



# Standard Operating Procedure

Procedure Name:	Operations in the vicinity of powerlines		
Author:	Steve Smallman		
Approved By:	Albie Wheeler		
Version	1.0	With Effect from	1/1/12
Review Date	1/1/13	Document Number	SOP 17
Risk Assessment	Name	RA SOP 17 power lines	
	Date	6/8/12	

## 1. Aim of procedure

To identify and formalise the risks and control processes involved in operating near powerlines.

## 2. Scope of application

Wheeler Cranes operators, dogmen and technical supervisors when operating in any location where boom, crane, counterweight, rope, load or access devices may come in contact with an electrical energy source.

## 3. References

AS 2550.1 clause 6.20 Operation near aerial conductors (overhead powerlines)

AS2550.5 clause 6.3 Operation near aerial conductors (overhead powerlines)

Workcover NSW Code of Practice: Work near overhead power lines

Ausgrid NS209


## 4. Pre-requisites

Crane Drivers undertaking this work must hold:

- A National Certificate of Competency/High Risk Work Licence for the size and type of crane used
- A vehicle driver's licence of a suitable class for the crane used.
- A current accreditation issued by a recognised body for work in close proximity to powerlines
- A Wheeler Cranes Verification of Competency as a crane driver

Dogmen undertaking this work must hold a National Certificate of Competency/High Risk Work Licence as a dogman, and where supplied by Wheeler Cranes a Wheeler Cranes Verification of Competency.

Spotters employed in this work must hold current accreditation issued by a recognised body for work in close proximity to powerlines.

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## 5. Procedure

There is no clear and definitive advice available as to what rules apply to minimum approach distances:

- AS2550.5 indicates ordinary person approach distances of 6.4/10m dependant on voltage.
- The Workcover Code of Practice indicates ordinary person distances of 3/6/8m again voltage dependant
- Ausgrid also offers ordinary person distances of 3/6/8m

However,

- Workcover offers accredited person distances of 0.5 to 4.6m.
- Ausgrid uses distances of 1.0 to 4.5m for accredited persons.

As the network operator, and approving authority for work as nominated in both the AS and the COP, we have elected to apply and work to the Ausgrid standards.

Therefore, the following standards will apply:

### Approach Distances

#### Ordinary Person

Someone without the additional training course, i.e. any employee of Wheeler Cranes.

Table A-0 (NS209)

Nominal Voltage	Minimum separation distance
Up to 132KV	3m
132-330KV	6m
330KV +	8

#### Accredited Person

A person who has undertaken the training course for close proximity work (formerly known as 5099 course). These distances only apply when the close proximity provisions have been applied.

Nominal Voltage	Minimum separation distance
Up to 1KV	1m
1+-11KV	1.2m
11+-66KV	1.5m
66+-132KV	2m
132+-220KV	3m
220+-330KV	3.5

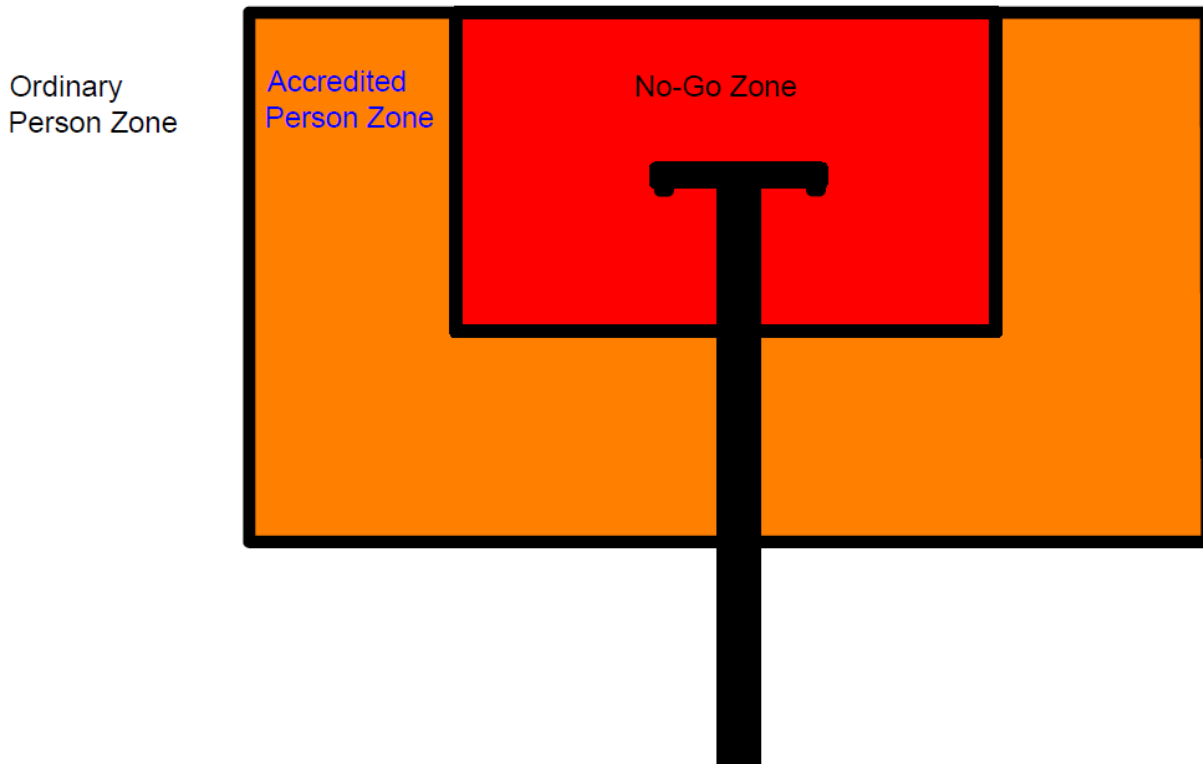


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330+KV	4.5
Rail wires (1500VDC)	1m

Diagrammatically, these requirements can be represented as:



Nominal Voltage	Not closer to any conductor than	
	Accredited person zone	No go zone
Up to 1KV	3m	1m
1+-11KV	3m	1.2m
11+-66KV	3m	1.5m
66+-132KV	3m	2m
132+-220KV	6m	3m
220+-330KV	6m	3.5
330+KV	8m	4.5
Rail wires (1500VDC)	3m	1m

Be aware of SWING and of SAG.

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Conductors can swing sideways in the wind, and will sag in the heat of the day. What happens in the morning may not be right all day.

## Pre-lift Planning

At the time of site inspections by Technical Supervisors, an assessment is to be made of the location and approach distances to overhead power lines or other electrical energy sources. If during the site inspection, it is noted that an approach closer than the ordinary person zone is required:

- the network operator must be informed
- the allocator must be informed during the course of making the booking

## Accredited persons

Wheeler Cranes will maintain a pool of persons, crane operators and dogmen who have been trained and hold accreditation as accredited persons.

Training will be conducted at the Local Government Training Institute, Thornton, and monitored using the Wheeler Cranes induction management database.


Where the crane, the boom, counterweight, load or rope nears the approach distance (boundary of ordinary person zone and accredited person zone), the operator must cease work until an assessment is undertaken of the work, and if the crane/load etc will impinge on the accredited person zone, the work will cease until:

- At least one accredited safety observer (spotter) has been appointed and is in place, **and**
- An accredited crane operator is driving the crane.

## Spotter

An accredited spotter must

- be appointed
- have their accreditation on their person while acting as a spotter
- be instructed in their duties
- have no other duties than observe the crane and power lines
- not observe more than one crane at a time
- not be located in any work basket or ewp that is being observed

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- have clear, unobstructed vision of the powerline and plant
- be able to immediately and effectively communicate with the crane operator or other personnel if required
- be able to enforce their authority to halt work during the close approach
- know the voltage of the powerline
- discuss the clearance distances with the crane operator and any other personnel

The spotters only role is to warn the crane operator of approach to the no-go zone in sufficient time to permit the crane operator from preventing the crane/load etc impinging on the no-go zone.

Under the network standards (NS209), a spotter is not required if limiting devices are set and are adequate to prevent the crane/load from impinging on the clearance distances. Wheeler Cranes will **ALWAYS** use at least one spotter.

## Crane Operators

Where the crane/boom/load/rope impinges or is likely to impinge on the Accredited Person Zone, the driver of the crane must hold accreditation.


Crane Operators will install and test safety limiters where available.

Crane Operators will establish visual cues to identify where and when their movement is likely to imping on the no-go zone.

## Contact with the crane or load

While the crane, boom or load is operating within the accredited person zone, no person may come into contact with the crane or load except:

- The operator may operate insulated control, while wearing insulated gloves, the voltage does not exceed 1kv and the operator stands on an “equipotential metallic mat”.
- Load can be adjusted or re-oriented using a wooden pole and the voltage does not exceed 1kv.
- Using a non-conducting tail rope to control the movement of the load.
- Rigging or de-rigging the load and hook.
- Adjusting or packing of outriggers, but only while the load and crane are stationary.
- The crane and its load are effectively insulated
- The voltage does not exceed 1kv and insulating gloves are worn.

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## Network Operator notification

Ausgrid does not provide a notification form or format within their network standard.

The required information is:

- Date:
- Time work commences:
- Expected duration:
- Location of work:
- Nature of work:

Notification can be lodged at [cbolton@ausgrid.com.au](mailto:cbolton@ausgrid.com.au) fax 02 4951 9450, mobile 0411 430 104.

Work should not proceed until approval is provided by Ausgrid and any conditions imposed in that approval are complied with.

## Notices to be carried on the crane

Cranes engaged in carrying out work in the Accredited Person Zone must have:

- A copy of Ausgrid's Network Standard 209
- Clearance notices as detailed in Appendix A and Appendix B of NS209 (See attached file SOP17 Notice)

## Other types of conductor

In addition to overhead wires, these provisions will apply when in proximity to conductors used to power overhead cranes and equipment inside buildings, bus bars, or any other live sources of electrical energy.

## 6. Approval



Albie Wheeler  
 Managing Director  
 13/9/12

