electrical Safety Regulation 2013 and the Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines for exclusion zone distances for Authorised and Instructed Persons operating plant with a Safety Observer or another safe system.

Where a Safety Observer is used, the Safety Observer shall:

- Be trained to perform the role
- Not be required to carry out any other duties at the time, **and**
- Not be required to observe more than one item of plant operating at a time, **and**
- Be in attendance at all times when the item of plant is operating.

Other control measures for operating plant may include, but are not restricted to:

- Constructing physical barriers or height warning indicators either side of the overhead electric line that are lower than the maximum travel height permissible without encroaching within the exclusion zone of the overhead electric line;
- Applying appropriate signage at least 8 to 10 m either side of overhead electric lines;
- Arrange for visual indicators such as Tiger Tails or aerial markers to fitted to the overhead electric lines – only erected by the Electricity Entity (tiger tails are only permitted on LV mains);
- Ground barriers, where appropriate;
- Informing workers of required work practices;

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

- Ensuring operators are aware of the height and reach of their machinery in both stowed and working positions;
- Lowering all machinery to the transport position when relocating;
- Providing workers with maps or diagrams showing the location of underground and overhead electric lines; and
- Where possible, directing work away from overhead electric lines not towards them.

5.3. Scaffolding Requirements

The following information provided is for guidance only and shall be read in conjunction with the Electrical Safety Regulation 2013, Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines and AS/NZS 4576:1995: Guidelines for Scaffolding.

Requirements shall be complied with where scaffolding is required to be erected within 4 m of nearby overhead electric lines:

- The scaffolding shall not be erected before contacting and obtaining Safety Advice from the Electricity Entity.
- Erection of scaffolding to comply with requirements of AS/NZS 4576:1995: Guidelines for Scaffolding.
- The scaffolding can be either:
 - nonconductive material scaffolding; or
 - metallic scaffolding with solid nonconductive barriers (with no gaps, holes or cuts) securely fixed to the outside and/or top of the scaffolding to prevent encroachment within exclusion zones or contact with the energised mains.
- Where scaffolding is erected within 3 m of nearby overhead electric lines:
 - It shall be fitted with fully enclosed non-conductive solid barriers to prevent encroachment within exclusion zones or contact with the energised mains fully enclosed.
 - The person required to erect and/or disassemble scaffolding as well as the required solid barrier affixed to the scaffolding should be an Authorised Person (approved in writing by the Electricity Entity - refer requirements of Section 4.4 of this Reference).
 - A Safety Observer shall be used during performance of this work where there is a risk of encroachment within 3 m of nearby energised overhead electric lines for voltages up to 33 kV. Additional requirements may apply for voltage levels above 33 kV, contact the Electricity Entity for consultation.
 - Alternatively, consideration should be given to the de-energisation of the nearby electric lines where possible for the duration of this work. Additional requirements may apply for voltage levels above 33 kV, contact the Electricity Entity for consultation.
 - Comply with the horizontal and vertical statutory clearances from overhead electric lines as set out in Electrical Safety Regulation 2013 Schedule 4;
 - Persons are not permitted to go outside of or climb on top of the solid barrier fixed on the outside and/or top of the scaffolding.

Where an insulated low voltage service line passes through the scaffolding, it should either be de-energised for duration of work or be fully enclosed by non-conductive material (e.g. form ply).

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

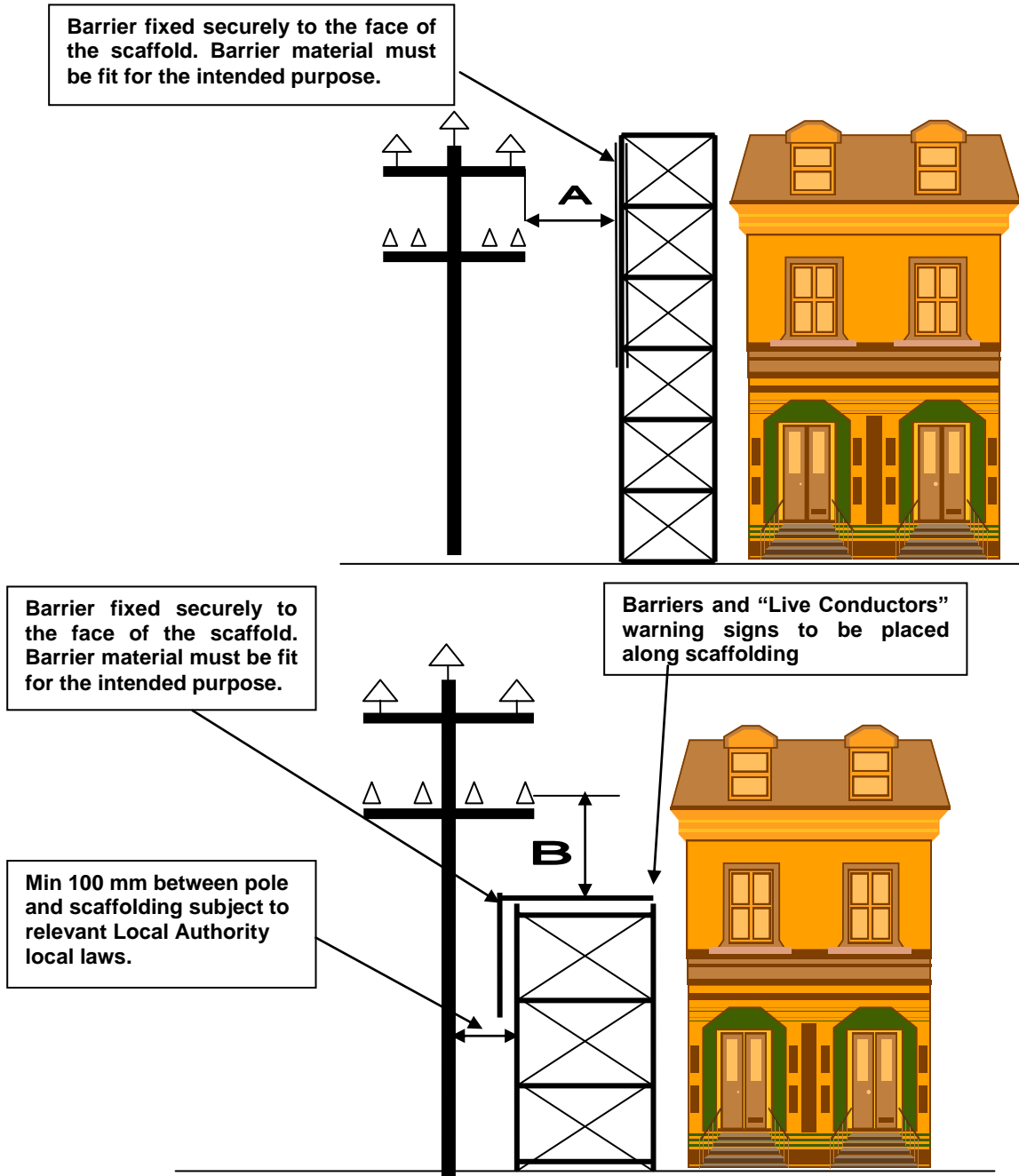
Minimum statutory clearances from nearby overhead electric lines for scaffolding erected with barriers affixed

Voltage Level	Horizontal Distance "A" (in m)	Vertical Distance "B" (in m)
Low voltage conductors (uninsulated)	1.5	2.7
Low voltage conductors (insulated) – these distances can only be applied after the integrity of the insulation has been verified by Electricity Entity	0.3	0.6
Above LV and up to 33 kV (uninsulated)	1.5	3.0
Above LV and up to 33 kV (insulated)	Contact Electricity Entity for consultation.	
Above 33 kV (uninsulated)	Additional requirements may apply for voltage levels above 33 kV, contact the Electricity Entity for consultation.	

NOTE: Dimensions "A" and "B" is between the scaffolding and the closest conductor of the overhead electric line. Dimension B is also taken from the lowest part of the mid span sag adjacent to the scaffolding.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines



Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

5.4. High Load transport under Overhead Electric Lines

Any person or company transporting a High Load (load in excess of 4.6 m high) under overhead electric lines must comply with Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines is required to submit a Notification to Transport High Load form to the relevant Electricity Entity of the intended route and details of the high load involved. Before any person or company can transport a high load (load in excess of 4.6 m high), authorisation to travel must be received in writing from the Electricity Entity. Refer details below to contact the Electricity Entity for high load enquiries or to submit Notification to Transport High Load form:

Energex:

- **Email:** custserve@energex.com.au
- **Website:** www.energex.com.au
- **Phone:** Energex Contact Centre on 13 12 53 (8am to 5:30pm, Monday to Friday)

Ergon Energy:

- **Email:** Highload2@ergon.com.au
- **Website:** www.ergon.com.au
- **Phone:** (07) 4932 7566 (8am to 4:30pm, Monday to Friday)

5.5. Additional Details and Fact Sheets on Electricity Entity Requirements

Additional details and Fact Sheets on Electricity Entity requirements for working near overhead electric lines are located on the following internet sites

Energex: <https://www.energex.com.au/safety/safety-around-the-network>

Ergon Energy: <https://www.ergon.com.au/network/safety/business-safety/the-outdoor-workplace/working-near-powerlines>

Working Near Overhead and Underground Electric Lines

6. UNDERGROUND ELECTRICAL ASSETS

6.1. Responsibilities When Working in the Vicinity of Electricity Entity Underground Electrical Assets

Everyone has a legal “Duty of Care” that must be observed when working in the vicinity of underground electrical assets which includes underground cables, conduits and other associated underground equipment. When discharging this “Duty of Care” in relation to Electricity Entity underground electrical assets, the following points must be considered:

1. It is the responsibility of the architect, consulting Engineer, developer, and principal contractor in the project planning stages to design for minimal impact and protection of Electricity Entity underground electrical assets. The Electricity Entity will provide plans on request via DBYD showing the presence of the underground electrical assets to assist at this design stage.
2. It is the constructor’s responsibility to:
 - (a) Anticipate and request DBYD plans of Electricity Entity underground electrical assets for a particular location at a reasonable time before earthworks begins.
 - (b) Visually locate Electricity Entity underground electrical assets by use of an electronic cable locator followed by careful non-mechanical excavation (potholing using hydrovac or hand tools) when earthworks activities may damage or interfere with Electricity Entity plant.
 - (c) After completion of steps (a) and (b) above, if there is a risk of the Electricity Entity underground electrical assets being damaged or its structural integrity compromised by your planned earthworks activities, contact the Electricity Entity (General Enquiries phone number – refer page 3) for further advice.

A constructor may include but not limited to designer, project manager, installer, contractor, civil contractor.

3. The alignments and boundaries contained within DBYD plans and maps will sometimes differ from present alignments and boundaries “on the ground”. Accordingly, in every case, the constructor should obtain confirmation of the actual position of Electricity Entity cables and pipelines under the road ways by non-mechanical excavation (potholing using hydrovac or hand tools) when earthworks activities may damage or interfere with Electricity Entity underground electrical assets. In no case should the constructor rely on statements of third parties in relation to the position of Electricity Entity underground electrical assets.

6.2. Conditions of Supply of Information

- Plans and details of Electricity Entity underground electrical assets provided by DBYD are only current for 4 weeks from the date of dispatch and should not be referred to after this period, if you go past this time, please re-apply to DBYD as underground services may have been updated.
- The Electricity Entity agrees to provide plans if an Electricity Entity underground electrical assets location request is made to Dial Before You Dig (DBYD) by phone on Freecall “1100”, online at www.1100.com.au or the free iPhone Application, only on the basis that at least 2 business day notice is given and the DBYD applicant agrees to the terms of this agreement.



Working Near Overhead and Underground Electric Lines

Note that the Electricity Entity only provides information on underground electrical assets it owns. Contact the owner of any privately owned underground electrical assets for details of their assets located at site.

- The Electricity Entity retains copyright of all plans and details provided in connection to your request.
- DBYD plans or other details are provided for the use of the DBYD applicant, its servants, or agents, for the sole purpose of the applicant's responsibilities in relation to the Electricity Entity underground electrical assets and shall not be used for any other purpose.
- DBYD plans are diagrams only and indicate the presence of Electricity Entity underground electrical assets in the general vicinity of the geographical area shown. Exact ground cover and alignments cannot be given with any certainty; as such levels can change over time.
- On receipt of DBYD plans and before commencing excavation work or similar activities near Electricity Entity's underground electrical assets, carefully locate this plant first to avoid damage.
- The Electricity Entity, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and of details so supplied to the DBYD applicant, its servants or agents, and the DBYD applicant agrees to indemnify the Electricity Entity against any claim or demand for any such loss or damage to the DBYD applicant, its servants, or agents or to any third party.
- The constructor is responsible for all damages to the Electricity Entity underground electrical assets when work commences prior to obtaining DBYD plans, or at any time after that for failure to follow agreed instructions contained in this document or any other advice provided by the Electricity Entity.
- By undertaking any work, you acknowledge that the Electricity Entity reserves all rights to recover compensation for loss or damage to the Electricity Entity caused by interference or damage, including consequential loss and damage to its cable network, or other property.
- Be aware that some underground conduits may contain asbestos. Refer to "Code of Practice for the Management and Control of Asbestos in Workplace [NOHSC: 2018 (2005)]" for guidance.

6.3. When Working in the Vicinity of Electricity Entity Underground Electrical Assets, You Must Observe the Following Conditions

6.3.1 Records

The first step before any excavation commences is to obtain DBYD plans of Electricity Entity underground electrical assets in the vicinity of the work. For new work, records should be obtained during the planning and design stage. The records provided by DBYD must be made available to all relevant work groups on site. Where underground electrical asset information is transferred to plans for the proposed work, care must be exercised that important detail is not lost in the process.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

6.3.2 Location of underground electrical assets

Examining the records is not sufficient, as reference points may change from the time of installation. Records must also be physically proven when working in close proximity to underground electrical assets. The exact location of underground electrical assets likely to be affected shall be confirmed by use of an electronic cable locator followed by careful non mechanical excavation to the level of concrete slabs or conduits. Non mechanical excavation (potholing using hydrovac or hand tools) must be used in advance of excavators. In any case, where doubt exists with respect to interpretation of cable records, contact the Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

- If during excavation, cables or conduits are damaged:
 - call Electricity Entity (Emergencies phone number – refer page 3) to report damaged cables or conduits.
 - treat cables as if alive, post a person to keep all others clear of the excavation until the Electricity Entity crew attend to make safe.
- If **unknown** cables or conduits (e.g. not shown on issued DBYD plans) are located during excavation:
 - call Electricity Entity (Emergencies phone number – refer page 1) to report.
 - treat cables as if alive, post a person to keep all others clear of the excavation until the Electricity Entity crew attend to make safe.
- If the constructor is unable to locate Electricity Entity underground electrical assets within 2.5 m of nominal plan locations, they should contact the Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

6.3.3 Remote or On-Site Cable Location conducted by Electricity Entity

This service shall only be provided at Electricity Entity's discretion:

- The Electricity Entity may provide this site visit only when underground cables (33 kV or above) are present.
- Due to remote locations where external cable locator or hydro vac service providers are not readily available, Electricity Entity may attend site and assist with cable location (fees may apply for this service).
- The Electricity Entity may provide either remote over the phone or on-site cable location advice to assist in the location of Electricity Entity underground electrical assets, including how to visually locate and protect the plant when excavating.
- Where the Electricity Entity provides on-site cable location advice, any markings provided for the purpose of identifying cable location are for general guidance only, and the constructor is still responsible for non-mechanical excavation (potholing using hydrovac or hand tools) to visually locate Electricity Entity underground electrical assets.
- If the constructor is unable to locate Electricity Entity underground electrical assets within 2.5 m of nominal plan locations, they should contact Electricity Entity (General Enquiries phone number - refer page 3) to request further advice.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

6.3.4 *Electrical Cables*

Electricity Entity cables may have warning covers e.g.:

1. Clay paving bricks or tiles marked “ Electricity” or similar (also unmarked)
2. Concrete or PVC cover slabs
3. PVC, asbestos or fibro conduit, fibre reinforced concrete, iron or steel pipe
4. Concrete encased PVC or steel pipe
5. Thin plastic marker tape
6. Large pipes housing multiple ducts
7. Multiple duct systems, including earthenware or concrete

NOTE: Some cables are known to be buried without covers.

6.3.5 *Separation from Electricity Entity underground electrical assets*

If location plans or visual location of Electricity Entity underground electrical assets by non-mechanical excavation (potholing using hydrovac or hand tools) reveals that the location of Electricity Entity underground electrical assets is situated where the developer or constructor plans to work, then contact the Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

The developer or constructor shall ensure that minimum separation distance from Electricity Entity underground electrical assets (refer Minimum Separation Requirements tables below) is complied with when installing, altering or repairing other underground services located in the vicinity.

If the Electricity Entity relocation or protection works are part of the agreed solution, then payment to the Electricity Entity for the cost of this work shall be the responsibility of the principal developer or constructor. The Electricity Entity will provide an estimate for work on receipt of the developer's or constructor's order number before work proceeds.

It will be necessary for the developer or constructor to provide the Electricity Entity with a written Work Method Statement for all works in the vicinity of, or involving Electricity Entity underground electrical assets. This Work Method Statement should form part of the tendering documentation and work instruction. All Work Method Statements shall be submitted to the Electricity Entity prior to the commencement of site earthworks.

Electricity Entity Requirements: Working Near Overhead and Underground Electric Lines

Minimum Separation Requirements

Underground Services Running Parallel with Electricity Entity Electrical Assets (Minimum Separation required in mm)							
Voltage Level	Gas	Communication or TV	Water		Sanitary drainage		Storm Water
			≤DN 200	>DN200	≤DN 200	>DN 200	
LV	300 (Ergon)	100	500	*1000	500	1000	500
HV	250 (Energex)	300					

*Contact your local utility/council to obtain specific separation distances

Underground Services Crossing Electricity Entity Electrical Assets (Minimum Separation required in mm)					
Voltage Level	Gas	Communication or TV	Water	Sanitary drainage	Storm Water
LV	100	100	300	300	100
HV					

Notes:

- These clearances are each Electricity Entity's minimum requirements, additional separation may be required by the Service Owner. The greater of the separation requirements shall apply.
- Where the above tables does not list a separation requirement for a particular underground service type, the following minimum separation from electricity entity electrical assets shall apply:
 - LV = 100 mm
 - HV = 300 mm
- Compliance with these minimum separation requirements does not guarantee that issues such as Earth Potential Rise (EPR) and Low Frequency Induction (LFI) are managed, where these issues need to be managed, advice will need to be sought from an RPEQ Engineer
- All separation distances are measured from the exterior surface of the conduit / cable not centrelines or inner wall surfaces.

6.4. Additional Details and Fact Sheets on Electricity Entity Requirements

Additional details and Fact Sheets on Electricity Entity requirements for working near underground electrical assets are located on the following internet site.

Energex: <https://www.energex.com.au/safety/safety-around-the-network>

Ergon Energy: <https://www.ergon.com.au/network/safety/business-safety/the-outdoor-workplace/working-near-powerlines>

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

7. EXCAVATION

7.1. Excavating near Poles and Stay Wires

The following requirements are to be complied with to minimise the risk of compromising the structural integrity of the Electricity Entity poles and stay foundations when excavation or trenching work is performed nearby that could result in the failure of one or more poles and grounding of supported electric lines.

Excavation and trenching work undertaken by a person, worker or PCBU in the vicinity of poles and stay foundations shall:

- only be commenced after requirements of Section 6 have been complied with for any underground electrical assets located within the work site.
- upon completion of excavation and site earthworks not restrict the Electricity Entity vehicle access to pole site for purpose of carrying out maintenance activities.
- comply with exclusion zones as detailed in the Electrical Safety Code of Practice 2010 - Working Near Overhead and Underground Electric Lines.
- not be attempted:
 - within 5 m (horizontal distance) of **pole stays** where the excavation depth is greater than 250 mm before contacting the Electricity Entity to determine requirements.
 - within 5 m (horizontal distance) of Electricity Entity poles with earth leads or cables running down into the ground before contacting the Electricity Entity to determine requirements.
 - within “Do Not Disturb” zone of pole prior to a certified engineering assessment having been completed by a Registered Professional Engineer Queensland, and then reviewed and approved by the Electricity Entity before proceeding with work. Approval by the Electricity Entity shall not relieve the PCBU of its duties to perform the work in a safe and proper manner and in accordance with all applicable legislation.
 - if the soil is exceedingly wet (saturated) or there is more than minimal wind loading unless additional pole support is provided in accordance with certified engineering assessment and approved by Electricity Entity.
 - when a severe weather event is occurring or expected (e.g. severe weather warning has been issued by Bureau of Meteorology).
- be backfilled as soon as possible (within same day where pole is required to be supported) soil mechanically compacted in layers of 150 mm and all rock and vegetable material excluded from the backfill.
- be backfilled and pole stabilised before removal of additional support required by a certified engineering assessment are permitted to be removed.

The PCBU shall be responsible for arrangement and costs of required certified engineering assessments, approvals by other regulatory bodies (eg councils, Main Roads pipeline owners, telecomm owns) and installation, maintenance and removal of associated pole support.

Pole support equipment (where required in accordance with certified engineering assessment) shall be:

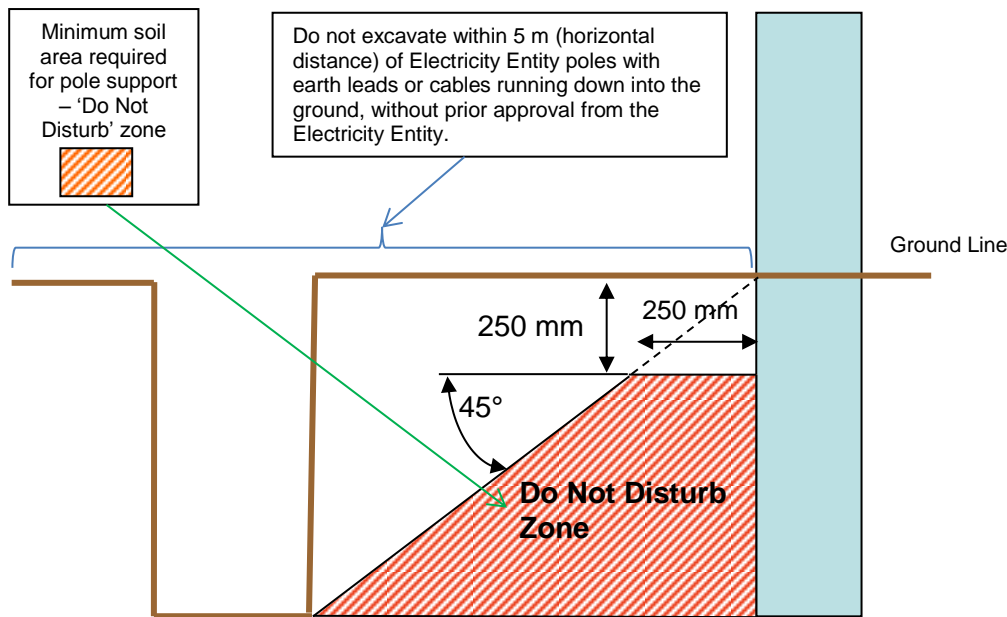
- only attached and removed by persons approved by the Electricity Entity.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

- used to restrain both the pole head and foot to maintain pole stability during nearby excavation work.
- set up and positioned to maximise support effectiveness and minimise impact on traffic, pedestrian, excavation and machinery at site; and maintain exclusion zone from overhead lines. If insufficient clearance exists to maintain exclusion zone to pole support equipment, arrangements may be required for de-energising the electric line.

Figure 1- Do Not Disturb Zone requirements when excavating near poles



Maximum Trench Depth	Minimum Distance from pole without pole support
Not more than 0.25 m (250 mm)	Can trench or hand dig (where cables and leads exist) right up to pole
1.0 m	1.0 m
1.5 m	1.5 m
2.0 m	2.0 m
2.5 m	2.5 m
3.0 m	3.0 m

7.1.1 Certified Engineering Assessment

Where required to be provided by the PCBU, a Certified Engineering Assessment shall:

- Ensure the stability of the Electricity Entity poles and foundations is maintained during and as a result of excavation work completed within the 'Do Not Disturb' zone.
- Include detailed design drawing of pole support method.
- Be completed and certified by a Registered Professional Engineer Queensland.
- Consider and address the following key points as a minimum:
 - Pole loading (vertical and lateral) including line deviation angles, direction of lean (towards or away from resultant loading)

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

- Direction of pole lean.
- Pole inspection (conducted to meet the Electricity Entity's requirements at customer cost)
- Pole foundation depth
- Proximity of excavation in relation to pole
- Soil condition
- Proposed shoring methods as well as installation and removal process
- Duration and staging of work
- Requirement to independently support pole during work
- Proximity of existing adjacent underground services and excavations
- Proposed backfilling and reinstatement method
- Monitoring and engineering / geotechnical supervision during excavation work progress
- Other equipment attached to pole (e.g. underground cables, transformer, ACR, ABS.) must be taken into consideration and in some circumstances will prevent the pole being supported.

7.2. Excavating Near Underground Electrical Assets

For all work within 2.5 m of nominal location, the constructor is required to non-mechanical excavation (potholing using hydrovac or hand tools) and expose the underground electrical assets, hence proving its exact location before earthworks can commence.

7.2.1 Excavating Parallel to Underground Electrical Assets

If excavation work is parallel to the Electricity Entity underground electrical cables, then non mechanical excavation (potholing using hydrovac or hand tools) at least every 4 m is required to establish the location of all cables, hence confirming nominal locations before work can commence. If an excavation exceeds the depth of the cables and it is likely that that the covers or bedding material around the cables/pipes will move causing Electricity Entity cables or conduits to be unsupported, contact Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

NOTE: Be aware that cable depths and directions may change suddenly along the route.

7.2.2 Excavating Across Underground Electrical Assets

Refer Minimum Separation Requirements table in Section 6.3.5 of this document for distances that shall be maintained to prevent inadvertent contact with or damage to underground electrical assets. If the width or depth of excavation is such that the Electricity Entity cables will be unsupported, contact Electricity Entity (General Enquiries phone number - refer page 3) for further advice . In no case shall a cable cover be removed without approval. A cable cover may only be replaced under the supervision of an Electricity Entity officer. Protective cover strips when removed must be replaced under Electricity Entity supervision. Under no circumstances shall protective cover strips be omitted to achieve the minimum separation distance required between Electricity Entity cables and other underground services.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

7.2.3 Heavy Machinery Operation Over Underground Electrical Assets

Where heavy “crawler” or “vibration” type machinery is operated over the top of cables, a minimum cover of 450 mm to the cable protective cover must be maintained. Alternatively, subject to a Certified Engineering Assessment, use load bearing protection whilst the machinery is in operation.

7.2.4 Directional Boring Near Underground Electrical Assets

When boring parallel to cables, it is essential that trial holes are carefully dug using non mechanical excavation (pot holing using hydrovac or hand tools) at regular intervals to prove the actual location of the conduits/cables before using boring machinery. Where it is required to bore across the line of cables/conduits, the actual location of the cables/conduits shall be proven by non-mechanical excavation (pot holing using hydrovac or hand tools). A trench shall be excavated 1 m from the side of the cables where the auger will approach to ensure a minimum clearance of 500 mm from cables/conduits can be maintained.

7.2.5 Hydro Vac Operation

When operating hydro vac equipment to excavate in vicinity of underground electrical assets (cables/conduits):

- Fitted with:
 - nonconductive (neoprene rubber or equivalent) vacuum (suction) hose.
 - oscillating nozzle on pressure wand with water pressure adjusted to not exceeding 2000 psi.
- Maintain a minimum distance of 200 mm between end of pressure wand and underground electrical assets. DO NOT insert the pressure wand jet directly into subsoil.
- Ensure pressure wand is not directly aimed at underground electrical assets (cables / conduits).

7.3. Blasting

Explosives must not be used within 5 m of cables/conduits, unless an engineering report is provided indicating that no damage will be sustained. Clearances shall be obtained from the Electricity Entity for use of explosives in the vicinity of cables/conduits. Contact Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

The Electricity Entity will accept the level of 25 mm / sec as a peak component particle velocity upper limit as defined in AS 2187.2 Appendix J for blasting operations in the vicinity of these power lines.

Electric line insulators and conductors are particularly susceptible to damage from fly rock and adequate control measure including the use of blast mats shall be used to manage this. Contact Electricity Entity for consultation and application.

8. REPORTING DAMAGE CAUSED TO OVERHEAD OR UNDERGROUND ELECTRIC LINES

Any damage caused to the Electricity Entity overhead electric lines, poles, stays, underground cables, conduits and pipes must be reported no matter how insignificant the damage appears to be. Even very minor damage to cable protective coverings can lead to eventual failure of cables through corrosion of metal sheaths and moisture ingress.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

All work in the vicinity of damaged overhead or underground electric lines shall cease and the area be made safe and vacated until clearance to continue earthworks has been obtained from the Electricity Entity. Call Electricity Entity (Emergencies phone number – refer page 3).

9. INFRASTRUCTURE NEAR ELECTRIC LINES

9.1. Easements and Wayleaves

This information, whilst not a legal document, has been developed to assist the community in answering some commonly asked questions about our easements and wayleaves, and briefly outlines what you can do where land is affected by an easement or where consent to installing electrical infrastructure has been given.

9.1.1 *What is an Electricity Easement?*

An electricity easement is the authority held by the Electricity Entity to use your land near overhead and underground electric lines and substations (electrical assets). Electricity Entity holds this authority for your own safety and to allow employees access to electrical assets at all times. Whilst it will depend on the terms of the particular grant of easement, electrical easements generally give the Electricity Entity the right to access, maintain, repair, rebuild and to restrict development within a defined area.

The easement, which is registered on the property's title, contains a plan showing the dimensions of the easement and its location on the property together with the rights and restrictions over the easement area. The Department of Natural Resources and Mines <http://www.nrm.qld.gov.au/> or your solicitor will be able to provide this information. Easements may also exist for telephone lines, water and sewage mains and natural gas supply lines.

9.1.2 *Why are easements necessary?*

Easements are also created to allow the Electricity Entity clear, 24 hour access to the electric lines. It is important to keep the easement clear at all times so regular maintenance, line upgrades, damage or technical faults can be attended to immediately to provide a safe and reliable supply of electricity. Interference with Electricity Entity's rights and electrical equipment may compromise safety of the public and the occupiers of the property. Therefore, it is essential that Electricity Entity's rights are understood and observed.

9.1.3 *How do I know if there are easements on my property?*

Contact your solicitor or The Department of Natural Resources and Mines to obtain a Title Search that shows all registered easements on the property.

9.1.4 *Who owns the land the easement is on?*

The ownership of that land encumbered with the easement remains with the property owner.

9.1.5 *How does an easement affect what I can do with my property?*

An easement controls what you can build, what size trees you can plant and what outdoor activities you can carry out in the easement area.

An easement affects the use of the property by limiting the development that can be undertaken within the easement area. The exact rights granted to an Electricity Entity under an electricity easement will depend on the wording used in the grant of easement. Property owners and occupiers should also be aware that an Electricity Entity has the right of access to land to undertake certain works (including reading meters and disconnecting supply). These rights of

Working Near Overhead and Underground Electric Lines

access are granted by Queensland legislation not the easement and so may not be registered on the property's title and therefore may not be revealed in a Title Search.

9.1.6 Who is responsible for maintenance of easement area?

You must provide a continuous, unobstructed area along the full length of the easement to allow an Electricity Entity access to electric lines, transformers, underground cables and other equipment at all times. A width of 4.5 m is typically required for the safe passage of vehicles and heavy plant.

You must NOT place obstructions in the easement within 5 m of any electric lines, transformer, power pole, equipment or supporting wire.

Maintenance of the easement area is generally the responsibility of the property owner and/or occupier, however, complying with regulatory and safety requirements associated with Electricity Entity's electrical assets within the easement area is the responsibility of the Electricity Entity.

9.1.7 What type of maintenance work does Electricity Entity undertake on easements?

To enable Electricity Entity to construct, maintain, repair and rebuild electric lines on some properties, access roads and tracks are required on or adjacent to the easement area. As required, Electricity Entity is able to construct access tracks, retain the right of use of these tracks and maintain them to a suitable level to permit access for its vehicles. Where gates are installed within the easement area, an Electricity Entity lock may be required to enable continual access along the easement corridor.

In addition, periodic vegetation management works are also undertaken by Electricity Entity to ensure that a specified minimum clearance between vegetation and the electric lines is maintained.

Where possible, property owners will be contacted prior to easement maintenance and vegetation works commencing.

9.1.8 Where consent (Wayleave) to installing Electricity Entity infrastructure has been given

Much of Electricity Entity's above ground electricity network is constructed without easements. Instead, the consent of the owner of the affected land is obtained and the electrical infrastructure is installed. Historically this consent has been in the form of a document known as a Wayleave.

This consent (or Wayleave) is a document evidencing the agreement from a particular owner, but it is not registered on the title of the land like an easement.

Once consent is obtained from an owner, Queensland legislation (the Electricity Act 1994) says that the consent of all future owners to the electrical infrastructure is not required.

Queensland legislation grants Electricity Entity rights to access, maintain, repair and replace electrical assets installed with consent.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

9.2. Contact Electricity Entity when planning construction work near electric lines

When planning and before commencement (regardless of whether or not local council approval is required), it is essential to confirm that the proposed construction work (e.g. building, structure, sign, crane, scaffold) does not breach the minimum statutory clearance distances that must be maintained from nearby Electricity Entity overhead or underground electric lines. Refer Electrical Safety Regulation 2013, Schedule 4 and 5 for information on statutory clearance distances that must be complied with.

It is extremely dangerous and potentially life threatening to allow anything to come in close proximity to the conductors of an electric line.

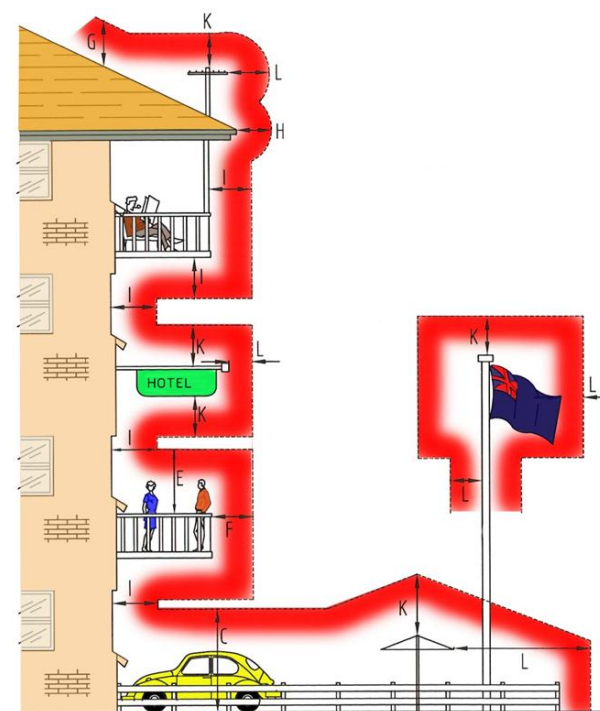
Where it is necessary for an Electricity Entity to relocate electric lines due to statutory clearance breach caused by construction work performed nearby, the Electricity Entity is entitled to recover costs from the PCBU, property owner or occupier who caused the breach. Refer Electrical Safety Regulation 2013, Section 209 Building or adding to structure near electric lines.

Although it is preferred that the area around Electricity Entity electrical assets (including within an Easement area) is free of development, the following examples provide property owners and occupiers with an indication of what type of development is acceptable and what is not.

NOTE: Do not assume that your local council approval is sufficient approval for you to proceed with your work. The local council may not check whether or not your proposed construction work will comply with the Electricity Entity's statutory clearance requirements from nearby overhead electric lines.

9.3. What clearances must be maintained once construction work is completed?

Electrical Safety Regulation 2013, Schedule 4 - Clearance of overhead electric lines and Schedule 5 – Clearance of low voltage overhead service lines detail the statutory clearances that must be maintained from overhead electric lines for completed buildings and structures. These statutory clearances will need to be taken into consideration during the planning phase of determining the location for a building or structure. The table below sets out the minimum statutory clearances required for voltage levels up to 33 kV. Additional requirements may apply for voltage levels above 33 kV, contact the Electricity Entity for consultation.



Where the Electricity Entity has identified a breach of statutory clearance resulting from erection of a building or structure, the statutory breach will be reportable to the Electrical Safety Office as a Dangerous Electrical Event and any costs incurred in subsequent remedial work to achieve required statutory clearances may be recovered from the person or company who caused the breach of statutory clearance.

Electricity Entity Requirements:



Working Near Overhead and Underground Electric Lines

CODE	LOCATION	DIRECTION	INSULATED CABLE (ABC) (Note 1)	BARE	MORE THAN 1000 VOLTS BUT NOT MORE THAN 33kV
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MINIMUM CLEARANCE FROM ROADS, GROUND, OR BOUNDARIES

A	Crossing the carriageway, roadway	VERTICALLY	5.5m	5.5m	6.7m
A1	Designated "Over Dimension Routes"	VERTICALLY	7.0m	7.0m	7.5m
B	At other positions, footpath	VERTICALLY	5.5m	5.5m	5.5m
C	Other than roads but trafficable	VERTICALLY	5.5m	5.5m	5.5m
C1	Areas totally inaccessible to traffic or mobile machinery	VERTICALLY	4.5m	4.5m	4.5m
D	Cuttings, embankments, easement boundaries	HORIZONTALLY	1.5m	1.5m	2.1m
X	Real Property Boundaries	HORIZONTALLY	0.0m	0.0m	0.0m

MINIMUM CLEARANCE FROM STRUCTURES AND BUILDINGS

E F	Unroofed terraces, balconies, sun-decks, paved areas, etc, subject to pedestrian traffic only. A hand rail or wall surrounding such an area and on which a person may stand. (Note)	VERTICALLY AND HORIZONTALLY (Note)	2.7m 1.2m	3.7m 1.5m	4.6m 2.1m
G H	Roofs or similar structures not used for traffic or resort but on which a person may stand. A parapet surrounding such a roof and on which a person may stand. (Note)	VERTICALLY AND HORIZONTALLY (Note)	2.7m 0.9m	3.7m 1.5m	3.7m 2.1m
I	Covered places of traffic or resort such as windows which are capable of being opened, roofed open verandahs and covered balconies.	IN ANY DIRECTION	1.2m	1.5m	2.1m
J	Blank walls, windows which cannot be opened. (Note)	HORIZONTALLY	0.6m	1.5m	1.5m
K L	Other structures not normally accessible to persons. (Note)	VERTICALLY HORIZONTALLY (Note)	0.6m 0.3m	2.7m 1.5m	3.0m 1.5m

NOTE:

The vertical clearance and the horizontal clearance specified shall be maintained.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

The following list of examples is not exhaustive and it may be necessary to contact the Electricity Entity if doubt exists as to what is permitted around electricity assets.

<i>What is PERMITTED around Electricity Entity overhead or underground electric lines</i>	<i>What is NOT PERMITTED around Electricity Entity overhead or underground electric lines</i>
<ul style="list-style-type: none"> ✓ Erection of fences to a maximum height of 2.4 m is generally acceptable, provided they do not affect access to, and work on, the poles, electric lines and/or cables. Trees, shrubs and plants should be located clear of vehicle access. <u>Note:</u> Maximum Growth Height of 3 m. ✓ Clothes hoists and barbecues should be located clear of the vehicle access way. <u>Note:</u> Maximum Height 2.5 m. ✓ Installation of underground utility services, such as low voltage electricity, gas, telephone and water, is generally acceptable, subject to clearances from Electricity Entity poles and supporting structures, and underground electric mains. ✓ Excavating, filling and altering of nearby land may be acceptable but full details need to be provided to the Electricity Entity for assessment. ✓ Vehicles, mobile plant and equipment within the easement area need to maintain the minimum statutory clearances distances from overhead electric lines. Normal farming, grazing and other agricultural activities can be carried out. Take care when ploughing or operating mobile machinery or irrigation equipment near Electricity Entity's equipment. ✓ Parking of vehicles, trucks, trailers, etc. is normally allowed. <u>Note:</u> Maximum Load and Aerial Height of 4 m. Barriers of an approved design (e.g. bollards) may be required to protect poles from vehicle contact damage. Heavy vehicle or operating plant crossings may need a protective concrete cover to ensure underground cables are not damaged. 	<ul style="list-style-type: none"> ✗ Build houses, sheds, garages or other large structures. Building of roofed/ unroofed verandahs, swimming pools and pergolas are generally not acceptable. ✗ Flying kites or model aircraft within the easement. ✗ Driving fence posts or stakes into ground within easements where there is underground cabling. ✗ Storing liquids such as petrol, diesel fuel, or any flammable or combustible material that will burn. ✗ Installing lighting poles. ✗ Stockpiling soil or garbage within the easement. ✗ Planting trees in large quantities that could create a fire hazard or that grow in excess of the approved maximum height of 3 m. ✗ Storing or using explosives. ✗ Residing in or occupying any caravan or mobile home within an easement. ✗ Placing obstructions within the vicinity of of any Electricity Entity assets (e.g. power pole, overhead electric line, equipment or pole stay) that impede access to or work on these assets.

Electricity Entity Requirements:

Working Near Overhead and Underground Electric Lines

9.4. What about Electric and Magnetic Fields?

The Electricity Entity operates its electric lines within the current guidelines set by the National Health and Medical Research Council for exposure to 50/60 hertz electric and magnetic fields (EMF) and is mindful of some community concern about such fields and health. Contact the Electricity Entity (General Enquiries phone number - refer page 3). Alternatively, further information can be sourced from:

Energy Networks Association (ENA) brochure - "Electric and Magnetic Fields - What We Know", January 2014

http://www.ena.asn.au/sites/default/files/emf-what-we-know-jan-2014-final_1_1.pdf

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) brochure - "Electricity and Health", May 2011

http://www.arpansa.gov.au/RadiationProtection/Factsheets/is_electricity.cfm