Government of South Australia
Department for Transport, Energy and Infrastructure

Erection of Structures Near Powerlines

Approval of the Technical Regulator

Operational Instruction 20.17

Erection of Structures Near Powerlines - 20.17

AMENDMENT RECORD

Version	*Page(s)*	*Date*	*Amendment Description*	*Init*
Draft		07/09/05	Draft (Prep by P Cops)	PC
Ver 2	All	18/07/08	Format Changes Only	DW
Ver 2	All	18/02/11	Added Signature (out of draft)	NS

This document has been prepared by the Traffic and Access Standards Section. It has been approved and authorised for use by Transport SA and its authorised agents by:

Manager, Traffic and Access Standards
18 /02 /2011

For information regarding the interpretation of this document please contact:
Statewide Traffic and Operations Unit, Department for Transport, Energy and Infrastructure
Telephone: (08) 8343 2166 Facsimile: (08) 8343 2630

For additional copies or to confirm the current status of this document please contact:
Traffic and Access Standards Section, Department for Transport, Energy and Infrastructure
Telephone: (08) 8343 2849 Facsimile: (08) 8343 2630
email: david.widdrington@sa.gov.au

Contents

1. Scope & Application

This Operational Instruction describes the minimum clearances required between power lines and structures such as signs, traffic signals and street lighting poles and the procedure to be followed to obtain the approval of the Technical Regulator to install such structures where these clearances cannot be achieved.

This Operational Instruction does not cover the clearances required for working in the vicinity of power lines.

For working safely near overhead powerlines refer to the Office of the Technical Regulator (OTR) website at http://energy.sa.gov.au/__data/assets/pdf_file/0006/20976/WorkingSafelyNearPowerlines.pdf

For operating near powerlines, refer to the OTR website at http://energy.sa.gov.au/publications

2. Definitions

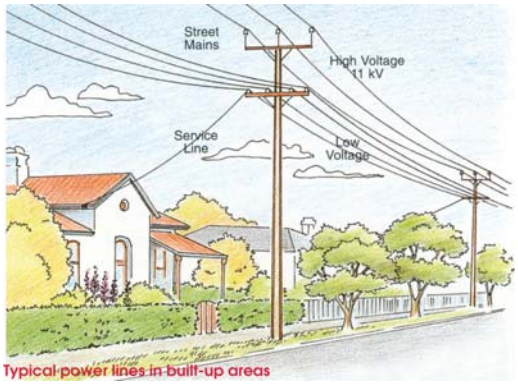
kV	kilovolt (1kV = 1,000 volts)
conductor	a wire or cable which carries electricity

3. Background

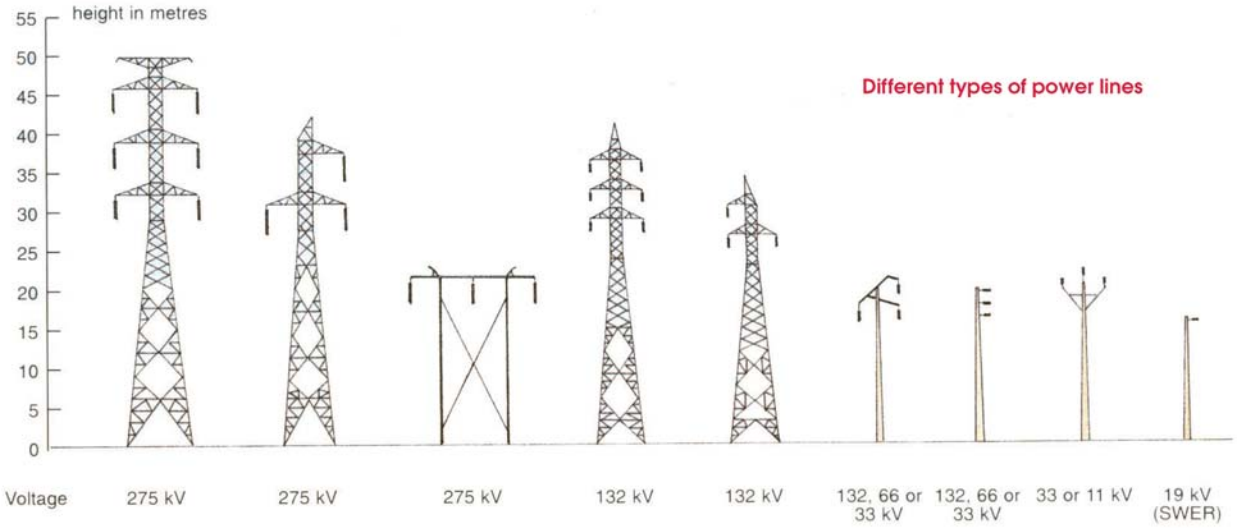
The minimum safe clearance between power lines and structures depends on the voltage of the power line and the type of conductor. The different types of power lines can usually be recognised from their construction and from the number of disk insulators that separate the power line from the power pole or tower. As a Rule of thumb, one disk insulator indicates 11kV.

3.1 Types of Power Lines

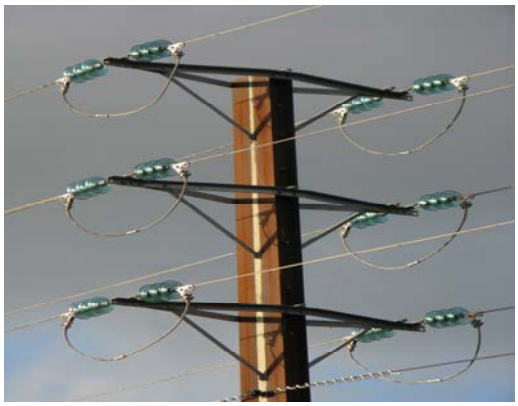
As a guide, the typical support structures associated with different voltage levels are shown in these figures. **Whenever in doubt about the voltage level or type of insulation, contact the electricity supplier (ETSA Utilities) before proceeding with any works. ETSA Builders and Contractors line is 1300 650 014.**



Typical power lines in built-up areas



20.17



Typical disk insulator of a 33kV powerlines (3 disks)

3.2 Minimum Safe Clearances

The minimum safe clearances of signs and other structures not accessible to persons are given in the following table:

Power Line Voltage	Insulation	Minimum Horizontal Clearance	Minimum Vertical Clearance
275kV	Not Applicable	25 metres*	Not Applicable
132kV (except single pole lines)	Not Applicable	20 metres*	Not Applicable
132kV (single pole lines)	Not Applicable	15 metres*	Not Applicable
66kV	Not Applicable	4.5 metres*	5.5 metres
1kV – 33kV	Bare or covered	2.5 metres†	4.7 metres
Above 1kV	Insulated with earthed screen	0.1 metres†	0.1 metres
Above 1kV	Insulated without earthed screen	0.6 metres†	2.7 metres
Below 1kV	Insulated	0.1 metres†	0.1 metres
Below 1kV	Bare	0.6 metres†	2.7 metres

* Clearance either side of centre of pole
† Clearance from the nearest conductor

Note that the above clearances are for structures not accessible to persons. As the clearances increase substantially if a person is able to access the structure, approval of the Technical Regulator shall be sought for the erection of any sign in the vicinity of power lines where the sign incorporates a platform for maintenance purposes.

3.3 Standard Signs

For the majority of suburban locations, the powerlines are at a minimum height of 6.5 metres for low voltage and 8.5 metres for 11kV or 33kV or higher. A street sign with an installed height of 3.8 metres or less would be compliant with the Electricity (General) Regulations 1997 and can be erected without the Technical Regulator's approval, if conducted in a safe manner. If however the powerlines are lower then the above general minimum height, closer examination and consultation with the Technical Regulator should be undertaken.

4. Procedure

Whenever it is proposed to install a structure within the safe minimum clearances given in section **Error! Reference source not found.**, the written approval of the Technical Regulator shall be obtained before any site work begins.

4.1 Information required by Technical Regulator

The following information is required by the Technical Regulator in order to make a proper assessment of the situation prior to granting approval.

4.1.1 Details of the Powerlines

- The type of powerlines including voltages present at location of proposed sign. ETSA Utilities has this information on file for most areas or are generally happy to arrange for a local officer to check on site. Alternatively, the Office of the Technical Regulator can identify power line voltages from photographs that clearly show the pole top and insulators. The voltage of the power lines must be determined before submitting a formal application to the Technical Regulator.
- Arrangement of powerlines – photographs will suffice.
- Height of the powerlines at the location of the proposed structure and the ambient temperature at the time of measurement. Note – where conductors are installed at varying levels, heights are to be provided for each level.

4.1.2 Details of the Proposed Structure

- Location(s) of structure(s) including photos and descriptions e.g. opposite/adjacent property number, left or right hand side, north/ south/east or west of structure etc.
- Position of the structure relative to power lines e.g. directly beneath or the horizontal offset from the nearest conductor.
- Dimension(s) of the structure(s) and ground clearance(s) to the structure(s) (provide TES drawing containing sign dimensions) and therefore the subsequent clearances between structure and overhead powerlines.

  The Technical Regulator will clearly identify any conditions imposed when granting approval.

4.2 Submission of Applications

Applications for approval should be e-mailed to the OTR at dtei.otr@sa.gov.au. Alternatively, applications may be sent to the following address:

The Office of the Technical Regulator
Level 8
11 Waymonth Street
ADELAIDE 5000

Attention: Principal Engineer

The following procedures are to be followed:

- Applicant to e-mail or send required information as per section 4.1 to the OTR.
- The OTR will e-mail the applicant giving approval and any conditions for the works.
- The OTR will confirm approval with a signed letter.

5. Additional information

Further information and assistance can be obtained by contacting the following:

Peter Morris (Principal Engineer)
8226 5521
peter.morris@sa.gov.au

Rebecca Schulz (Engineer)
8226 5851
rebecca.schulz@sa.gov.au

Reinhard Struve (Engineer)
8226 5879
reinhard.struve@sa.gov.au

6. References

1. Guidelines: DTEI – Powerline Clearance Declaration Guide
2. Guidelines: DTEI – Building Safely near Overhead Powerlines
3. Guidelines: DTEI – Working Safely near Overhead Powerlines
4. South Australia Legislation, Electricity (General) Regulations 1997.