SOUTH AUSTRALIA

ELECTRICITY (GENERAL) REGULATIONS 1997

SUMMARY OF PROVISIONS

PART 1
PRELIMINARY

PART 2
LICENSING OF ELECTRICITY ENTITIES

PART 3
ELECTRICITY ENTITIES' POWERS AND DUTIES

PART 4
SAFETY AND TECHNICAL ISSUES

DIVISION 1—SAFETY AND TECHNICAL REQUIREMENTS

DIVISION 2—CERTAIN ELECTRICAL INSTALLATION WORK

DIVISION 3—SAFEGUARDING PERSONS WORKING WITH CONDUCTORS OR ELECTRICAL EQUIPMENT

SUBDIVISION 1—GENERAL

SUBDIVISION 2—WORK ON OR NEAR LIVE ELECTRIC CONDUCTORS OR ELECTRICAL EQUIPMENT

SCHEDULE 5

Requirements for Earthing and Electrical Protection Systems
(Regulation 16)

SCHEDULE 6

Clearance from Aerial Lines
(Regulations 40, 41 and 44)

SCHEDULE 7

Forms for Warrants
(Regulation 46)

REGULATIONS UNDER THE ELECTRICITY ACT 1997

Electricity (General) Regulations 1997

being

No. 161 of 1997: *Gaz*. 26 June 1997, p. 3144[1]
(Corrigendum 17 July 1997, p. 154)

[1] Came into operation 1 July 1997: reg. 2.

N.B. These amendments effected to these regulations by Regulation No. 189 of 1998 have not been brought into operation.

PART 1
PRELIMINARY

Citation

1. These regulations may be cited as the *Electricity (General) Regulations 1997*.

Commencement

2. These regulations will come into operation on 1 July 1997.

Revocation

3. The *Electricity (General) Regulations 1996* (see *Gazette* 19 December 1996 p. 1990) are revoked.

Interpretation

4. (1) In these regulations, unless the contrary intention appears—

"**Act**" means the *Electricity Act 1996*;

"**active**", in relation to a conductor, means—

(a) any one of the conductors of a power system which is maintained at a difference of potential from—

(i) the neutral conductor; or

(ii) an earthed conductor; or

(b) if a power system does not include a neutral or earthed conductor—all conductors;

"**aerial line**" means a powerline placed above the ground and in the open air, but does not include bus bars or any direct current conductors used as traction trolley wires;

"**AS**" or "**Australian Standard**" means an Australian Standard, as published by the Standards Association of Australia from time to time;

"**circuit**" means any number of conductors connected together for the purpose of carrying current;

"**conductor**" means a wire, or other form of conducting material suitable for carrying current, other than wires, cables or other metallic parts directly used in converting electrical energy into another form of energy;

"**high voltage**" or "**HV**", in relation to electricity, means electricity at a voltage exceeding 1 000 volts alternating current ("**ac**") or 1 500 volts direct current ("**dc**");

"**insulated**" means contained within a material or medium (including air) in order to limit the flow of current between conductors at different potentials;

"**insulated conductor**" means a conductor that—

(a) is wholly covered with insulating material in accordance with the appropriate requirements of the relevant Approval and Test specification of an Australian Standard; or

(b) is of a type approved by the Technical Regulator;

"**live**"—a term applied to an object when a difference of potential exists or would exist between it and earth under normal conditions of operation, including all metal connected to the neutral conductor of the supply system even if such neutral is earthed at the source of supply; but the following are not to be taken to be live:

(a) earthing conductors; and

(b) copper sheaths of Mineral Insulated Metal Sheathed ("**MIMS**") cables used in Earthed Sheathed Return ("**ESR**") systems; and

(c) neutral busbars or links in installations where the multiple earthed neutral system is employed;

"**low voltage**" or "**LV**" has the same meaning as in AS 3000;

"**multiple earthed neutral system**" or "**MEN system**" means a system of earthing in which the parts of an electrical installation required by AS 3000 to be earthed—

(a) are connected to the general mass of earth; and

(b) are connected within the installation to the neutral conductor of the supply system;

"**nominal system voltage**" means the voltage by which a system of supply is designated and to which certain operating characteristics of that system of supply are referred in accordance with AS 2926;

"**operator**", in relation to a transmission or distribution network, any electricity infrastructure or any electrical installation, means the person who operates, owns or controls the network, infrastructure or installation;

"**other cable system**" means—

(a) telecommunication and control cables; or

(b) aerial earthed cables; or

(c) electrolysis drainage cables,

attached to, or in the vicinity of, structures supporting cables under the control of an electricity entity;

"**service line**" means the terminating span of a powerline—

(a) constructed or designed or ordinarily used for the supply of electricity at low voltage; and

(b) through which electricity is or is intended to be supplied by an electricity entity to a customer from the transmission or distribution network of the entity;

"**substation**" means any premises or place (including a switchyard) in which high voltage supply is converted, controlled or transformed;

"**U**", in relation to voltage of electricity, means Nominal System Voltage;

"**underground line**" means a powerline which is placed under the ground, including those portions which are erected above the ground.

(2) If—

(a) it is a requirement of these regulations that a standard, code, guide or other document, as published from time to time, be complied with; and

(b) a variation to the standard, code, guide or other document is published,

it is sufficient compliance with the requirement during the period of 6 months from publication of the variation if the standard, code, guide or other document, as last published without that variation, is complied with.

(3) A provision contained in a standard, code, guide or other document that is required to be complied with under these regulations is not, despite that requirement, to be taken to be a mandatory provision for the purposes of these regulations unless it is expressed in mandatory terms.

(4) In subregulations (2) and (3), a reference to a standard, code, guide or other document includes a reference to a part of a standard, code, guide or other document.

Interpretation—definition of retailing

5. For the purposes of the definition of the term in section 4 of the Act, **retailing** of electricity does not include the following activities:

(a) a customer selling electricity on to another customer if the other customer does not pay a higher price for the electricity than would have been paid had that other customer purchased the electricity directly from the person who supplied the electricity to the first customer;

(b) a customer charging for the supply of electricity if the charge forms an unspecified part of rent or charges for the occupation or use of premises;

(c) a holder of a licence authorising the operation of an electricity generating plant charging a fee for supplying electricity to another person who is the holder of a licence authorising the operation of a transmission or distribution network.

PART 2
LICENSING OF ELECTRICITY ENTITIES

Exemptions

6. (1) A person who carries on the operation of an electricity generating plant is not required to be licensed under the Act if—

(a) the generator has a rated nameplate output of 100 kVA or less; or

(b) the person does not supply electricity for reward to or by means of a transmission or distribution network; or

(c) the electricity is generated only for the person's own consumption.

(2) A person who carries on the operation of a transmission or distribution network is not required to be licensed under the Act if the network transmits or distributes electricity only for that person's own consumption or for the consumption of others who, in pursuance of rights deriving (whether immediately or otherwise) from that person, occupy or use land or premises served by the network.

(3) However, a person exempted under subregulation (1) or (2) from the requirement to be licensed in respect of the operation of a plant or network must comply with any requirement imposed by or under the Act or these regulations as if it were an electricity entity licensed under the Act in respect of the operation of the plant or network.

Licence fees and returns

7. (1) For the purposes of section 20(2) of the Act, the licence fee, or the first instalment of the licence fee, (as the case may require) must be paid before the anniversary in each year of the day on which the licence was issued.

(2) For the purposes of section 20(2) of the Act, an annual return must be lodged—

(a) before the last day of the tenth complete month after the licence was issued;

(b) thereafter, before the last day of the month in each year that is the same month as the month in which the first return was required to be lodged.

(3) For the purposes of section 20(5) of the Act, the penalty for default—

(a) for failing to pay a licence fee, or an instalment of a licence fee, is 10% per annum of the outstanding amount calculated daily on a cumulative basis;

(b) for failing to lodge an annual return is $500.

PART 3
ELECTRICITY ENTITIES' POWERS AND DUTIES

Carrying out certain work on public land

8. (1) For the purposes of section 47(5) of the Act, prior notice and agreement are not required under section 47(3) of the Act for—

(a) work in an emergency; or

(b) maintenance or repairs of existing electricity infrastructure, including any necessary excavation or removal of obstructions.

(2) For the purposes of section 47(6) of the Act, agreement is not required under section 47(3) of the Act for—

(a) erection of pad-mount transformers and switching cubicles in connection with the installation of underground lines; or

(b) installation or relocation of electricity infrastructure as a part of road reconstruction; or

(c) alterations or additions to existing electricity infrastructure not involving any significant enlargement of the area of public land occupied by the infrastructure or any significant change in appearance; or

(d) relocation of a pole or supporting structure in an existing electricity cable system.

PART 4
SAFETY AND TECHNICAL ISSUES

DIVISION 1—SAFETY AND TECHNICAL REQUIREMENTS

Purpose of Division

9. The requirements contained in this Division and related Schedules are safety or technical requirements for the purposes of sections 59 and 60 of the Act.

Quality of electricity supply

10. Electricity infrastructure must be designed, installed, operated and maintained so that—

(a) the voltage at a customer's point of supply is generally as set out in AS 2926 and the voltage fluctuations that occur at a customer's point of supply are generally contained within the limits set out in AS 2279; and

(b) the harmonic voltage distortion at a customer's point of supply generally does not exceed the values set out in Tables 1, 2 and 3 in Schedule 1; and

(c) the voltage unbalance factor in three phase supplies generally does not exceed the values set out in Table 4 in Schedule 1.

General requirements for electricity infrastructure

11. (1) No circuit in electricity infrastructure may be allowed to remain in service unless every part of the circuit functions in the proper manner for circuits of that class.

(2) Each active conductor of a high voltage powerline or other high voltage equipment must be protected by an automatic disconnecting device.

(3) Metal components of electricity infrastructure not normally conducting electricity that may become energised must be connected to earth.

(4) Electricity infrastructure must be adequately protected against earth faults.

Aerial lines

12. (1) Aerial lines (including service lines) must be designed, installed, operated and maintained to be safe for the electrical service conditions and the physical environment in which they will operate.

(2) Without limiting the effect of subregulation (1), line construction in a bushfire risk area must be suitable for the levels of hazard in the area.

(3) Schedule 2 applies in relation to aerial lines (including service lines).

Underground lines

13. (1) Underground lines (including service lines) must be designed, installed, operated and maintained to be safe for the electrical service conditions and the physical environment in which they will operate.

(2) Schedule 3 applies in relation to underground lines (including service lines).

Powerlines other than aerial or underground lines

14. (1) Powerlines, other than aerial lines or underground lines, must be designed, installed, operated and maintained to be safe for the electrical service conditions and the physical environment in which they will operate.

(2) Schedule 3 (other than clauses 6, 7 and 9) applies in relation to such powerlines in the same way as to underground lines.

Substations

15. (1) Substations must be designed, installed, operated and maintained to be safe for the electrical service conditions and the physical environment in which they will operate.

(2) Schedule 4 applies in relation to substations.

Earthing and electrical protection systems

16. (1) Earthing and electrical protection systems must be designed, installed, operated and maintained to safely manage abnormal electricity network conditions likely to significantly increase the risk of personal injury or significant property damage.

(2) Schedule 5 applies in relation to earthing and electrical protection systems.

Electrical installations

17. Electrical installations must comply with AS 3000 and any other Australian Standard called up by AS 3000.

DIVISION 2—CERTAIN ELECTRICAL INSTALLATION WORK

Certain electrical installation work and certificates of compliance

18. (1) For the purposes of section 61(1) of the Act, the person who carries out work on an electrical installation or proposed electrical installation that is work of any kind referred to in AS 3000 or another Australian Standard called up by AS 3000 must—

(a) carry out the work and examine and test the installation—

(i) in accordance with AS 3000 and any Australian Standard called up by or under AS 3000 and so that the installation complies with any other technical and safety requirements under these regulations; and

(ii) in accordance with any requirements specified by the operator of the transmission or distribution network to which the installation is or is to be connected; and

(b) when satisfied that the work has been carried out in accordance with AS 3000 and any such other standards and requirements, complete a certificate of compliance in a form approved by the Technical Regulator to that effect.

(2) The person must—

(a) prior to energisation of the work or a part of the work (other than energisation for testing purposes), provide a copy of the completed certificate of compliance to—

(i) the person on whose behalf the work was carried out; and

(ii) if the work is associated with the making of a connection to a transmission or distribution network, the operator of the network; and

(b) keep a copy of the completed certificate of compliance for at least 5 years after the completion of the work.

(3) The provisions of this regulation relating to certificates of compliance do not apply in relation to work on an electrical installation or proposed electrical installation in specified premises if the Technical Regulator has given an exemption under this regulation in respect of the premises and the conditions of the exemption are complied with.

(4) The Technical Regulator may, on application or on the Technical Regulator's own initiative, give an exemption as referred to in subregulation (3) subject to such conditions as the Technical Regulator thinks fit, including conditions as to the keeping of records relating to electrical work in the premises.

DIVISION 3—SAFEGUARDING PERSONS WORKING WITH CONDUCTORS OR ELECTRICAL EQUIPMENT

SUBDIVISION 1—GENERAL

Basic safety principle

19. Persons engaging or preparing to engage in work on or near electricity infrastructure or an electrical installation must treat exposed conductors as live until they are—

(a) isolated from all sources of electricity supply and proved to be de-energised; and

(b) if they are high voltage conductors—earthed.

Compliance with provisions of Division

20. (1) Persons carrying out work on or near electricity infrastructure or an electrical installation must comply with the provisions of this Division.

(2) Electricity infrastructure operators, electrical installation operators and employers must ensure compliance with the provisions of this Division with respect to their employees and contractors.

SUBDIVISION 2—WORK ON OR NEAR LIVE ELECTRIC CONDUCTORS OR ELECTRICAL EQUIPMENT

Application of Subdivision

21. This Subdivision applies to work carried out—

(a) in proximity to exposed live high or low voltage conductors or exposed live parts of high or low voltage electrical equipment; or

(b) by direct contact with exposed live high or low voltage conductors or exposed live parts of high or low voltage electrical equipment; or

(c) on de-energised exposed conductors or exposed parts of electrical equipment if there is a possibility of the conductors or parts becoming live,

unless the work is necessary to avoid a possible danger to life or serious personal injury.

Safe work practices

22. All reasonable steps must be taken to ensure safety in work to which this Subdivision applies through—

(a) the provision of suitable protection from adjacent live electrical conductors or adjacent live parts of electrical equipment; and

(b) the use of insulated tools and equipment; and

(c) the use of equipment and plant designed and made in accordance with recognised electricity industry practice; and

(d) the use of safe work practices.

Work involving danger of direct contact with live conductors, etc.

23. In the case of work involving a danger of accidental direct contact with exposed live conductors or exposed live parts of electrical equipment—

(a) the work must only be carried out by a person who is competent and qualified to carry out the work; and

(b) except where the contrary is shown by reference to generally accepted industry practices or the particular circumstances of the case, it will be presumed that safe work practices require the person to carry out the work with a competent assistant suitably trained in the work and—

(i) in resuscitation; and

(ii) in releasing persons from live electrical apparatus; and

(iii) if appropriate, in rescuing persons from poles, structures, elevated work platforms or confined spaces.

SUBDIVISION 3—WORK ON OR NEAR EXPOSED HIGH VOLTAGE CONDUCTORS OR ELECTRICAL EQUIPMENT

Work above exposed high voltage conductors, etc.

24. Work must not be carried out and equipment must not be positioned above exposed high voltage conductors or exposed parts of high voltage electrical equipment unless the work or positioning of the equipment is authorised in writing by the operator of the electricity infrastructure or electrical installation concerned.

Work on or near exposed high voltage conductors, etc.

25. Work must not be carried out by direct contact with, or in proximity to, exposed high voltage conductors or exposed parts of high voltage electrical equipment except as authorised under this Subdivision.

Work by direct contact with exposed high voltage conductors, etc.

26. (1) Work may be carried out by direct contact if the exposed high voltage conductors or exposed parts of high voltage electrical equipment are—

(a) isolated, and shown by testing to be isolated, from all sources of electricity supply; and

(b) earthed.

(2) If any such conductor or equipment cannot be directly contacted to prove isolation from all sources of electricity supply, it is sufficient if—

(a) written instructions have been given for the isolation of the conductor or equipment from all sources of electricity supply; and

(b) the conductor or equipment is earthed by a lockable earthing switch designed to be safely operated if the high voltage conductor or equipment has not been isolated from all sources of supply.

Work in proximity to exposed high voltage conductors, etc.

27. (1) Work may be carried out in proximity to exposed high voltage conductors or exposed parts of high voltage electrical equipment if—

(a) it is carried out—

(i) by a person who is suitably trained and qualified for such work beyond the approach limits set out in this regulation for such persons; or

(ii) by a person who has been instructed in the identification of high and low voltage overhead conductors and the safety aspects of work near live powerlines beyond the approach limits set out in this regulation for such persons; and

(b) it is carried out beyond the approach limits set out in this regulation that are applicable in the circumstances.

(2) However, a person may work within the approach limits if—

(a) the work can be carried out safely in any of the following circumstances:

(i) there are installed suitable barriers or earthed metal shields between the person carrying out the work and the conductors or electrical equipment;

(ii) the work to be carried out is testing of equipment and the equipment is designed so the approach limits cannot be complied with;

(iii) the work to be carried out is earthing of the conductors or equipment and is carried out after the exposed high voltage conductors have been isolated and proved to be de-energised; and

(b) written instructions have been given, either generally or in a particular case, about the work and the precautions to be taken.

(3) For the purposes of this regulation, the approach limits for a person, including an article of clothing worn by a person, or a conductive object held or carried by the person, are set out below—

Voltage of conductor or equipment	**Approach limit A**	**Approach limit B**	**Approach limit C**	
		(Distance in metres)		
			(i)	(ii)
Not more than 1000V	0	0.3	3.0	1.0
More than 1000V but not more than 11kV	0.3	0.6	3.0	2.0
More than 11kV but not more than 33kV	0.45	0.9	3.0	3.0
66kV	0.7	1.4	6.0	6.0
132kV	1.2	2.4	6.0	6.0
275kV	2.0	4.0	6.0	6.0

where—

(a) approach limit A applies to a person suitably qualified and trained to work in proximity to exposed high voltage conductors or exposed parts of high voltage electrical equipment;

(b) approach limit B applies to a person who has been instructed in the identification of high and low voltage overhead conductors and the safety aspects of work near live powerlines;

(c) approach limit C(i) applies to a person using power operated tools;

(d) approach limit C(ii) applies to a person using manually operated tools.

Live line work

28. (1) Electrical work on exposed live high voltage conductors or exposed live parts of electrical equipment ("**live line work**") must not be carried out unless authorised in writing by the operator of the electricity infrastructure or electrical installation on which the work will be carried out.

(2) An electricity infrastructure operator or electrical installation operator may authorise a person to carry out live line work if satisfied the person—

(a) has successfully finished a course of training approved by the Technical Regulator and provided by a training provider approved by the Technical Regulator; and

(b) has been assessed by the training provider as competent to carry out the work.

(3) The voltage of the powerlines on which live line work is carried out must be as stated by the relevant operator in the authorisation.

(4) The relevant operator must take reasonable steps to satisfy itself as to the continuing competency of a person authorised by the operator to carry out live line work.

SUBDIVISION 4—MISCELLANEOUS

Rescue and resuscitation training

29. Persons required to carry out, or help in carrying out, electrical work must be suitably trained in rescue and resuscitation in accordance with recognised practices in the electricity industry.

Suitability of testing instruments

30. If tests are required to be performed on electricity infrastructure, an electrical installation or safety equipment under the Act—

(a) the test instruments used must be designed for and capable of correctly performing the required tests; and

(b) each testing instrument must be tested and calibrated to ensure it is in proper working order; and

(c) the records of tests performed must be kept for at least 2 years.

DIVISION 4—REPORTING OF ACCIDENTS

Reporting of accidents

31. For the purposes of section 63 of the Act, if an accident happens that involves electric shock caused by the operation or condition of electricity infrastructure or an electrical installation, a report must be made to the Technical Regulator of the details of the accident—

(a) in the case of a death resulting from the accident—immediately by telephone;

(b) in the case of a person requiring medical assistance resulting from the accident—within 1 working day of the accident;

(c) in any other case—within 10 working days of the accident.

PART 5
CATHODIC PROTECTION SYSTEMS

Application of Part

32. (1) This Part does not apply to a cathodic protection system—

(a) installed on any floating mobile structure, fishing equipment, fixed off shore structure (not connected with land above sea level) or internal surface of any apparatus, equipment or structure; or

(b) using only galvanic anodes.

Tests before operating cathodic protection system

33. (1) The person who owns or operates a cathodic protection system must ensure that it does not adversely affect the integrity or safety of any electricity infrastructure or supply system through corrosion.

(2) The person who owns or operates a cathodic protection system that has an anode immersed in water or a marine environment must, within 90 days before starting to operate the system, perform tests to ensure that the potential difference between any 2 accessible points spaced 1 metre apart in the water or marine environment is not more than 3V when the system is energised.

PART 6
MISCELLANEOUS

Testing measurement of consumption of electricity

34. (1) An electricity entity authorised by a licence to carry on retailing of electricity must ensure that a meter used to measure a customer's consumption of electricity is accurate within the allowable margin of accuracy and does not show systematic bias with that margin of accuracy.

(2) For the purposes of this regulation, the allowable margin of accuracy in relation to a customer of an electricity entity is—

(a) plus or minus 2 per cent; or

(b) unless the entity is prevented from doing so by a condition of the entity's licence—some other allowable margin agreed by the entity with the customer.

(3) The electricity entity must, if requested by a customer, test the accuracy of a meter installed on the customer's premises for the purposes of measuring the customer's consumption of electricity.

(4) The electricity entity may—

(a) require the request to be made in writing; and

(b) before testing—

(i) require the customer to pay a charge for electricity or another amount owing to the entity by the customer for supplying electricity; and

(ii) if the testing is carried out within 10 working days of the request at a time determined by the entity, require the customer to pay a test fee not exceeding $48 for each meter to be tested; and

(iii) if the customer requires the testing to be carried out at a particular time, require the customer to pay a test fee not exceeding $48 for each meter to be tested plus an additional fee determined on a basis approved by the Technical Regulator to compensate for travelling time.

(5) The electricity entity must advise the customer when and where the test is to be carried out and the customer, or a person nominated by the customer, may be present during the test.

(6) A meter must be tested where it is installed, except in the case of a meter used for metering high voltages or current transformers which may be taken away for testing at a place determined by the electricity entity.

(7) The electricity entity must, as soon as practicable after a test on a meter has been conducted, inform the customer of the test results (and do so by writing if the customer so requires).

(8) If the test shows the meter is not registering within the allowable margin of accuracy, the electricity entity must—

(a) inform the customer of the extent to which the registration falls outside the allowable margin; and

(b) refund the test fee to the customer; and

(c) adjust the previous relevant electricity accounts to reflect the actual or a reasonable estimation of the electricity supplied.

Register of underground lines

35. (1) An electricity entity authorised to operate a transmission or distribution network must keep and maintain a register describing the nature and location of each line installed underground that is under the control of the entity.

(2) The transmission or distribution network operator in an area must be notified by any other electricity entity of the nature and location of any line installed underground in the area by that other entity and that information must be recorded in the register kept by the network operator under subregulation (1).

(3) Information contained in the register must be made available on request by a member of the public during normal business hours.

Protection of underground lines

36. A person must not—

(a) place or maintain, or cause to be placed or maintained, any corrosive, abrasive, heavy or deleterious material or substance above any underground line; or

(b) make any opening in the ground surface that may endanger any underground line; or

(c) remove, tamper with or cover any underground line marker,

without the written authority of the operator of the electricity infrastructure of which the line forms part.

Maximum penalty: $2 500.
Expiation fee: $210.

Entangled objects

37. A person must not, without the authority of the operator of the electricity infrastructure or electrical installation, pull or interfere with any object resting on or entangled in electricity infrastructure or the electrical installation unless the action is reasonably necessary to prevent or reduce injury to a person or property.

Maximum penalty: $2 500.
Expiation fee: $210.

Altering ground levels near infrastructure

38. (1) A person must not, without the written authority of the electricity infrastructure operator—

(a) cut away, excavate or remove, or cause to be cut away, excavated or removed, earth or material supporting electricity infrastructure so as to endanger the stability of the infrastructure; or

(b) make an excavation deeper than 0.3 m within 3 m of—

(i) a pole structure or stand, not being a tower or tower structure supporting electricity infrastructure; or

(ii) any pole or bed log to which is affixed a staywire used to support electricity infrastructure; or

(c) make an excavation deeper than 0.5 m within 10 m of any tower or tower structure supporting electricity infrastructure; or

(d) make an excavation deeper than 0.3 m within 0.6 m of any wall, fence or foundation of a substation; or

(e) place any material or construct any artificial surface above ground level—

(i) below an electric line or within the vertical projection of any points to which a conductor of the electric line may sway; or

(ii) adjacent to electricity infrastructure,

in a manner that may alter the level of the ground at any place so as to infringe any permissible clearance distance under these regulations.

Maximum penalty: $2 500.
Expiation fee: $210.

(2) The allowable depth of an excavation under subregulation (1) is, if the ground level unaffected by previous works is known, to be determined by reference to that level, but is otherwise to be determined by reference to the current ground level.

Erection of buildings in proximity to aerial lines

39. (1) For the purposes of section 86 of the Act, a person must not, except as approved by the Technical Regulator, erect a building or structure—

(a) under an aerial line constructed to operate at a voltage of more than 33kV; or

(b) so that the distance from any part of the building or structure to any position to which a conductor in an aerial line (other than a facade mounted line) or other cable system may sag at maximum design temperature or move as a result of normal prevailing wind pressures is less than the relevant distance set out in Table 1 in Schedule 2. (*Figure 1 following that Table is to be used to assist in understanding the information contained in the Table.*)

(2) The Technical Regulator may not approve the erection of a building or structure—

(a) in proximity to an aerial line that—

(i) is not situated on a public road; and

(ii) is constructed to operate at a voltage of more than 66kV; or

(b) under an aerial line that is constructed to operate at a voltage of more than 33kV.

(3) The requirements of this regulation do not apply in relation to—

(a) a fence that is less than 2.0 m in height; or

(b) a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Prohibition of certain activities in proximity to aerial lines and other cable systems

40. A person must not, without the written authority of the electricity infrastructure operator—

(a) place or maintain any material closer than the relevant distance set out in Table 1 in Schedule 6 to any point to which an aerial line (including a service line) or other cable system may swing or sag; or

(b) operate a machine, vehicle or vessel equipped with an elevating component or shear legs so that any part of the machine, vehicle, vessel or its load comes within the relevant distance set out in Table 2 in Schedule 6 to any point to which an aerial line (including a service line) or other cable system may swing or sag; or

(c) attach or keep attached to electricity infrastructure any conductors of circuits or other cable system; or

(d) erect or maintain conductors of circuits, or other cable system, so as to cross the circuit of an aerial line, or other cable system, unless clearances in excess of the relevant distance set out in Table 3 in Schedule 6 can be maintained; or

(e) erect a circuit or other cable system unless the clearance in any direction from the circuit or system to any structure forming part of electricity infrastructure (other than a structure supporting the circuit or system) is greater than the relevant distance set out in Table 4 in Schedule 6.

Placement of materials near supporting structures, etc.

41. A person must not, without the written authority of the electricity infrastructure operator, place or maintain any material closer than the relevant distance set out in Table 1 in Schedule 6 to electricity infrastructure consisting of supporting or protective structure or equipment for aerial lines.

Placement of materials in proximity to substations

42. A person must not, without the written authority of the electricity infrastructure operator—

(a) place or maintain any timber or inflammable material within 3 metres in any direction of a wall or fence surrounding a substation; or

(b) impede access to any door, gate or entrance of a substation or interfere in any way with the free flow of air through any openings or fittings used for ventilation in the walls of a substation; or

(c) —

(i) place or maintain any material adjacent to a wall or fence of a substation; or

(ii) plant or nurture vegetation near or adjacent to a wall or fence of a substation,

so as to enable unauthorised access to the substation.

Maximum penalty: $2 500.
Expiation fee: $210.

Prohibition of burning in proximity to infrastructure

43. A person must not, without the written authority of the electricity infrastructure operator, burn any material in proximity to electricity infrastructure such that there is a risk of damage to the infrastructure or outages or flashovers.

Transportation

44. (1) A person who drives a vehicle carrying a load or equipment on the vehicle or on any trailer attached to the vehicle that exceeds the height limit established under Part 4 of the *Road Traffic Act 1961* must ensure—

(a) that the distance between the load being transported and any aerial line along the route taken is greater than the relevant distance set out in Table 5 in Schedule 6; and

(b) that arrangements approved by the operator of the electricity infrastructure of which the aerial line is part have been made before, and are observed during, transportation.

Maximum penalty: $2 500.
Expiation fee: $210.

(2) The person must give written notice of the proposal to transport the load to the electricity infrastructure operator at least 3 clear business days before the commencement of the transportation with the notice clearly stating—

(a) the nature of the vehicle and the load; and

(b) the height and width of the load; and

(c) the date and the time of the proposed transportation; and

(d) the starting point and finishing point of the transportation; and

(e) the proposed route; and

(f) the name and contact address of the person; and

(g) that the person agrees to pay the reasonable costs that are incurred by the operator in considering the proposal, approving the transportation arrangements or facilitating the transportation; and

(h) any other particulars that the operator may in the circumstances require.

Maximum penalty: $2 500.
Expiation fee: $210.

(3) The electricity infrastructure operator may charge in advance or bring proceedings in a court of competent jurisdiction to recover as a debt the reasonable costs referred to in subregulation (2)*(g)*.

Interference and obstruction

45. (1) A person must not obstruct any road under the control of an electricity infrastructure operator or otherwise do anything to prevent or impede access to the electricity infrastructure.

Maximum penalty: $2 500.
Expiation fee: $210.

(2) A person must not interfere with or damage the surface of a road made by an electricity infrastructure operator that is used for the purposes of works.

Maximum penalty: $2 500.
Expiation fee: $210.

(3) An electricity infrastructure operator may, without notice to the owner, remove anything which causes or may cause a danger to people or property using or on the road.

Form for warrants

46. A warrant under section 82 or 83 of the Act must be in the appropriate form set out in Schedule 7.

General penalty

47. A person who contravenes or fails to comply with a provision of these regulations for which a specific penalty is not provided is guilty of an offence.

Maximum penalty: $5 000.
Expiation fee: $315.

Fees for reinspection, etc.

48. (1) A person to whom a direction has been given under section 62, 70 or 72 of the Act is liable to pay a fee of an amount equal to the reasonable costs of any reinspection or reattendance by an authorised officer for the purpose of ensuring compliance with the direction or approving reconnection of the electricity supply.

(2) The Technical Regulator may recover a fee payable under subregulation (1) as a debt by action in a court of competent jurisdiction.

SCHEDULE 1

Quality of Electricity Supply
(Regulation 10)

TABLE 1: Total Voltage Distortion Limits (%)—For voltage levels less than 66kV

CATEGORY	LIMIT (%)
Individual Odd Harmonics	4
Individual Even Harmonics	2
Total Harmonic Distortion	5

TABLE 2: Total Odd Harmonic Voltage Distortion Limits (%)—For voltage levels greater than or equal to 66kV

HARMONIC ORDER (n)	VOLTAGE LIMIT (%)
3	1.0
5	0.9
7	0.9
9	0.8
11	0.8
13	0.7
15	0.6
17	0.5
19	0.5
21	0.4
23	0.4
25	0.3
27-49	0.2
Total (Odd + Even)	1.5

TABLE 3: Total Even Harmonic Voltage Distortion Limits (%)—For voltages greater than or equal to 66kV

HARMONIC ORDER (n)	VOLTAGE LIMIT (%)
2	0.5
4	0.5
6	0.4
8	0.4
10	0.4
12	0.4
14	0.3
16	0.3
18	0.3
20-50	0.2
Total (Odd + Even)	1.5

TABLE 4: Total Voltage Unbalance Factor (%)—For three phase supplies

TIME PERIOD	VOLTAGE UNBALANCE FACTOR (%)
Continuous	1.0
5 minutes	1.5
Instantaneous	3.0

SCHEDULE 2

Requirements for Aerial Lines
(Regulation 12)

Interpretation

1. In this Schedule—

"**listed standards**" means the standards (both national and international), codes, guides and other documents, as published from time to time, listed in the Appendix at the end of this Schedule;

"**maximum design temperature**" means the maximum temperature that conductors may reach under the influence of load current (excluding fault current), ambient temperature of the air and solar radiation.

Design

2. Aerial lines must be designed so that the lines—

(a) have safe levels of electrical insulation; and

(b) will carry the electrical load currents for which they are designed without failure; and

(c) will allow the passage of electrical short circuit currents which will enable the correct operation of protective devices; and

(d) are structurally secure for the environmental and service conditions for which they are designed; and

(e) maintain safe clearances,

and so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

Materials

3. Aerial line structures, their components, conductors, cables and accessories must, so as to ensure safe operational performance, conform to the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

Thermal ratings

4. (1) The thermal capacity of a conductor must be sufficient to pass the electrical load for which it is designed without losing any mechanical properties that would affect the safety of the line.

(2) Thermal ratings of conductors must be determined in accordance with the guidelines set out in the listed standards.

Short circuit ratings

5. (1) The conductors of aerial lines must be of sufficient size to pass short circuit currents so as to enable the correct operation of protective devices without losing any mechanical properties that would affect the safety of the line.

(2) Short circuit capacity of conductors must be determined in accordance with the guidelines set out in the listed standards.

Mechanical loading conditions

6. (1) The mechanical loads used for the design of aerial lines must be based on the local environment and electrical service conditions.

(2) In determining electrical service conditions and the physical environment under which the line will operate, due care must be given to the consideration of extremes that may occur, the likelihood of their occurrence and the associated risks.

(3) Mechanical loading conditions must be determined in accordance with the guidelines set out in the listed standards.

Conductor tensions

7. (1) The conductors for use with aerial lines must be designed to withstand the mechanical loads determined for their operation over the designed operational life of the line.

(2) Conductors for lines must be designed so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

Structures and footings

8. (1) The structures and footings for use with aerial lines must be designed to withstand the mechanical loads determined for their operation over the designed operational life of the line.

(2) Structures and footings for lines must be designed so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

Facade mounted cables

9. (1) Cables and accessories designed for facade mounting must be constructed with suitable insulated conductors and be manufactured to be durable for the environment and service conditions for which they are designed.

(2) In determining electrical service conditions and the physical environment under which the line will operate, due care must be given to the consideration of extremes that may occur, the likelihood of their occurrence and the associated risks.

(3) Mechanical loading conditions must be determined in accordance with the guidelines set out in the listed standards.

Safety clearances

10. (1) Aerial lines must be designed to maintain safety clearances to the ground and other buildings or structures under the environmental and electrical service conditions determined for the line.

(2) In determining circuit arrangement, electrical service conditions and the physical environment under which the line will operate, due care must be given to the consideration of extremes that may occur, the likelihood of their occurrence and the associated risks.

(3) The environmental and electrical conditions for the determination of clearances to lines must be determined in accordance with the listed standards.

(4) Aerial lines must be designed so that safety clearances are as follows:

(a) for all aerial lines (other than lines attached to buildings ("**facade mounted lines**"))—so that the distance from any building or structure (other than a support to which a line under consideration is attached or a support of another overhead line which crosses the line under consideration) to any position to which a conductor in an aerial line or other cable system may sag at maximum design temperature or move as a result of normal prevailing wind pressures is not less than the relevant distance set out in Table 1; *(Figure 1 is to be used to assist in understanding the information contained in Table 1.)*

(b) for aerial lines (other than service lines, other cable system or aerial lines within substations)—so that the distance to the ground in any direction from any position to which any part of a line may sag at maximum design temperature or move as a result of normal prevailing wind pressures is not less than the relevant distance set out in Table 2;

(c) for service lines and other cable systems—so that the distance to the ground in any direction from any position to which any part of the line may sag at maximum design temperature or move as a result of normal prevailing wind pressures is not less than the relevant distance set out in Table 3;

(d) for a facade mounted line—

(i) so that the distance from any part of the facade of the building which supports a line to any position to which the line may sag at maximum design temperature is not less than the relevant distance set out in Table 4;

(ii) where it is designed so the line is more than 0.3 m from the facade of the building supporting it—so that the requirements of paragraphs *(a)* and *(c)* are complied with.

(5) The arrangement of and clearances between circuits, either attached to a common structure, unattached, in shared spans or crossing, must be designed to be safe for the environmental and electrical service conditions for which they are designed and so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

(6) Aerial lines operating at a voltage greater than 33kV must not be installed above any building or structure.

Installation of aerial lines

11. Aerial lines must be installed in accordance with the guidelines set out in the listed standards.

Maintenance of aerial lines

12. (1) Aerial lines, their structures and components must be maintained to be in a safe operating condition.

(2) A system of maintenance must be instituted for aerial lines, their structures and their components, including—

(a) predetermined processes to confirm the safe state of components;

(b) managed replacement programs for components approaching the end of their serviceable life.

(3) Maintenance programs must be carried out in accordance with the listed standards.

TABLE 1: Clearance distances between aerial lines (other than facade mounted lines) and buildings or structures

Direction	**Distance measured from nearest conductor (in metres)**						Distance measured from centre of pole (in metres)					
	U≤1000V			U>1000V		U>1000V U≤33kV	U>33kV U≤66kV	U>66kV U≤132kV		U>132kV U≤275kV	U>275kV U≤330kV	U>330kV U≤500kV
	Insulated	Bare		Insulated		Bare or covered	Bare	Bare		Bare	Bare	Bare
		neutral	active	with earthed screen	without earthed screen			single pole	other			
Vertically above those parts of a building or structure normally accessible to persons (A)	2.7	2.7	3.7	2.7	3.7	5.5	N/A	N/A	N/A	N/A	N/A	N/A
Vertically above those parts of a building or structure not normally accessible to persons but on which a person can stand (B)	0.1	2.7	2.7	0.1	2.7	4.7	N/A	N/A	N/A	N/A	N/A	N/A
In any other direction from those parts of a building or structure normally accessible to persons or that is not normally accessible to persons but on which a person can stand (C)	0.1	0.9	1.5	0.1	1.5	3.1	13.0	15.0	20.0	25.0	30.0	38.0
In any direction from those parts of a building or structure not normally accessible to persons (D)	0.1*	0.3*	0.6*	0.1	0.6	2.5	13.0	15.0	20.0	25.0	30.0	38.0
In any direction from ground (G)	Refer to Table 2 or 3			Refer to Table 2		Refer to Table 2						

**This clearance can be further reduced to allow for termination at the point of attachment.*

FIGURE 1

1. Figure 1 illustrates the application of Table 1 to a particular structure. The letters A to D refer to distances A to D as set out in Table 1. The letter G refers to distance to ground of insulated cables.

2. The clearances specified in A and B of Table 1 must be maintained above a horizontal line extending outward for the distance specified in C from the outer extremities of those parts of any building or structure on which a person can stand.

[Figure 1 appears in *Gaz.* 26 June 1997, p. 3144]

TABLE 2: Clearance distance for aerial lines (excluding service lines, other cable systems and aerial lines within substations)

Nominal System Voltage (U)	**Clearance Distance (in metres)**		
	Over carriageway of road	Over land other than carriageway of road	Over land not traversable by vehicles
Bare or insulated conductor U ≤ 1kV	5.5	5.5	4.5
Insulated conductor with earthed screen U> 1kV	5.5	5.5	4.5
Insulated conductor without earthed screen U > 1kV	6.0	5.5	4.5
Bare or covered conductor 1kV < U ≤ 33kV 33kV < U ≤ 132kV 132kV < U ≤ 275kV 275kV < U ≤ 330kV 330kV > U ≤ 500kV	 6.7 6.7 7.5 8.0 9.0	 6.0 6.7 7.5 8.0 9.0	 4.5 5.5 6.0 6.7 7.5

TABLE 3: Clearance distances for aerial service lines and other cable systems

Location of Line	**Clearance Distance (in metres)**
Over a road or part of a road specified by the Technical Regulator as being a preferred route for vehicles with loads exceeding the height restrictions under Part 4 of the *Road Traffic Act 1961*	6.5
Over any part of a main road within the meaning of the *Highways Act 1926*	5.5
Over the centre of each carriageway of a public road	5.5
Over any other part of a road	4.6
Over any part of a driveway	3.0
Elsewhere	2.7

TABLE 4: Facade mounted lines

	Facade Situation	Clearance Distances (in metres)
A	Clearance vertically from ground at footway level	2.5*
B	Above windows and doors	0.3*
C	Each side and below windows	0.5*
D	Each side of doors and balconies	1.0*
E	From metallic parts of buildings, *eg* downpipes	0.05*

* *This clearance may be reduced based on a proper risk assessment in any case where additional mechanical protection is provided to the cable.*

FIGURE 2

Figure 2 is to be used in understanding the information in Table 4.

[Figure 2 appears in *Gaz*. 26 June 1997, p. 3144]

APPENDIX

Standards, Codes, Guides and Other Documents Relating to Aerial Lines

In this Appendix—

"**ESAA**" means Electricity Supply Association of Australia;

"**NZS**" means New Zealand Standard.

Conductors

Bare overhead - Hard - drawn copper	AS 1746
Bare overhead - Aluminium & aluminium alloy	AS 1531
Bare overhead - Aluminium & aluminium alloy - steel reinforced	AS 3607
Steel conductors & stays - Bare overhead: Galvanised	AS 1222
Steel conductors & stays - Bare overhead: Aluminium alloy	AS 1222
Galvanised steel strand	AS 2841

Insulated Cables

Approval & test specification - elastomer insulated - 0.6/1kV	AS 3116
Approval & test specification - thermoplastic insulated - 0.6/1kV	AS 3417
Approval & test specification — neutral screened — 0.6/1kV	AS/NZS 3155
XLPE insulated - Aerial bundled - 0.6/1kV	AS 3560
Mechanical fittings for low voltage aerial bundled cable	AS 3766
Aerial bundled - Polymeric insulated - 6.35/11kV, 12.7/22kV: (metallic screened)	AS 3599
Aerial bundled - Polymeric insulated - 6.35/11kV, 12.7/22kV: (non-metallic screened)	AS 3599
Conductors - Covered overhead - 6.35/11kV to 19/33kV	AS 3675

Insulators

Guidelines for the design & maintenance of overhead distribution and transmission lines—

Selection	ESAA C(b)1
Porcelain & glass indoor & outdoor station post, U>1000V ac	AS 1137
Porcelain & glass for O/H lines, U>1000V ac: Test methods	AS 2947
Porcelain & glass for O/H lines, U>1000V ac: Characteristics	AS 2947
Porcelain & glass for O/H lines, U>1000V ac: Couplings	AS 2947
Porcelain & glass, pin & shackle U<1000V	AS 3608
Porcelain stay type U>1000V	AS 3609

Insulator and Conductor Fittings

For overhead lines: Performance & general requirements	AS 1154
For overhead lines: Dimensions	AS 1154
For overhead lines: Performance & general requirements for helical fittings	AS 1154

Thermal Limits
Guidelines for the design & maintenance of overhead distribution & transmission lines—

Thermal limits	ESAA C(b)1
Current rating of bare overhead line conductors	ESAA D(b)5

Short Circuit Capacity
Guidelines for the design & maintenance of overhead distribution & transmission lines—

Fault ratings	ESAA C(b)1

Mechanical Loading Conditions
Guidelines for the design & maintenance of overhead distribution & transmission lines—

Mechanical Loading Conditions	ESAA C(b)1
Minimum design loads on structures (Loading Code)	AS 1170
Dead & live loads	AS 1170
Wind loads	AS 1170
Earthquake loads	AS 1170

Conductor Tensions
Guidelines for the design & maintenance of overhead distribution & transmission lines—

General	ESAA C(b)1
Calculations	ESAA C(b)1

Structures and Footings
Guidelines for the design & maintenance of overhead distribution & transmission lines—

General	ESAA C(b)1
Methods of testing soils for engineering purposes	AS 1298 Series
Piling - Design & installation	AS 2159
Design of steel lattice towers & masts	AS 3995
Steel structures	AS 4100
Concrete structures	AS 3600

Clearances from Ground
Guidelines for the design & maintenance of overhead distribution & transmission lines—

Environmental & loading conditions	ESAA C(b)1

Clearances from Structures
Guidelines for the design & maintenance of overhead distribution & transmission lines—

Environmental & loading conditions	ESAA C(b)1

Spacing of Conductors
Guidelines for the design & maintenance of overhead distribution & transmission lines—

Clearances	ESAA C(b)1
Environmental & loading conditions	ESAA C(b)1

Maintenance

Guidelines for the design & maintenance of overhead distribution & transmission lines—

Maintenance & inspection procedures . . . . . ESAA C(b)1

SCHEDULE 3

Requirements for Underground Lines and Certain Other Powerlines
(Regulations 13 and 14)

Interpretation

1. In this Schedule—

"**listed standards**" means the standards (both national and international), codes, guides and other documents, as published from time to time, listed in the Appendix at the end of this Schedule.

Design—General

2. (1) Underground lines must be designed so that—

(a) cables have safe levels of electrical insulation; and

(b) cables will carry load currents for which they are designed without failure; and

(c) cables will pass short circuit current which will enable the correct operation of protective devices; and

(d) safe clearances are maintained,

and so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

(2) In determining electrical service conditions and the physical environment under which the line will operate, due care must be given to the consideration of extremes that may occur, the likelihood of their occurrence and the associated risks.

Cables and accessories

3. Cables and their accessories must, so as to ensure safe operational performance, conform to the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

Cable ratings

4. (1) The rating of a cable must be sufficient to pass the electrical load for which it is designed without failure or excessive heating.

(2) Rating of cables must be determined in accordance with the listed standards.

Short circuit rating of conductors and cable screens

5. (1) The cable conductors and cable screens must be of sufficient size to pass short circuit currents without overheating for the time taken for the operation of the protective device.

(2) The short circuit capacity of cable must be determined in accordance with the listed standards.

Installation—General

6. Underground lines must be installed in a safe manner in accordance with this Schedule and the listed standards or so as to achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

Installation of underground lines

7. (1) An underground line must be installed in accordance with Table 1 below and, subject to this clause, at the depth fixed for the designated voltage and cable type.

(2) For the mechanical cover and enclosures referred to in Table 1 below, one of the following must be used:

(a) a layer of concrete at least 50 mm thick with a characteristic strength defined by AS 1480 and AS 1012 and determined to be not less than 15 MPa at 28 days placed not less than 50 mm and not more than 150 mm above the cable and overlapping the cable by at least 40 mm on each side; or

(b) concrete slabs of at least 40 mm thickness with a characteristic strength defined as AS 1480 and AS 1012 and determined to be not less than 15MPa at 28 days with—

(i) each slab touching the next so that there are no spaces left between slabs; and

(ii) the slabs being placed not less than 50 mm and not more than 150 mm above the cable and overlapping the cable by at least 40 mm on each side of the cable; or

(c) a plastic or composite material that offers comparable protection (depending on depth of installation).

(3) The enclosure referred to in the last column of Table 1 must be a medium or heavy galvanised steel tube conforming to AS 1074 or a non-metallic heavy duty conduit conforming to AS 2053 (depending on depth of installation).

(4) If it is impractical to lay an underground line at a depth which complies with Table 1 then they may be laid at a lesser depth provided that additional covers or enclosures are installed to provide equivalent protection to that prescribed.

(5) The underground line, from where it enters the ground to a position where it complies with the requirements of depth and protection in Table 1, must be protected by a cover or enclosure described above.

TABLE 1: Minimum depth of burial from surface of ground to top of cable or enclosure

Nominal System Voltage (U)	**Method of Burial and Burial Depth (in metres)**		
	Direct Buried	Direct Buried and Covered by Mechanical Cover	Enclosed in Conduit or Pipe
U ≤ 1kV Single core type	(a) For a single insulated single core type—1; (b) For a double insulated single core type—0.75;	0.6	0.45
Multi core type	For a double insulated multi core type—0.75	0.45	0.45
1kV < U ≤ 22kV Both cable types	0.75	0.6	0.6
22kv < U ≤ 66kV Both cable types	1	0.75	0.75

Part of underground line installed on or above ground

8. (1) If an underground line is located on the surface of the ground or attached above the surface of the ground, it must be mechanically protected to a height of 2.4 m from any surface on which a person can stand to the point where it enters the ground.

(2) The mechanical protection must be provided—

(a) by a cable guard made of mild steel of 2.5 mm thickness for HV cables and 1.6 mm thickness for LV cables, galvanised to AS 1650; or

(b) a galvanised steel tube conforming to AS 1074; or

(c) some other material giving equivalent mechanical protection.

(3) If the attachment of the underground line is more than 2.4 m from a surface on which a person can stand, the cable need not be mechanically protected provided that—

(a) the cable is beyond reach (determined in accordance with AS 2607 Appendix G) from windows or other accessible parts of the building; or

(b) the cable is less than or equal to 1000 volts; or

(c) the cable is more than 1000 volts but is metallic screened; or

(d) the cable is within a substation.

(4) If the cable is high voltage, it must be enclosed in metallic piping or casing which is earthed in accordance with these regulations.

Shared trenches

9. Separation between cables and service lines of other utilities laid parallel must comply with the listed standards.

Maintenance

10. (1) Underground lines must be maintained to be in a safe operating condition.

(2) A system of maintenance must be instituted for underground lines and their components, including—

(a) predetermined processes to confirm the safe state of components;

(b) managed replacement programs for components approaching the end of their serviceable life.

(3) Maintenance programs must be carried out in accordance with the listed standards.

APPENDIX

Standards, Codes, Guides and Other Documents Relating to Underground Lines

In this Appendix—

"**ANSI**" means American National Standards Institute;

"**ESAA**" means Electricity Supply Association of Australia;

"**IEC**" means International Electrotechnical Commission;

"**IEEE**" means Institute of Electrical and Electronic Engineers;

"**NZS**" means New Zealand Standard.

High Voltage Cables

Polymeric Cables 3.3kV to 33kV	AS 1429
Impregnated paper insulated - U<33kV	AS 1026
Underground residential systems	AS 4026
Extruded solid dielectric - 1kV to 30kV	IEC 502
Tests for solid dielectric cables 30kV to 150kV	IEC 840

Low Voltage Cables

Impregnated paper insulated - U<33kV	AS 1026
Conductors in insulated cables & flexible cords	AS 1125
Concentric wire neutral - XLPE insulated - 0.6/1kV	AS 1178
Approval & test specification - elastomer insulated - 0.6/1kV	AS 3116
Approval & test specification - thermoplastic insulated - 0.6/1kV	AS 3147
Approval & test specification - neutral screened - 0.6/1kV	AS/NZS 3155
Underground residential systems	AS 4026

High Voltage Cable Accessories

High Voltage Cable Joints	ANSI/IEEE 48
High Voltage Cable Terminations	ANSI/IEEE 404
Separable insulated connectors - U>1kV	AS 2629

Continuous Cable Ratings

Calculation methods	IEC 287
Selection of cables - U<0.6/1kV	AS 3008

Short Circuit Currents

Calculation of Short Circuit Currents	IEC 949

Installation

ESAA *Guide to the Installation of Underground Cables*	C(b)2
ESAA *Guide to the Use of Separable Connectors*	D(b)30
Code of Practice for the coordination of work and allocation of space on roads and footpaths for underground and overhead services	(PUACC guidelines)

Maintenance

ESAA *Guide for the Maintenance of High Voltage Paper Oil Insulated Cables & Accessories*	D(b)31

SCHEDULE 4

Requirements for Substations
(Regulation 15)

Interpretation

1. In this Schedule—

"**Building Code of Australia**" means the *Building Code of Australia* as published from time to time;

"**ground type substation**" means a substation that is a semi-enclosed, free-standing substation connected to a high voltage aerial line or underground line;

"**kiosk padmount type substation**" means a substation that is a totally enclosed, free-standing, self-contained substation not designed for bodily entry, generally operated from door openings;

"**listed standards**" means the standards (both national and international), codes, guides and other documents, as published from time to time, listed in the Appendix at the end of this Schedule.

Design

2. (1) Substations must be designed so that—

(a) buildings and enclosures are secure; and

(b) plant, equipment and lines have safe levels of electrical insulation; and

(c) plant, equipment and lines will carry electrical load currents for which they are designed without failure; and

(d) plant, equipment and lines will carry short circuit currents which will enable the correct operation of protective devices,

so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

(2) In determining electrical service conditions and the physical environment under which the line will operate, due care must be given to the consideration of extremes that may occur, the likelihood of their occurrence and the associated risks.

Plant and equipment

3. All substation plant and equipment must conform to the listed standards or achieve, to the satisfaction or the Technical Regulator, the same or better safety and technical outcomes.

Clearances to live equipment and lines

4. (1) Substations must be designed to provide safe operating and working clearances from live equipment and lines.

(2) Clearances between live equipment to structures and buildings and the provision of safe operating and working clearances must be determined in accordance with the listed standards.

Containment of insulating liquids

5. Buildings must be designed in respect of the containment of insulating liquids in an enclosure or in an area in which the equipment is housed so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

Security of substation buildings and enclosures

6. (1) Buildings and enclosures must be secured so as to prevent entry by unauthorised persons.

(2) Buildings and enclosures must have signs on all entrances prohibiting unauthorised entry and warnings of the danger associated with unlawful entry.

(3) The ventilation system of buildings and enclosures must be designed so to prevent the intrusion of foreign objects into the building or enclosure likely to interfere with the safe operation of the electrical equipment.

Kiosk padmount type substations

7. The installation design of a kiosk padmount type substation must ensure that no part of the kiosk enclosure is within 1.2 m of any part of a building or wall that has a fire rating less than 3 hours as determined by the *Building Code of Australia*.

Ground type substations

8. (1) The calculations for the design of structures supporting aerial lines in ground type substations must, in addition to allowing for the maximum loading in accordance with Schedule 2, also allow for forces under short circuit conditions.

(2) Walls and fences enclosing a ground type substation must be designed—

(a) so that the minimum horizontal clearances from any building or structure (including fences or walls which are not solid) within the boundary, or forming the boundary of the ground type substation to any live and bare equipment is sufficient to ensure safe operating conditions;

(b) to be constructed of a substantive material (such as brick, masonry, wood, sheet metal or galvanised chain-wire mesh with an aperture dimension of not more than 0.05 m) and be a minimum height of 2.5 m.

(4) The top 0.5 m of a wall or fence enclosing a ground type substation may consist of securely supporting barbed wire with a maximum separation of the strands of 0.15 m.

(5) Clearances between any building or structure within the boundary of the ground type substation and any live equipment must be determined so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

Pole mounted substations

9. Pole mounted substations must be designed so that—

(a) the calculations for the design of structures supporting aerial lines and busbars in substations, in addition to allowing for the maximum loading in accordance with Schedule 2, also allow for forces under short circuit conditions;

(b) all parts of supporting platforms and equipment which are mounted on or attached to the pole or cross arms, except for conductors, are at height not less than that set out in Table 1;

(c) any equipment mounted at a height less than that prescribed in paragraph *(b)*, is less than 0.2 m from the surface of the pole and at least 0.5 m from the vertical projection of the kerb line of any road.

TABLE 1: Heights of supporting platforms and mounted equipment

	Outside 0.5m of the vertical projection of the kerbline (on the non road side) of any road	Elsewhere
Height above ground surface	3.6m	4.6m

Installation

10. Substations must be installed to the requirements of a design that complies with the requirements of this Schedule.

Maintenance

11. (1) Substations, substation enclosures, associated plant, components and lines must be maintained in a safe operating condition.

(2) A system of maintenance must be instituted for substation buildings and enclosures and associated plant, equipment and lines, including—

(a) predetermined processes to confirm the safe state of components; and

(b) managed replacement programs for components approaching the end of their serviceable life.

(3) Maintenance programs must be carried out in accordance with the listed standards.

APPENDIX

Standards, Codes, Guides and Other Documents Relating to Substations

In this Appendix—

"**ESAA**" means Electricity Supply Association of Australia;

"**IEC**" means International Electrotechnical Commission;

"**IP Code**" means International Protection Code.

Electrical Design

Switchgear assemblies & ancillary equipment - U>1kV
General . . . . . AS 2067

Circuit Breakers & Ancillary Equipment

Classification of degrees of protection provided by enclosures for electrical equipment (IP Code) . . . . . AS 1939

High voltage, ac switchgear & control gear - circuit breakers - U>1000V . . . . . AS 2006

Switchgear Assemblies & Ancillary Equipment

High voltage, ac switchgear & control gear—

Switches & disconnectors - 1kV to 52kV . . . . . AS 1025

Switches & disconnectors - U>52kV . . . . . AS 1025

Isolators & earthing switches . . . . . AS 1306

Fuse/switch & fuse/circuit breaker combinations . . . . . AS 2024

Common requirements . . . . . AS 2650

AC metal enclosed switchgear & control gear - 1kV to 72.5kV . . . . AS 2086

AC insulation enclosed switchgear - 1kV to 38kV . . . . . AS 2264

Switchgear assemblies & ancillary equipment - U>1kV . . . . . AS 2067

Classification of degrees of protection provided by enclosures for electrical equipment (IP Code) . . . . . AS 1939

Insulating oil for transformers & switchgear . . . . . AS 1767

Control Equipment

Low voltage switchgear & control gear . . . . . AS 3947

General rules . . . . . AS 3947

Switches, disconnectors, switch disconnectors & fuse combination units . . . . . AS 3947

Contactors & motor starters: Electromechanical contactors & motor starters . . . . . AS 3947

Circuit control devices & switching elements: Electromechanical control circuit devices . . . . . AS 3947

Control circuit devices & switching elements: Proximity switches . . . . . AS 3947

Insulating Panels

Sheets & Boards for electrical purposes—

- Classification & general requirements . . . . . AS 1795
- Dimensions of switchboard panels . . . . . AS 1795

Power Transformers

- Power Transformers . . . . . AS 2374
  - General requirements . . . . . AS 2374
  - Temperature rise . . . . . AS 2374
- Insulation Levels & dielectric tests—
  - General requirements . . . . . AS 2374
  - External clearances in air . . . . . AS 2374
- Tappings & connections . . . . . AS 2374
- Ability to withstand short circuit . . . . . AS 2374
- Determination of transformer & reactor sound levels . . . . . AS 2374
- Insulating oil for transformers & switchgear . . . . . AS 1767

Bushings

Bushings for ac U>1000V . . . . . AS 1265

Surge Arresters

- Surge Arresters (diverters)—
  - Silicon carbide type for ac systems . . . . . AS 1307
  - Metal oxide type for ac systems . . . . . AS 1307

Batteries

- Stationary batteries—
  - Lead acid - vented type . . . . . AS 4029
  - Lead acid - valve regulated sealed . . . . . AS 4029
- Stationary batteries - lead acid - pure lead positive pasted type . . . . . AS 4029

Insulation Coordination

- Insulation Coordination—
  - Definitions, principles & rules . . . . . AS 1824
  - Phase to earth & phase to phase: Application Guide . . . . . AS 1824
- Insulation to coordination within LV systems: Principles, requirements & tests . . . . . IEC 664

Safety Clearances

- Classification of degrees of protection provided by enclosures for electrical equipment (IP Code) . . . . . AS 1939
- Switchgear assemblies & ancillary equipment - U>1kV . . . . . AS 2067

Buildings and Enclosures

Building Code of Australia

Fixed platforms, walkways, stairways & ladders: Design construction & installation	AS 1657
The use of mechanical ventilation & air conditioning in buildings—	
Mechanical ventilation for acceptable indoor air quality	AS 1661
Fire & smoke control	AS 1661
Classification of degrees of protection provided by enclosures for electrical equipment (IP Code)	AS 1939
The storage & handling of flammable & combustible material	AS 1940
Oil containment	Environment Protection Authority
Fire protection of electricity substations	ESAA D(b)29
Electrical installations—	
Secondary batteries installed in buildings - Vented cells	AS 3011
Secondary batteries installed in buildings - Sealed cells	AS 3011

Switchyard Structures, Footings and Foundations

Minimum design loads on structures (Loading Code)	
Dead & live loads	AS 1170
Wind loads	AS 1170
Earthquake loads	AS 1170
Design of steel lattice towers & masts	AS 3995
Steel structures	AS 4100
Concrete structures	AS 3600

Maintenance

Guide to maintenance & supervision of insulating oils in service	AS 1883
Maintenance of electrical switchgear	AS 2467
Guide to the installation, maintenance, testing & replacement of secondary cells in buildings:	
Vented cells	AS 2676
Sealed Cells	AS 2676

SCHEDULE 5

Requirements for Earthing and Electrical Protection Systems
(Regulation 16)

Interpretation

1. In this Schedule—

"**ESAA**" means Electricity Supply Association of Australia;

"**listed standards**" means the standards (both national and international), codes, guides and other documents, as published from time to time, listed in the Appendix at the end of this Schedule;

"**neutral conductor**" means a conductor or a group of conductors of a multi-wired system of supply which is maintained at an intermediate and approximate uniform electrical potential in respect of the other conductors of the same circuit, or the conductor of a two-wire system that is earthed at its origin;

"**protective devices or equipment**" means devices or equipment intended to isolate the active conductors of a circuit in the event of an electrical fault.

Design—general

2. (1) Earthing and protection systems must be designed to ensure—

(a) reliable passage of fault and Single Wire Earth Return (**SWER**) load currents to earth; and

(b) reliable and speedy operation of circuit protection devices; and

(c) step, touch and transfer potentials with respect to assets associated with the circuit are safe; and

(d) detection and isolation of electrical conditions likely to significantly increase risk to people or cause significant damage to property,

and so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better safety and technical outcomes.

(2) In determining abnormal electrical service conditions, due care must be given to the consideration of extremes that may occur, the likelihood of their occurrence and the associated risks.

Protection equipment

3. All protection equipment must, to ensure safe operational performance, conform to the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better outcomes.

Earthing equipment and ancillaries

4. Earthing systems must be designed to be constructed of material that is—

(a) copper, copper alloy, stainless steel or some other material having superior corrosion resistance; and

(b) electrically conductive.

Earthing of low voltage electrical supply networks

5. (1) The earthing of low voltage electrical networks of supply must be designed to be a MEN system, unless otherwise approved by the Technical Regulator.

(2) A MEN system must be designed so that—

(a) a continuous neutral conductor connects all customers' premises in accordance with AS 3000; and

(b) the neutral conductor is connected to earth at each distribution substation or generator.

(3) A direct earthing system must be approved by the Technical Regulator and must be designed so that—

(a) a continuous earthed conductor connects—

(i) all customers' premises in accordance with AS 3000; and

(ii) the neutral conductor at the distribution substation or generator; and

(iii) every surge diverter,

to earth at the generating station or distribution substation only; and

(b) the earthed conductor is formed from—

(i) the metallic sheath of an insulated cable providing the LV supply to the customers' premises; or

(ii) a separate conductor of an insulated cable providing the LV supply to the customers' premises; or

(iii) a separate earthing conductor affixed to structures supporting the LV supply circuit to the customers' premises; and

(c) the system is earthed at the substations or generating stations.

Earthing of substations

6. Substations must be designed to have an earthing system that complies with the listed standards or achieves, to the satisfaction of the Technical Regulator, the same or better outcomes.

Protection systems for low voltage aerial lines and underground lines

7. Each of the aerial and underground service lines of a transmission or distribution network must form part of a circuit that is protected by protective equipment that can isolate each of the active conductors of the lines.

Step and touch potentials and earth potential rise

8. Uninsulated metal or reinforced concrete that—

(a) forms part of a circuit in a transmission or distribution network (excluding the current carrying conductors); and

(b) is accessible to persons; and

(c) may, in the event of a primary insulation failure of the circuit, experience a rise in voltage,

must be effectively earthed to comply with the requirements of Clause 12 of the ESAA *Guidelines for Design and Maintenance of Overhead Distribution and Transmission Lines* C(b)1, as published from time to time.

Installation of earthing and protection systems—general

9. Earthing and protection systems must be installed in accordance with design requirements set out in this Schedule and to conform with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better outcomes.

Connections and joints of earthing systems

10. Terminations to earthing conductors and joints in earthing conductors must be of a type that utilises materials and techniques specifically developed for earthing electrical installations so as to comply with the listed standards or achieve, to the satisfaction of the Technical Regulator, the same or better outcomes.

Mechanical strength and protection of earthing systems

11. Earthing conductors and other components of an earthing system must be installed in a manner that provides protection against likely mechanical damage, inadvertent interference and chemical deterioration.

Maintenance—general

12. (1) Protection and earthing systems must be maintained to be in a safe operating condition.

(2) A system of maintenance must be instituted for protection and earthing systems and their components, including—

(a) predetermined processes to confirm the safe state of components; and

(b) managed replacement programs for components approaching the end of their serviceable life.

(3) Maintenance programs must be carried out in accordance with the listed standards.

Inspection and testing of earthing systems

13. (1) Earthing systems must be inspected and tested from time to time to ensure that the design requirements of—

(a) resistance to the general mass of earth; and

(b) electrical capacity; and

(c) step, touch and transfer potentials; and

(d) corrosion resistance,

are being maintained.

(2) The condition of earthing systems must be verified by instruments designed for that purpose.

Inspection and test results of earthing systems

14. The results of visual inspections and resistance readings must be recorded and audited to identify changes that would influence the frequency of inspections, tests and maintenance.

Inspection and testing of protection systems

15. (1) Protection systems must be inspected and tested from time to time as required according to the risk of damage to, or aging of, components or changes in the network electrical parameters, to ensure that—

(a) detection sensitivity; and

(b) speed of operation; and

(c) discrimination of load currents; and

(d) co-ordination with other protection systems,

of the systems are being maintained.

(2) The performance of protection systems must be verified by instruments designed for that purpose.

Inspection and test results of protection systems

16. The results of visual inspections and performance tests must be recorded and audited to identify changes that would influence the frequency of inspections, tests, maintenance and replacements.

APPENDIX

Standards, Codes, Guides and Other Documents Relating to Earthing and Electrical Protection Systems

In this Appendix—

"**ESAA**" means Electricity Supply Association of Australia;

"**IEEE**" means Institute of Electrical and Electronic Engineers.

Protection

All or nothing relays	AS 2481
Voltage transformers for measurement & protection	AS 1243
Current transformers for measurement & protection	AS 1675
Low voltage switchgear & control gear	AS 3947
General rules	AS 3947
Switches, disconnectors, switch disconnectors and fuse combination units	AS 3947
Contactors & motor starters: Electromechanical contactors & motor starters	AS 3947
Circuit control devices & switching elements: Electromechanical control circuit devices	AS 3947
Control circuit devices & switching elements: Proximity switches	AS 3947

Earthing

Switchgear assemblies & ancillary equipment - U>1kV	AS 2067
Substations, earthing guide	ESAA EG1
Guide to safety in substation grounding	IEEE 80
Customer installations	AS 3000 & AS 3001
Guidelines for the design & maintenance of overhead distribution & transmission lines—	
Stay wires	ESAA C(b)1
Step & touch potentials	ESAA C(b)1
Switchgear assemblies & ancillary equipment - U>1kV	AS 2067
ESAA - Australian Telecommunications Commission - *Earth Potential Rise* Code of Practice	
ESAA - Australian Telecommunications Commission - *Earth Return High Voltage Power Lines* Code of Practice	

Maintenance

Switchgear assemblies & ancillary equipment - U>1kV	AS 2067
Electrical installations	AS 3000
Guide to safety in substation grounding	IEEE 80
Guidelines for the design & maintenance of overhead distribution & transmission lines	ESAA C(b)1
ESAA - Australian Telecommunications Commission - *Earth Potential Rise* Code of Practice	
ESAA - Australian Telecommunications Commission - *Earth Return High Voltage Power Lines* Code of Practice	

Testing

Earthing	AS 3000 IEEE 80 ESAA C(b)1

SCHEDULE 6

Clearance from Aerial Lines
(Regulations 40, 41 and 44)

TABLE 1: Clearance distance between materials and aerial lines or supporting structures

Direction of Distance	**Type and Voltage of Aerial Line (clearance distance in metres)**					
	Other cable systems & service lines U≤ 1kV	U > 1kV U ≤ 33kV	U > 33kV U ≤ 132kV	U > 132kV U ≤ 275kV	U > 275kV U ≤ 330kV	U > 330kV U ≤ 500kV
Distance between any material (other than inflammable materials) and aerial lines—						
(a) horizontal distance	1.5	2.1	3.0	4.6	5.5	6.4
(b) vertical distance	3.7	4.6	4.6	6.8	8.0	9.8
Distance between inflammable materials and aerial lines—						
(a) horizontal distances	3.0	3.0	3.0	4.6	5.5	6.4
(b) vertical distances	3.7	4.6	6.8	6.8	8.0	9.8
Distance between any material and supporting structure—						
(a) horizontal distances	5.0	10.0	15.0	15.0	15.0	15.0
(b) vertical distances	N/A	N/A	N/A	N/A	N/A	N/A

TABLE 2: Clearance distance between operation of machine, vehicle or vessel with elevating component or shear legs and aerial lines

Type and voltage or aerial line	U ≤ 1kV ABC	U ≤ 1kV Bare and covered conductor	U >1kV U ≤ 33kV	U > 33kV U ≤ 132kV	U > 132kV U ≤ 275kV	U > 275kV U ≤ 330kV	U > 275kV U ≤ 500kV
Clearance distance in all directions in metres	0.5	1.0	1.5	3.0	4.0	6.0	8.0

TABLE 3: Clearance distance between erection of circuits or other cable systems and aerial lines

Type or Circuit and Voltage		Clearance distance (in metres)		
Upper Circuit	Lower Circuit	Attached to a common structure	Between Structures	
			No wind condition	Wind condition
LV aerial line	Private powerline (LV) and other cable systems	0.9	Not permitted	Not permitted
LV aerial line	LV aerial line	0.38	0.6	0.38
Aerial lines U > 1kV U ≤ 33kV	Private powerline (LV) and other cable systems	1.8	Not permitted	Not permitted
Aerial lines U > 1kV	LV aerial line or, Aerial lines < 11kV	1.2	1.2	0.6
Aerial lines U > 11kV U ≤ 33kV	LV aerial line or, Aerial lines < 33kV	1.2	1.2	0.75
Aerial lines U > 33kV U ≤ 66kV	Private powerline (LV) and other cable systems	2.4	Not permitted	Not permitted
Aerial lines U > 33kV U ≤ 66kV	LV aerial line or, aerial lines < 66kV	1.8	1.8	1.2
Aerial lines U > 66kV U ≤ 132kV	Aerial lines ≤ 33kV	Not permitted	Not permitted	Not permitted
Aerial lines U ≥ 132kV	Aerial lines > 33kV	Not permitted	Not permitted	Not permitted

Notes relating to Table 3

1. Any combination of circuits not shown in Table 3 are not permitted.

2. For the purpose of Table 3—

   (a) no wind refers to—

      (i) undercrossing conductors at 15°C with no wind blowing; and

      (ii) overcrossing conductors at maximum design temperature with no wind blowing; and

   (b) wind refers to—

      (i) undercrossing conductors at 15°C, and displaced by a 500 Pa horizontal wind at right angles to the undercrossing conductors; and

      (ii) overcrossing conductors at maximum design temperature and not displaced by wind.

TABLE 4: Clearance distance between circuits on different supporting structures crossings)

Nominal System Voltage (U)	Clearance Distance (in any direction in metres)
Other cable system or insulated conductor U ≤ 1kV	0.1
bare conductor U ≤ 1kV	0.6
insulated conductor 1kV < U ≤ 33kV	0.6
bare conductor 1kV < U ≤ 33kV	1.2
33kV < U ≤ 66kV	1.8
66kV < U ≤ 132kV	2.4
132kV < U ≤ 275kV	2.8
275kV < U ≤ 330kV	3.8
330kV < U ≤ 500kV	5.2

TABLE 5: Clearance distance between load being transported and aerial lines

Nominal System Voltage (U)	Clearance distance (in metres)	
	Vertical distance	Horizontal distance
Other cable system or insulated conductor U ≤ 1kV	0.33	0.33
1kV < U ≤ 132kV	2.4	1.5
132kV < U ≤ 275kV	3.2	4.6
275kV < U ≤ 330kV	3.7	4.6
330kV < U ≤ 500kV	4.7	5.5

SCHEDULE 7
Forms for Warrants
(Regulation 46)

Form 1

Electricity Act 1996
(Section 82)

WARRANT
(personal application)

1. I . . . . . , magistrate, have received an application made personally for a warrant from

. . . . . (insert name), *authorised officer/electricity officer under the *Electricity Act 1996.*

2. On the application, I am satisfied that a warrant should be issued to enter . . . . . .

. . . . . (insert description of place)

on the following grounds: . . . . . .

. . . . . .

. . . . . .

ACCORDINGLY, I AUTHORISE

*the abovenamed authorised officer with any assistance and by any force reasonably necessary—

(a) to enter the place described above; and

(b) to do anything authorised by the *Electricity Act 1996* in that place.

*the abovenamed electricity officer, in the company of a member of the police force and with any assistance and by any force reasonably necessary—

(a) to enter the place described above; and

(b) to do anything authorised by the *Electricity Act 1996* in that place.

This warrant may only be executed . . . . . .

. . . . . (insert time or period)

This warrant ceases to have effect at . . . . . .

. . . . . (insert time and date).

Signed: . . . . . .

at . . . . . (insert time and date of signature).

**Strike out whichever is inapplicable*

Form 2

Electricity Act 1996
(Section 83)

WARRANT
(application by telephone)

1. I . . . . . ,
magistrate, have received an application by telephone for a warrant from

. . . . . (insert name),
*authorised officer/electricity officer under the *Electricity Act 1996.*

2. On the application, I am satisfied that a warrant should be issued urgently to enter . . . . . .

. . . . . (insert description of place)

on the following grounds: . . . . . .

. . . . . .

. . . . . .

. . . . . .

ACCORDINGLY, I AUTHORISE

*the abovenamed authorised officer with any assistance and by any force reasonably necessary—

(a) to enter the place described above; and

(b) to do anything authorised by the *Electricity Act 1996* in that place.

*the abovenamed electricity officer, in the company of a member of the police force and with any assistance and by any force reasonably necessary—

(a) to enter the place described above; and

(b) to do anything authorised by the *Electricity Act 1996* in that place.

This warrant may only be executed . . . . . .

. . . . . (insert time or period)

This warrant ceases to have effect at . . . . . .

. . . . . (insert time and date).

Signed: . . . . . .

at . . . . . (insert time and date of signature).