POWER SYSTEM SAFETY RULES

Version 2

June 2013

Signatories to the Power System Safety Rules

The Power System Safety Rules (PSSR) were developed on behalf of the companies that make up the Tasmanian Electricity Supply Industry (TESI).

Responsibility for elaborating on and supplementing these rules rests with current signatory companies through the Power System Safety Committee which consists of representatives from the signatory companies.

The names of current signatory companies, approved participating companies and committee members can be found, along with the latest version of the PSSR, on the Power System Safety web page, www.transend.com.au.

The PSSR are designed to provide broad, high level safe access principles for working on apparatus Each of the signatory companies and approved participating companies has developed policies, procedures, standards, guidelines and associated documentation to support the PSSR.

Use of the PSSR by companies / persons other than the signatory / participating companies is prohibited. The signatory companies take no responsibility for any loss or liability of any kind suffered by any third party's unauthorised use of the PSSR.

The PSSR will continue to apply during and after the electricity reform program.

Revisions

Rev No.	Date	Revision Description	Approval
Rev 0	4 March 2005	PSSR replaced Power System Isolation and Access Procedures and Electrical Safety Code	Chief Executive Officers G. Willis Hydro Tasmania R. Bevan Transend Networks Pty Ltd Dr Peter Davis Aurora Energy Pty Ltd
Rev 1	23 September 2008	Revision 1 submitted by Power System Safety Committee. Amendments listed in Attachment H.	R. Bevan Managing Director Transend Networks Pty Ltd V. Hawksworth Chief Executive Officer Hydro Tasmania Dr P. Davis Chief Executive Officer Aurora Energy Pty Ltd M. Kelleher Managing Director Roaring 40s
Rev 1.1	1 April 2010	Revision 1.1 submitted by Power System Safety Committee. Amendments listed in Attachment H	R. Bevan Managing Director Transend Networks Pty Ltd V. Hawksworth Chief Executive Officer Hydro Tasmania Dr P. Davis Chief Executive Officer Aurora Energy Pty Ltd S. Symons Managing Director Roaring 40s M. Brewster Chief Executive Officer Aurora Energy (Tamar Valley) Pty Ltd

Version 2	June 2013	Version 2 submitted by Power System Safety Committee. Amendments listed in Attachment H.	Peter Clark Chief Executive Officer Transend Networks Pty Ltd Dr P. Davis Chief Executive Officer Aurora Energy Pty Ltd Sanjay Khushalani Chief Executive Officer Aurora Energy (Tamar Valley) Pty Ltd

Table of Contents

Section-Page

1 Introduction

1.1 The basic safety principle

All *Power System Apparatus* shall be regarded as *Energised* until it has been made safe in accordance with these rules.

1.2 Legal Status

The signatories have both general and specific responsibilities placed upon them by the relevant Commonwealth and State legislation.

These rules have been developed as a means of assisting the signatories and *Employee*s to fulfil 'duty of care' when working on or near *Power System Apparatus*.

Nothing in these rules overrides the requirements of pertinent legislation such as *Work Health and Safety Act 2012*.

1.3 Purpose

The purpose of these rules is to establish a system of uniform and safe operating practices in accessing the *Power System*, to provide for:

(a) Safety of the *Employees* and members of the public;

(b) Safety of *Apparatus*; and

(c) Continuity of supply.

Use of the word 'shall' indicates mandatory provisions and use of the word 'should' indicates advisory or discretionary provisions.

Under no circumstance is the safety of *Employee*s to be compromised. Non-compliance with these rules shall be reported to the *Operating Authority*.

In an *Emergency* situation that threatens the safety of personnel, *Apparatus* or the environment, *Employee*s may enter a *Restricted Area* with due consideration for personal safety.

1.4 Scope

This document sets out *Approved* rules for work on or near *Power System Apparatus* but excludes:

- *Live* work covered by *Approved* procedures.
- *Extra Low Voltage (ELV)* work.

These rules apply to *Employee*s engaged to carry out operating, construction, maintenance and testing work on the *Power System*.

1.5 Application

These rules apply to the provision of access to work on or near *Power System Apparatus* and may involve:

(a) Authorisation to enter *Restricted Areas*.

(b) Outage planning and coordination.

(c) Preparation of *Switching Sheets*.

(d) Isolating and proving *De-energised*.

(e) Earthing.

(f) Delineation of *Work Sites*.

(g) Issuing, receiving, surrendering and cancelling *Access Authorities*.

1.6 Document control

The master document is available on the *Power System* Safety web page at www.transend.com.au and when printed is an uncontrolled copy.

All amendments will be published on the *Power System* Safety web page.

It is the responsibility of each *Authorised Person* to maintain their copy with the latest amendments.

1.7 Document review

These rules will be regularly reviewed using continuous improvement principles so that the document remains relevant and reflects current 'best practice'. The *Power System* Safety Committee encourages suggestions for improving this document.

*Employee*s who use this document, have a responsibility to continually review these rules. Any suggested changes (amendments,

additions or deletions) should be forwarded to a member of the *Power System* Safety Committee using Attachment G (Amendment Proposal) for consideration.

The Chair of the *Power System* Safety Committee will provide feedback to the originator of the amendment proposal.

Approved amendments to the document shall be published on the *Power System* Safety web page.

Important:

If the amendment proposal concerns safety, it shall be forwarded to the Power System Safety Committee ***immediately.***

1.8 Reference documentation

- *ENA Document 001-2008, National Electricity Network Safety Code*
- *ENA NENS 03-2006, National Guidelines for Safe Access to Electrical and Mechanical Apparatus*
- *ENA NENS 04-2006, National Guidelines for Safe Approach Distances to Electrical Apparatus*
- *ENA Document 023-2009 Guidelines for Safe Vegetation Management Work Near Live Overhead Lines*
- *Work Health and Safety Act 2012*

Not listed is relevant Commonwealth and State legislation

2 Definitions

All terms that are defined in this section are italicised throughout this document.

Access Authority	The form of authorisation which allows access to work on or near, or for the testing of, *Power System Apparatus.*
Accredited	Documented evidence of the completion and currency of PSSR training.
Additional Safety Measures	Actions taken to safeguard the work party from potential *Hazards* on the *Apparatus* and work activity covered by the *Access Authority.*
Apparatus	Electrical, mechanical or civil assets that form part of the *Power System* which is under operational control.
Apparatus Interface Statement	The formal means for communicating the operational status of *Apparatus* with non signatory organisations.
Approved	Authorised in writing by the signatories.
Authorisation Number	A unique number allocated to *Accredited* individuals identifying their authority to perform functions on behalf of the signatories within the PSSR.
Authorised Officer	A person who has the delegated authority to receive and surrender *Apparatus Interface Statements*.
Authorised Person	A person who has been *Approved*, or has the delegated authority to act on behalf of the signatories, to perform the duty concerned.
Barrier Marker	Rope, marking tape, signage and insulating barriers used solely for defining the boundaries of *Access Authority* areas.
Commissioned	Newly installed *Apparatus* which is ready for operational service.
Competent	Has the skills, knowledge and attributes a person needs to complete a task.
Conductor	Conducting parts of *Electrical Apparatus* including wires, cables and busbars.
Control Measures	Policies, standards, procedures or actions to eliminate or minimise risks.
Danger Points	See '*Hazards*'.
De-energised	Not connected to any source of energy but not necessarily *Isolated*.

Earthed	Effectively connected to the general mass of earth by means of an *Approved Earthing Device* to ensure and maintain effective dissipation of electrical energy.
Earthing Device (*Earths*)	A device for earthing *Apparatus* for work, of appropriate rating and design for the conditions of use, proven by appropriate type test, and of a type either provided or endorsed for use by the industry. Such devices include *Approved Operational Earths*, *Work Earths* and metal clad switchgear that can be locked into the earth position.
Electrical Apparatus	Any electrical equipment including overhead lines and underground cables, the *Conductors* of which are *Live* or can be made *Live*.
Emergency	A situation where immediate danger exists to human life, *Apparatus*, property or environment.
Employee	A worker employed by the signatories or a contractor, who carries out work for the signatories (includes trainees, apprentices and students).
Employer	Is the signatory, or an officer appointed by the signatory to exercise supervisory control over *Employee*s engaged at a *Work Site*.
Energised	Connected to any source of energy.
Equipotential Work Area	*Apparatus* within a *Work Site* that is maintained at the same electrical potential.
Extra Low Voltage or *ELV*	A nominal voltage not exceeding 50 volts alternating current or 120 volts direct current.
Hazards	A source of potential harm or a situation with potential for harm.
High Voltage or *HV*	A nominal voltage exceeding 1,000 volts alternating current or exceeding 1,500 volts direct current.
In Service	Where *Apparatus* is in its operational state.
Induction	Electrical potential difference created in *Isolated Electrical Apparatus* by the proximity of *Live Conductors*. Refer Attachment A.
Instructed Person	An *Employee* adequately advised or supervised by an *Authorised Person* to enable them to avoid the *Hazards* and who agrees to work under the terms of an *Access Authority*.

Isolated (Electrically)	Disconnected from all sources of supply by breaks of a distance appropriate to the voltage and insulating medium, and rendered incapable of being made *Live* without premeditated and deliberate manual operation.
Isolated (Mechanically)	Disconnected from all sources of energy and rendered free from danger by closing off all sources of mechanical, hydraulic or pneumatic energy by equipment suitably designed for the application and rendered incapable of being *Energised* without premeditated and deliberate manual operation.
Isolation	Disconnection from all possible sources of energy by means that prevent unintentional energisation of the *Apparatus*.
Issuing Officer	An *Employee* who is *Qualified* and authorised by the relevant Signatory to issue or cancel an *Access Authority* and *Apparatus Interface Statement*.
Live	*Energised* or subject to hazardous induced or capacitive voltages. All *High Voltage Conductors* that are not *Earthed* shall be considered potentially *Live*.
Log	Books, Log sheets, diaries, completed *Access Authority* forms, *Switching Sheets* and other records which together form a complete record of operating events in a *Station* or operating area.
Logged	Recorded in the *Log*.
Low Voltage or *LV*	A nominal voltage exceeding 50 volts alternating current or 120 volts direct current, but not exceeding 1000 volts alternating current or 1500 volts direct current.
Mechanical Apparatus	Any equipment used in the generation or supply of electricity that has the ability to rotate, or is pneumatic or hydraulic in nature or contains stored energy through mechanisms, liquid or gas contained within the equipment.
Mobile Plant	Excavators, cranes, elevating work platforms, tip trucks or similar plant, any equipment fitted with a jib or boom and any device capable of raising or lowering a load.
Network Operator	See *Operating Authority*

Operating Authority	The Network Service Provider or Generator responsible for supervision and control of their respective generation, transmission or distribution systems. May also be the Control Centre where the control of the electricity network is coordinated and directed.
Operational Earths	*Earths* applied as a requirement for the issue of an *Access Authority / Apparatus Interface Statement* (See *Earthing Device*)
Operational Information	Information exchanged and recorded that specific remote *Apparatus* has been *Isolated* and, where appropriate, *Earthed*.
Operator	An *Employee* who is *Qualified* and authorised by the relevant signatory to operate *Power System Apparatus*.
Ordinary Person	A person without sufficient training or experience to enable them to avoid the dangers associated with the *Power System.*
Out Of Service	Where *Apparatus* is not *In Service*.
Participating Company	A *Participating Company* has the same rights and responsibilities as a signatory company in the application of the PSSR, however management of the rules remains the responsibility of the signatory companies.
Person In Charge	An *Authorised Person* to whom an *Access Authority* can be issued.
Power System	All *Apparatus* associated with the generation, transmission or distribution of electricity. This includes civil, mechanical and electrical assets.
Qualified	Deemed *Competent*, on the basis of appropriate training and assessment, to carry out the work to which the qualification pertains.
Recognised Earth Point	The point for connection of *Earthing Devices* to the general mass of earth.
Remote Control	Operation from a control point remote from the *Apparatus*.
Restricted Area	Defined area of the *Power System* where access is controlled.

Safe Approach Distance	The minimum separation in air from exposed *Electrical Apparatus* that shall be maintained by a person, or any object (other than insulated objects designed for contact with *Live Conductors*) held by or in contact with that person.
Safety Observer	A person *Competent* for the task and specifically assigned the duty of observing and warning against unsafe approach to *Energised Apparatus*, or other unsafe conditions.
SCADA	Supervisory Control and Data Acquisition System.
Site Introduction	Site specific training required for entry into *Restricted Areas.*
Station	A power *Station*, substation, switchyard, pumping *Station*, and generally any *Station* where *Power System Apparatus*, which is under operational control, is located.
Switching Sheet	A document, approved by the *Operating Authority*, which lists and records sequential operations to manage the *Power System*.
Tag	An *Approved* warning label used in accordance with *Approved* procedures.
Tagged	Marked to indicate that the normal operation of *Apparatus*, tools and equipment is restricted.
Tested	Proven operational in accordance with the relevant standards.
Work Earths	*Earths* applied at the *Work Site* following the issue of an *Access Authority*. (See *Earthing Device*)
Work Site	The defined working area as described under the conditions of an *Access Authority*
Work Site Introduction	*Work Site* specific awareness required for entry and work in the *Work Site* under the conditions of an *Access Authority*.

3 Responsibilities

This section defines the roles and responsibilities of *Employee*s to gain access for work on or near *Power System Apparatus* under operational control. All *Employee*s have a responsibility to exercise due care and diligence in the performance of the work activities including having *Accreditation* to meet the requirements of these rules.

3.1 General

The signatories in their role as owner and manager of their respective *Power System* are responsible for:

(a) Providing safe systems of work.

(b) Having documented safe work procedures.

(c) Ensuring that all their respective *Employee*s who have a role in carrying out these rules are appropriately *Qualified* and where appropriate authorised, to fulfil their assigned roles and responsibilities. Authorisation shall be reviewed and reassessed at appropriate intervals.

(d) Maintaining a register of all *Authorised Person*s, detailing the extent of authorisation and restrictions.

(e) Ensuring compliance with and review of these rules.

(f) Making organisational arrangements for the operational control of the *Power System*.

(g) Reviewing all instances of non-compliance with these rules and, when appropriate, withdrawing the *Accreditation*.

3.2 Operating Authority

Each *Operating Authority* is responsible for:

(a) Policy, assigning roles, authorisations and procedural requirements for *Power System* operation.

(b) Supervision and control of their respective generation, transmission and / or distribution systems.

(c) Planning and coordination of *Power System* operation.

(d) Delegation of specific tasks to *Authorised Persons.*

3.3 Operator

The *Operator* shall be an *Authorised Person* and is responsible for:

(a) Providing evidence of the appropriate level of PSSR *Accreditation*.

(b) Liaising with planning departments to plan outages where delegated.

(c) Negotiating access requirements.

(d) Preparing and authorising *Switching Sheets.*

(e) Operating *Power System Apparatus* under the direction of the *Operating Authority*.

(f) Actioning *Switching Sheets*.

(g) Conducting a risk assessment for:

i. Performing operational activities; and

ii. Maintaining system security prior to carrying out fault finding activities in conjunction with the *Operating Authority*, to determine the requirements.

(h) Positioning *Tags* and locking *Out Of Service* appropriate switchgear and operating control mechanisms.

(i) The application of *Operational Earths* and associated *Tags* where necessary for the issue of an *Access Authority*. The *Operator* may engage a *Competent Employee* to apply *Operational Earths*.

(j) Maintaining familiarity, complying with these rules and making themselves conversant with all amendments.

3.4 Issuing Officer

The *Issuing Officer* shall be an *Authorised Person* and is responsible for:

(a) Providing evidence of the appropriate level of PSSR *Accreditation*.

(b) Ensuring that they have authorisation from the appropriate *Operating Authority* to fulfil the role of the *Issuing Officer* at the *Work Site*.

(c) Ensuring that the *Apparatus* / *Work Site* is safe for work, prior to issuing an *Access Authority*.

(d) Delineating the *Work Site* prior to issuing an *Access Authority*.

(e) Liaising with the *Person in Charge* prior to an *Access Authority* being issued to determine whether the *Person in Charge* intends to use any special tooling, vehicle or plant which may have a bearing on the preparation / delineation of the *Work Site*.

(f) Liaising with the *Person in Charge* to ensure the description of work accurately describes the work to be performed.

(g) Liaising with the *Person in Charge* to ensure additional *Control Measures* and / or conditions for testing are detailed on the *Access Authority*.

(h) Ensuring that an *Access Authority* is issued only to *Employee*s who hold current *Person in Charge Accreditation*.

(i) Issuing / cancelling an *Access Authority* in liaison with the *Person In Charge*.

(j) Describing the status of the *Apparatus* / *Work Site*, *Hazards* / *Danger Points* and any relevant information to the *Person In Charge* and, if possible, to the *Instructed Person*s.

(k) Determining whether or not the work associated with the issuing of an *Access Authority* requires the appointment of a *Safety Observer*. Where the *Issuing Officer* determines that a *Safety Observer* is required, the appointment is made in consultation with the *Person In Charge*.

(l) Identifying and approving the conditions under which *Isolation*, *Operational Earths* and *Additional Safety Measures* can be varied for testing. The responsibility for varying the conditions may be delegated to the *Person In Charge*.

(m) Issuing / cancelling *Apparatus Interface Statements* in liaison with the *Authorised Officer*.

(n) Maintaining familiarity, complying with these rules and making themselves conversant with all amendments.

Note: The Issuing Officer is not responsible for checking the technical qualifications of the Person In Charge.

3.5 Person In Charge

The *Person in Charge* shall be an *Authorised Person* responsible for:

(a) Providing evidence of the appropriate level of PSSR *Accreditation*.

(b) Ensuring a current copy of the PSSR shall be readily available at the Location / *Work Site*.

(c) Determining whether the *Issuing Officer* is authorised to issue the *Access Authority*.

(d) Liaising with the *Issuing Officer* prior to an *Access Authority* being issued and informing the *Issuing Officer* of any intended use of special tools, vehicles or plant which may have a bearing on the preparation / delineation of the *Work Site*.

(e) Liaising with the *Issuing Officer* to ensure the description of work accurately covers the work concerned.

(f) Liaising with the *Issuing Officer* to ensure additional *Control Measures* and / or conditions for testing are detailed.

(g) Ensuring that any *Additional Safety Measures* required are taken.

(h) Ensuring that the *Apparatus* / *Work Site* covered by the *Access Authority* is safe for work.

(i) Receiving and being in control of the *Access Authority* until surrendered.

(j) Ensuring the original of the *Access Authority* shall be readily available at the Location / *Work Site* at all times that the work party is on site.

(k) Ensuring that persons working under the terms and conditions of the *Access Authority*:

i. Provide evidence of the appropriate level of PSSR *Accreditation*;

ii. Are familiar with their responsibilities;

iii. Understand the extent of the Location / *Apparatus* / *Work Site* covered by the *Access Authority*;

iv. Understand the extent of the *Hazards* / *Danger Points* present;

v. Have signed on the *Access Authority*; and

vi. Work safely.

(l) Controlling the Location / *Work Site* under the terms of the *Access Authority* by:

i. Being present at the Location / *Apparatus* / *Work Site* as described on the *Access Authority* to the extent necessary to fully exercise responsibility;

or

ii. Transferring responsibility to another *Person in Charge*;

or

iii. Ceasing work and removing all persons from the *Work Site* if unable to immediately appoint another *Person in Charge*.

(m) Carrying out a risk assessment for the safety of *Employee*s, *Ordinary Person*s and members of the public who could be put at risk by the work and taking appropriate action.

(n) Removing any person deemed unsuitable from the Location / *Work Site*.

(o) Appointing a *Safety Observer*, *Competent* for the task and environment, as negotiated with the *Issuing Officer* prior to the work commencing or as the need arises during the work activities.

(p) Ensuring, where testing is *Approved*, all *Instructed Person*s sign the Test Acknowledgement Section prior to commencing and upon completion of testing. The *Person In Charge* must ensure that all *Instructed Person*s are fully briefed on the changes which may potentially occur as a consequence of the testing.

(q) Implementing *Control Measures* and / or conditions for testing as delegated by the *Issuing Officer*.

(r) Applying and removing *Work Earths*, as *Additional Safety Measures*, and recording their application and removal in an appropriate *Log*.

(s) On completion of work, the *Person in Charge* shall ensure that all *Instructed Person*s working under the *Access Authority*:

i. Have signed off the *Access Authority*;

ii. Are informed the *Access Authority* is to be surrendered; and

iii. Are located in a safe environment and have been instructed to keep clear of the *Apparatus* / *Work Site*.

(t) On completion of work, the *Person In Charge* shall confirm to the *Issuing Officer*:

i. All *Safety Observer* / *Instructed Person*s have signed off the *Access Authority* and regard the *Apparatus* as unsafe to approach;

ii. All tools, *Work Earths* and other *Additional Safety Measures* applied, have been removed from the *Apparatus* / *Work Site*; and

iii. The *Apparatus* is / is not available for service.

(u) Maintaining familiarity, complying with these rules and making themselves conversant with all amendments.

3.6 Safety Observer

Note: A *Person in Charge* may perform the role of *Safety Observer*. Should their *Person in Charge* responsibilities impact the Safety Observer role, all work shall cease.

The *Safety Observer* shall be a *Competent* person responsible for:

(a) Understanding the extent of the *Apparatus* / *Work Site* covered by the *Access Authority*.

(b) Understanding the specific *Hazards* / *Danger Points* associated with the *Apparatus* / *Work Site*.

(c) Signing on and off the *Access Authority* as a *Safety Observer*.

(d) Performing the role of a *Safety Observer* exclusively and not performing any other task.

(e) Being positioned at a suitable location to effectively observe and be able to immediately communicate with workers performing the work.

(f) Warning against unsafe approach to *Energised Apparatus*.

(g) Stopping work processes to prevent unsafe situations arising.

3.7 Instructed Persons

*Instructed Person*s are responsible for:

(a) Providing evidence of the appropriate level of PSSR *Accreditation.*

(b) Understanding the extent of the *Apparatus* / *Work Site* covered by the *Access Authority*.

(c) Understanding the specific *Hazards* / *Danger Points* associated with the *Apparatus* / *Work Site*.

(d) Advising the *Person In Charge* if a requirement for *Additional Safety Measures* is identified.

(e) Signing on and off the *Access Authority*.

(f) Working safely.

(g) Reporting to the *Person In Charge* before leaving and entering the *Work Site*.

4 General Safety Provisions

This Section applies to all *Employee*s working on or near *Power System Apparatus*.

*Employer*s are responsible for ensuring that no *Employee* shall carry out, or be required to perform, any work activity for which they are not *Competent*, *Approved* / authorised and which cannot be performed safely.

4.1 Training and competence

Work within the scope and application of these rules shall only be carried out by *Competent Employee*s

4.1.1 Power System Safety Rules training

*Employee*s must have documented evidence of the completion and currency of PSSR training to the required level of either:

(a) *Instructed Person* – general entry level *Accreditation* for all *Employee*s required to work on or near *Power System Apparatus*.

(b) *Operator* – specific level *Accreditation* allowing *Employee*s to operate *Power System Apparatus*.

(c) *Person In Charge* – supervisory level *Accreditation* allowing *Employee*s to receive and control an *Access Authority*.

(d) *Issuing Officer* – high level *Accreditation* allowing *Employee*s to issue or cancel *Access Authorities* or *Apparatus Interfaces Statements*.

4.1.2 Competence

Work within the scope and application of these rules shall only be carried out by *Competent Employee*s who

(a) Have received training appropriate for the work concerned and have been *Approved*.

(b) Are capable of safely performing the work to be undertaken.

(c) Have demonstrated competence within Industry accepted minimum frequency periods in rescue and resuscitation procedures relevant to the nature of the work.

(d) Have demonstrated competence in the relevant work procedures and safety instructions.

*Employee*s in training can work within the roles and responsibilities of these rules providing they carry out the work:

i. Based on a risk assessment appropriate for the type of work performed;

ii. To their level of competence; and

iii. Under appropriate supervision by a *Competent* person.

4.2 Hazard Identification and Risk Assessment

Hazards shall be identified and the associated risks assessed and controlled in accordance with an *Approved* procedure prior to working on or near any *Power System Apparatus*.

4.2.1 Approach to Energised Apparatus

*Employee*s, when planning work requiring approach to *Energised Apparatus*, shall give careful consideration to the *Hazards* and risks involved and any potential to inadvertently breach *Safe Approach Distances* to *Electrical Apparatus* and shall adjust the planned work methods accordingly.

The *Safe Approach Distance* (SAD) Tables are contained in section 5.

4.3 Personal Protective Equipment

Approved personal protective equipment appropriate for the work being undertaken shall be used.

4.4 First Aid Equipment

First aid equipment shall be readily available.

4.5 Tools and Safety Equipment

The *Employer* shall ensure that:

i. The appropriate tools and safety equipment are available;

ii. All tools and safety equipment are periodically inspected and *Tested,* where necessary, to ensure they are safe to use; and

iii. Any defective tools or safety equipment are withdrawn from service and *Tagged* as defective.

The *Employee* shall:

i. Use only appropriate tools and safety equipment;

ii. Inspect tools and safety equipment to check their serviceability before use; and

iii. *Tag* out of service any suspect or defective tools or equipment and notify the *Employer* of the defect.

4.6 Carrying of Equipment

When carrying or moving objects in the vicinity of *Energised Apparatus*, extreme care shall be taken to avoid:

i. Infringement of the *Safe Approach Distance*s; and / or

ii. The *Hazards* associated with *Energised Mechanical Apparatus*.

4.7 Electromagnetic Fields (EMF)

Employees working in the vicinity of *High Voltage* and high current *Electrical Apparatus* such as power transformer cables, generator cables, bus bars, air cored reactors and single phase *HV* cables may at times be exposed to strong electromagnetic fields.

The International Commission on Non Ionising Radiation Protection (ICNIRP) Guidelines 2010 and the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) Draft Standard 2009 Exposure Limits for Electric & Magnetic Fields - 0 Hz to 3 kHz recommend that occupational exposure limits should not exceed 10 000 mG for magnetic fields and 10 kV/m for electric fields.

Operating Authorities should identify locations where their respective *Electrical Apparatus* is likely to give rise to EMF exposure at or in excess of the above exposure limits and make arrangements as necessary to reduce employee exposure to below the recommended limits. Employees working in the vicinity of *High Voltage* and high current *Electrical Apparatus* shall be informed of the exposure limits and any necessary working arrangements.

Operating Authorities shall advise employees that magnetic fields may affect cardiac pacemakers and other medical implants and shall install warning signage at entrance points to such *Electrical Apparatus* or sites.

For further information on *Induction Hazards* see Attachment A.

4.8 Incident Reporting

All incidents shall be reported in accordance with *Approved* procedures.

Where there is evidence that an incident has not been reported, the relevant disciplinary action will apply.

5 Safe Approach Distances to Electrical Apparatus

This section is based on the National Guidelines for *Safe Approach Distance*s to *Electrical Apparatus* but excluding *High Voltage Live* line work covered by *Approved* procedures.

*Employee*s, when planning work requiring approach to *Energised Electrical Apparatus,* shall give careful consideration to the potential of inadvertently breaching the *Safe Approach Distance*s and shall adjust the planned work methods accordingly. This may necessitate adjustment to protection of adjacent *Energised Apparatus*.

5.1 Risks Excluded

Lightning transients are not considered in the derivation of *Safe Approach Distance*s. When lightning is nearby, further consideration needs to be given as to whether the work should continue or cease.

Other rare scenarios such as Ferro resonance and restriking of circuit breakers have not been considered and should be managed by operational or other controls rather than by *Safe Approach Distances*.

5.2 Safe Approach Distances

These distances apply to bare, covered and insulated *Conductors*.

The *Safe Approach Distance*s in these guidelines are based on an "exclusion zone" principle. This principle defines an area around the *Electrical Apparatus* into which no part of the person, *Mobile Plant* or object (other than *Approved* insulated objects) may encroach.

It is recognised that *Ordinary Person*s may not be able to distinguish between *High Voltage* and *Low Voltage Conductors*. Consultation is required to determine the operating voltage of the *Apparatus* so that an *Ordinary Person* can be advised of the appropriate *Safe Approach Distance*.

For approach closer than these distances, an *Ordinary Person* shall become an *Instructed Person*.

*Safe Approach Distance*s for 11 kV and 22 kV ac, as indicated in Table 2, may be reduced by the *Network Operator* for specific work activities provided a risk assessment has been undertaken and stringent controls are in place.

5.2.1 Examples of Ordinary, Instructed and Authorised Persons to aid in Safe Approach Distances Application

Ordinary Person

A person without sufficient training or experience to enable them to avoid the dangers associated with the *Power System.*

- Visitor to a *Restricted Area* accompanied by an *Authorised Person*
- Transport / vehicle driver making deliveries to a *Restricted Area* accompanied by an *Authorised Person*

Note: Members of the public are deemed to be Ordinary Persons.

Instructed Person

An *Employee* adequately advised or supervised by an *Authorised Person* to enable them to avoid the *Hazards* and who agrees to work under the terms of an *Access Authority.*

- Work Party member
- *Safety Observer*
- Crane / Mobile Plant Operator
- Transport / vehicle driver making deliveries to *Work Site*

Authorised Person

A person who has been *Approved*, or has the delegated authority to act on behalf of the signatories, to perform the duty concerned.

- *Operator*
- *Issuing Officer*
- *Person In Charge*

Safe Approach Distance Reference Matrix

	Working near	Operating Vehicles	Operating Mobile Plant
Ordinary Person	Table 1	Table 5	Table 3
Instructed / Authorised Person	Table 2	Table 6	Table 4

NOTE: In addition to the above tables, vegetation management workers shall also adhere to the tables listed in the ENA guideline *ENA Document 023-2009 Guidelines for Safe Vegetation Management Work Near Live Overhead Lines*.

5.3 Safe Approach Distance for Ordinary Persons

*Safe Approach Distance*s in Table 1 are for *Ordinary Person*s who carry out any activity (including work and recreation) near *Electrical Apparatus*.

TABLE 1
Safe Approach Distances
For Ordinary Persons

Nominal Phase to Phase ac Voltage (kV)	**Safe Approach Distance for Ordinary Persons (mm)**
Up to and including 33 with no consultation with the *Network Operator*	3000 (Note 1)
LV after consultation with *Network Operator*	1000 (Note 1)
Above *LV* and up to and including 33 after consultation with *Network Operator*	2000 (Note 1)
Above 33, up to and including 132	3000
220	4500
275	5000
330	6000
400	6000
500	6000
Nominal Pole to Earth dc Voltage (kV)	**Safe Approach Distance for Ordinary Persons (mm)**
Up to +/- 150	3000
+/- 270	4500
+/- 350	5000
+/- 400	6000

Note 1: The figures given in Table 1 labelled "after consultation with *Network Operator"* are recommended as the minimum *Safe Approach Distance* that shall be advised to the public following review of the activity including risk assessment.

5.4 Safe Approach Distances for Instructed Persons and Authorised Persons

Table 2 provides recommended *Safe Approach Distances for Instructed Persons and Authorised Persons* and is applicable to *Electrical Apparatus* except where an *Earthed* metallic screen is present.

TABLE 2
Safe Approach Distances
Instructed Persons and Authorised Persons

Nominal Phase to Phase ac Voltage (kV)	**Safe Approach Distance (mm)**
Low Voltage	*Instructed Person* – no contact *Authorised Person – insulated* contact only
11	700 (300*)
22	700 (300*)
33	700
50	750
66	1000
110	1000
132	1200
220	1800
275	2300
330	3000
400	3300
500	3900
Nominal Pole to Earth dc Voltage (kV)	**Safe Approach Distance (mm)**
+/- 25	700
+/- 85	1000
+/- 150	1200
+/- 270	1800
+/- 350	2500
+/- 400	2900

* *Safe Approach Distance*s for 11 kV and 22 kV ac may apply subject to approval by the *Network Operator*.

5.5 Safe Approach Distances for Mobile Plant Operated by Ordinary Persons

Table 3 provides the minimum *Safe Approach Distance*s for *Mobile Plant* Operated by *Ordinary Person*s near *Electrical Apparatus*.

For approach closer than these distances, an *Ordinary Person* shall become an *Instructed Person*.

TABLE 3
Safe Approach Distances for Mobile Plant Operated by Ordinary Persons

Nominal Phase to Phase ac Voltage (kV)	**Safe Approach Distance (mm)**
Up to and including 132	3000
Above 132, up to and including 330	6000
500	8000
Nominal Pole to Earth dc Voltage (kV)	**Safe Approach Distance (mm)**
Up to and including +/- 150	3000
Above +/- 150 and up to and including +/- 400	6000

5.6 Safe Approach Distances for Mobile Plant Operated by an Instructed Person or an Authorised Person

Table 4 provides recommended *Safe Approach Distance*s for *Mobile Plant* Operated by an *Instructed Person* or *Authorised Person*. It is based upon the use of a *Safety Observer*.

These *Safe Approach Distances* shall only be applied by the *Network Operator* following review of the activity including a risk assessment.

Table 4 provides minimum *Safe Approach Distances for Mobile Plant Operated by Instructed or Authorised Person*s. For application to both *Instructed Person*s and *Authorised Person*s, the same competency standard shall apply for both classes of person for the particular task.

The *Safe Approach Distance* for un-insulated portions of *Mobile Plant* is based on the personal *Safe Approach Distances* in Table 2.

TABLE 4
Safe Approach Distances for Mobile Plant Operated by an Instructed Person or Authorised Person, with a Safety Observer

NOTE: If a Safety Observer is not available, Table 3 SHALL be used.

Nominal Phase to Phase ac Voltage (kV)	**Safe Approach Distance for un-*insulated* portions (mm)**	**Safe Approach Distance for *insulated* portions (mm)**
Low Voltage	1000	Contact allowable
Above *LV*, up to and including 33	1200	700
50	1300	750
66	1400	1000
Above 66, up to and including 132	1800	-
Above 132, up to and including 220	2400	-
275	3000	-
330	3700	-
400	4000	-
500	4600	-
Nominal Pole to Earth dc Voltage (kV)	**Safe Approach Distance for un-*insulated* portions (mm)**	**Safe Approach Distance for *insulated* portions (mm)**
+/- 25	1200	700
+/- 85	1800	1000
+/- 150	1800	-
+/- 270	2400	-
+/- 350	3200	-
+/- 400	3600	-

A special limit of approach may be required for specific tasks, where the distance to *Electrical Apparatus* is lower than the *Safe Approach Distance for Instructed or Authorised Person*s operating *Mobile Plant* shown in Table 4. Review and risk assessments particular to the specific work process shall be carried out.

Direct contact with *Live Conductors* shall only be acceptable under *Approved Live* working procedures. Whenever a special limit of approach is applied, the maximum practicable clearance from *Conductors* shall be maintained.

5.7 Safe Approach Distances for Vehicles Operated by Ordinary Persons

Table 5 provides recommended *Safe Approach Distances* for *vehicles* operated by *Ordinary Person*s. It is based upon:

- For *High Voltage,* a distance of 4600mm (the height of the tallest legal height *vehicle* considered) from line construction clearances found in Table 7.1, and the risk analysis in Appendix G, of HB C(b)1 – 1999, "Guidelines for Design and Maintenance of Overhead Distribution and Transmission Lines"; and
- For *Low Voltage,* a *Safe Approach Distance* of 600mm.

TABLE 5
Safe Approach Distances for Vehicles Operated by Ordinary Persons

Nominal Phase to Phase Voltage (kV)	**Safe Approach Distance For Ordinary Persons (mm)**
Low Voltage	600
Above *LV*, up to and including 33	900
50, 66, 110	2100
132	2100
220	2900
275	2900
330	3400
400	4400
500	4400
Nominal Pole to Earth dc Voltage (kV)	**Safe Approach Distance For Ordinary Persons (mm)**
+/- 25	900
Above +/- 25, up to +/- 150	2100
Above +/-150, up to +/- 350	2900
+/- 400	3400

5.8 Safe Approach Distances for Vehicles Operated by Instructed Persons or Authorised Persons

Table 6 provides recommended *Safe Approach Distance*s for vehicles operated by *Instructed Person*s or *Authorised Person*s. It is based upon:

- For *Low Voltage*, a *Safe Approach Distance* of 600mm; and
- For *High Voltage* the distances are chosen as equal to the *Safe Approach Distances* contained in Table 2 of this document.

TABLE 6
Safe Approach Distances for Vehicles Operated by Instructed Persons or Authorised Persons

Nominal Phase to Phase Voltage (kV)	**Safe Approach Distance for Instructed or Authorised Persons (mm)**
Low Voltage	600
Above *LV*, up to and including 33	700
50	750
66, 110	1000
132	1200
220	1800
275	2300
330	3000
400	3300
500	3900
Nominal Pole to Earth dc Voltage (kV)	**Safe Approach Distance for Instructed or Authorised Persons (mm)**
+/- 25	700
+/- 85	1000
+/- 150	1200
+/- 270	1800
+/- 350	2500
+/- 400	2900

6 Entry to Restricted Areas

For the safety of *Employee*s entering a potentially hazardous environment and to maintain system security, access to *Restricted Area*s is controlled. Signatories achieve control by approving or delegating authority to persons required to act on their behalf to perform the duty concerned.

6.1 Requirements to enter Restricted Areas

Entry to *Restricted Area*s shall be gained in accordance with the *Approved* procedures.

*Employee*s required to enter *Restricted Area*s shall be given a *Site Introduction*.

*Employee*s required to enter *Restricted Area*s shall, on entering a *Restricted Area*, record the entry as per the *Approved* procedures.

6.2 Authorisation to enter Work Sites

Authorisation to enter *Work Sites* controlled by an *Access Authority* shall be gained in accordance with these rules and *Approved* requirements.

6.2.1 Working under Access Authority conditions

All *Employee*s shall be given a *Work Site Introduction* and sign on to the *Access Authority*.

6.2.2 Visiting Work Sites controlled by Access Authority conditions

*Employee*s / *Ordinary Person*s shall only be given access to visit *Work Sites* controlled by an *Access Authority* after they have been given approval by the *Person In Charge* and received a *Work Site Introduction*. They shall remain under the direct and continuous supervision of the *Person In Charge*, or their delegate.

The *Person In Charge* shall ensure that the visit does not compromise the *Access Authority* conditions.

6.3 Access and egress

A practical method of access and egress for *Employee*s, their vehicles and *Mobile Plant* shall be maintained at all times.

While *Employee*s are working in a normally unattended *Station* with the doors or gates unlocked to provide sufficient exit facilities, all reasonable and practicable precautions shall be taken to prevent unauthorised entry.

An *Employee* who leaves an unattended *Station*, building or enclosure shall ensure that all doors and gates are securely locked.

7 Switching Sheets

A *Switching Sheet* shall be used for *Isolation*, restoration, commissioning, decommissioning or reconfiguration of *Power System Apparatus* and shall be completed in accordance with *Approved* procedures.

Exceptions

A *Switching Sheet* is NOT required for:

(a) An *Emergency* where immediate action shall be taken to prevent injury to people or damage to *Apparatus*. The resulting actions shall be reported immediately to the *Operating Authority* and recorded as soon as practicable in the appropriate *Log*.

(b) Performing *Approved* routines.

(c) Routine functional testing performed using an *Approved* procedure where no *Isolation* is required.

(d) Generator start-up, control and shutdown and operation of on load tap changers. If the operation of the generator or tap changer is a necessary part of a longer sequence, this shall be included on a *Switching Sheet*.

(e) Replacement of faulted fuses where *Isolation* is not required.

(f) Any *Low Voltage Apparatus* that does not form part of the main *Low Voltage* distribution network, for example service work and customer maintenance work.

(g) Fault finding on *Low Voltage* control and protection circuits.

(h) Changes to protection. If the protection change is a necessary part of a longer sequence, this shall be included on a *Switching Sheet*.

(i) Switching performed from a network operations control room using *Approved* practices, where manual field switching is not required.

8 Isolation

Isolation is provided to ensure disconnection from sources of energy in the process of making *Apparatus* safe for the work to be performed.

8.1 General principles of Isolation

(a) *Isolated Apparatus* shall be rendered incapable of being *Energised* without premeditated and deliberate action.

(b) *Apparatus* shall be *Isolated* by the use of an *Approved* method.

(c) All *Isolation* operations shall be identified on a *Switching Sheet*.

(d) Where *Isolation* points have provision for locking, such locking arrangements shall be used to prevent re-energising. If the *Isolation* point is not fitted with a built-in provision for locking, an alternative lock or other means of immobilising a point of *Isolation* shall be used.

(e) *Isolation* points shall be *Tagged*. Where an *Isolation* point is used for multiple *Access Authorities* it shall:

i. have a separate *Tag* for each *Access Authority:* or

ii. have a separate *Tag* for each *Switching Sheet*; or

iii. be *Tagged* in accordance with *Approved Switching Sheet* procedures; or

iv. be cross locked in accordance with *Approved Isolation* procedures.

(f) *Tags* (other than *SCADA*) shall be suitably displayed, and include:

i. 'Danger - Do Not Operate';

ii. '*Access Authority* or *Switching Sheet* No.';

iii. 'Applied to' (print description and status of *Apparatus*);

iv. 'Applied by' (print name);

v. 'Signed' (Signature); and

vi. 'Date' (Date of *Tag* placement).

(g) *Apparatus* operated via *Remote Control* subsequent to local *Isolation* shall be *Tagged* on the *SCADA* system such that a premeditated action is needed to remove such tagging.

(h) *Isolation* and restoration, including the application and removal of *Tags*, shall only be undertaken by an *Authorised Person*.

(i) High Voltage *Apparatus* used as a point of *Isolation* shall not be worked on.

(j) *Isolation* points can only be altered with the approval of the *Authorised Person* subject to the terms of the *Access Authority*.

8.2 Principles of electrical Isolation

(a) An *Isolation* point shall have a break of a distance appropriate to the voltage and insulating medium that is visible if possible.

Where the *Isolation* point does not have a visible break, it shall:

i. Be withdrawn to the *Isolated* position; or

ii. Be proven *De-energised* and *Approved Earthing Devices* applied to confirm *Isolation*; or

iii. Have control circuits *Isolated*, locked (as appropriate) and *Tagged*. Where *Isolation* is performed by an MCB / CB which cannot be locked, further *Isolation* shall be required ie withdrawal of all applicable fuses / links to provide a double break.

(b) VT and CVT secondaries shall be *Isolated* by the withdrawal of all applicable fuses / links or by opening an *Isolation* switch or MCB. The fuses / links shall be secured or the *Isolation* switch / MCB shall be locked. Applicable VT selection switches shall be *Tagged*.

In addition to the above, for work on a CVT secondary termination box a risk assessment shall be carried out to determine the need for additional isolation or other safety measures to guard against any exposed high voltage terminal associated with the secondary of the CVT. Further *Isolations* by the withdrawal of fuses / links or opening MCB's or slide disconnect links to provide a double break from *LV* supplies may be required.

(c) Where *Isolation* of *Low Voltage* circuits requires the withdrawal of fuses / links, all subsequent exposed *Live* terminals shall be made safe.

(d) Where customers remain connected within a *De-energised* section of the *Power System*, then a risk assessment shall be carried out to determine the need for additional *Isolation* or other safety measures to guard against alternative sources of supply eg customer generators and solar cells, *Approved* procedures must be followed.

NOTE:

Where a switch truck / carriage has been removed from its cubicle, other safety measures shall be taken to prevent access to Live Conductors, eg spout shutters locked, busbar covers installed, switchgear door locked and Tagged.

8.3 Principles of mechanical Isolation

(a) *Apparatus* shall be unwound, untensioned or drained, vented and depressurised to prevent uncontrolled movement, or otherwise made safe for work.

(b) An Isolation device shall have an appropriate design to withstand the hydraulic, pneumatic, or mechanical energy.

(c) All necessary gates, valves and mechanical linkages utilised as Isolation points shall be restrained and locked in position and Tagged.

(d) Rotating and linear actuating Apparatus shall be stationary, and where appropriate, constrained and / or its motive force and control circuits Isolated.

(e) Pressure vessels, penstocks, piping, ducts, and vents shall be Isolated, and drained where appropriate, to ensure their condition / status remains unchanged for the duration of the work.

(f) Valves utilised as drains shall be *Tagged*.

(g) Motorised valves and gates shall have their control and / or power circuits Isolated.

(h) Where *Energised Apparatus* cannot be *De-energised*, an appropriately designed and *Approved* locking device shall be used to prevent movement.

(i) Systems used to apply and maintain seals, shall be monitored for the duration of the work.

(j) Where the integrity of the Isolation device is questionable, further Isolation or Additional Safety Measures are required.

(k) Where practical, the *Apparatus* shall be proven *De-energised*.

9 Earthing

Apparatus is *Earthed* to ensure and maintain the effective dissipation of electrical energy to the general mass of earth.

The correct application of *Earths* and the maintenance of *Earthed* and *Equipotential Work Area* conditions, aid in providing a safe *Work Site*.

9.1 General principles of earthing

(a) *Electrical Apparatus* shall be *Isolated* from the *Power System* and proved *De-energised* prior to earthing.

(b) Each *Conductor* in a multi-phase circuit shall be proved *De-energised*.

(c) Proving *De-energised* shall be done as close as possible to the earthing position.

(d) Only *Approved* voltage detection / indication devices shall be used.

(e) Only *Approved Earthing Devices* shall be used.

(f) Earthing circuits shall not contain fuses.

(g) *Earthing Devices* shall be applied / operated with *Approved* tools and methods by appropriately trained *Employee*s.

(h) *Earthing Devices* shall be short-circuited and applied to all phases.

(i) When applying *Earthing Devices* manually, handling of the *Earthing Device* shall be kept to a minimum.

(j) *Earthing Devices* shall be applied with a minimum of time between proving *De-energised* and application.

(k) *Earthing Devices* shall be applied to a *Recognised Earth Point*.

(l) *Recognised Earth Point*s shall be selected on the following prioritised basis.

i. *Station* earth grid, ganged isolator position or *Approved* structure earthing points;

ii. Pole top transformer *HV* earth only;

iii. Ground rod of an installed pole stay;

iv. Galvanised pole reinforcing stakes; and

v. *Approved* temporary earthing stake installed to a minimum depth of 600 mm into virgin ground.

(m) *All* work shall be done between *Earths* unless, due to lack of space or design, it is not physically possible to apply more than one set of *Earths*. These situations may include pole substation *HV* droppers, machine stator windings and *High Voltage* motors.

(n) *Earths* shall be placed as close as practicable to the *Work Site*.

(o) For *Apparatus* where *Earths* cannot be applied at or within sight of the work location and retained for the duration of the *Access Authority*, *Earths* shall be applied at or near all points of *Isolation*, provided that:

i. For *Station Apparatus*: no work shall commence on *Isolated* busbars and *Apparatus* until they have been positively identified and proved *De-energised* at the work location; and

ii. For Underground Cables:

- No work shall commence on any *Isolated* underground cable until its identity at the work location has been established beyond any possible doubt. If there is any doubt, *HV* cables shall not be worked on until spiked or cut with an *Approved* device
- Insulated work practices shall be used
- *Equipotential Work Area* Conditions shall be created and maintained

(p) All work, except where insulated work practices are employed, shall be done under *Equipotential Work Area* conditions.

Equipotential Work Area conditions shall be created and maintained by the:

i. Placement of *Earths* where the *Conductor* will not be broken within an *Isolated* and *Earthed* section and there are no earths immediately adjacent to the *Work Site*; or

ii. Application of *Additional Safety Measures* where the *Conductor* will be broken within an *Isolated* and *Earthed* section.

Additional Safety Measures may comprise the application of more *Earths* connected to the same physical *Recognised Earth Point*, bridging, bonding and short-circuiting, or any required combination of these.

(q) *Operational Earths* shall be *Tagged* when common to multiple *Access Authorities*. *Tags* shall be applied for each *Access Authority* and reference the *Access Authority* number.

(r) *Operational Earths* shall only be removed as per the conditions of the *Access Authority*.

(s) *Mobile Plant* and / or other equipment such as scaffolding being used in the vicinity of *Energised Conductors* shall be *Earthed* in accordance with *Approved* procedures.

(t) Earthing details shall be entered in the *Approved Log*.

(u) When applied, earth switches, other than those used for discharging, shall be locked and *Tagged*.

WARNING:

Cables may hold electrical charge for a considerable time following Isolation or testing. After testing, or Isolation, they shall be treated as ENERGISED until Earthed. After Earths are removed, electrical charge may build up in the cable over time.

9.2 Earthing Device application

(a) Prepare *Earthing Device* for application by:

i. Connecting portable earth tail to a *Recognised Earth Point*; or

ii. Placing circuit breaker / isolating switch in appropriate position to prove *De-energised*. Prove operation of the voltage detection device in accordance with the manufacturer's instructions where applicable.

(b) Prove *De-energised* by:

i. A voltage detection device as close as possible to the earthing position; or

ii. Checking integrated voltage indication device.

Where it is not possible to prove *De-energised*, confirm *De-energised* through the status of interlocks, circuit breakers, disconnectors and local *SCADA* Systems.

(c) Immediately prove operation of the voltage detection device in accordance with the manufacturer's instructions where applicable.

(d) Close discharge earth switches where installed.

(e) Apply *Earthing Device*.

(f) Record details of applied *Earthing Device* in the *Approved Log*.

10 Delineation of Work Site

Work Site delineation is provided to direct movement of the work party to the area in which it is safe to work under the terms and conditions of the *Access Authority*.

All delineated *Work Sites* shall:

(a) Be established prior to the issue of the *Access Authority*.

(b) Be defined by *Barrier Markers* erected to indicate, as clearly as possible, the *Work Site* in which work is to be performed. Where it is not possible and / or practicable to use physical *Barrier Markers, Approved* procedures shall be followed.

(c) Be arranged so that the *Apparatus* to be worked on is accessible without interfering with the *Barrier Marker*s.

(d) Have a clearly defined entry point. This may require separate entry points for personnel and vehicles.

(e) Have appropriate *Barrier Marker*s and / or signs placed at points where it is possible to move into the *Safe Approach Distance* to *Conductors*, which shall be regarded as *Energised*.

(f) Have appropriate *Barrier Marker*s and / or signs placed at points where other *Hazards* exist, eg excavations.

*Employee*s shall not cross under / over or interfere with *Barrier Marker*s that delineate a *Work Site* except in an *Emergency* situation that threatens the safety of personnel, *Apparatus* or the environment and then only with due consideration for personal safety.

11 Access Authorities

An *Access Authority* is the form of authorisation, which allows access to work on or near, or for the testing of *Power System Apparatus*.

11.1 General principles of Access Authority

The issue and receipt of *Access Authorities* and the transfer of *Person In Charge* shall occur at the Location / *Work Site*.

Access Authorities are issued by *Issuing Officers* to a *Person In Charge* who shall independently determine that safe conditions exist at the *Work Site* noting all *Hazards* / *Danger Points*, *Control Measures* and / or conditions for testing, prior to accepting the *Access Authority*.

Access Authorities that are issued for *Work Sites* near *Apparatus* can run in conjunction with other *Access Authorities* providing that any delineated *Work Site* pertaining to *Access Authorities* on any *Apparatus* shall not be entered into without approval of the *Person In Charge*.

The original of any *Access Authority* shall be under control of the *Person In Charge.* The *Access Authority* shall be readily available for inspection at the Location / *Work Site* at all times that the work party is on site.

Where an *Isolation* is provided that allows access to multiple items of *Apparatus*, multiple *Access Authorities* may be issued. Where multiple *Access Authorities* are issued, they shall be coordinated / recorded on a central *Log*.

While testing is being carried out under an *Access Authority*, there shall be no other *Access Authorities* issued on that item of *Apparatus*.

A copy of all *Switching Sheets* used to provide safe access shall be produced on request.

11.2 When an Access Authority may not be required

An *Access Authority* may not be required:

(a) By *Qualified Employee*s, authorised to perform defined tasks, where the *Hazards* are such that *Access Authority* controls are not required.

(b) By *Operator*s performing routine operating duties.

(c) By *Qualified Employee*s performing functional testing routines.

(d) By *Qualified Employee*s performing *Live* work using *Approved* procedures.

(e) By work parties, when work is on *Apparatus* that has been disconnected, physically removed from the *Power System* and relocated to a designated maintenance area.

(f) By *Employees* constructing new *Apparatus*, where the work is not performed within a *Power System Restricted Area*.

(g) In *Emergency* situations where life, *Apparatus* or property is in danger. This does not negate the need for *Isolation*, and where applicable, earthing.

(h) Fault finding on *Low Voltage* control and protection circuits.

11.3 Communication of Operational Information for issue of an Access Authority at a remote Work Site

In circumstances where the *Isolation* and operational earthing points, if applicable, are remote from the *Work Site*, *Access Authorities* may be issued based on the Communication of *Operational Information*.

11.3.1 General requirements before issue

Operating personnel shall establish communication to determine and agree who will perform the role of Coordinating *Operator*. The Coordinating *Operator* shall control all operations and the communication of *Operational Information* to the *Work Site Issuing Officer*. An *Operator* need not be authorised to operate at the remote *Station/*s to carry out the role of Coordinating *Operator*.

Before operations are commenced all *Switching Sheets* shall be checked and approved.

Before *Operational Information* can be communicated, the following conditions shall be met:

(a) All items on the Coordinating *Operator*'s *Switching Sheet* to provide *Isolation* and earthing, if applicable, shall be completed, up to the point of communicating *Operational Information* to the *Work Site Issuing Officer*.

(b) Clear communication has been established between the Coordinating *Operator* and the *Work Site Issuing Officer*.

(c) The Coordinating *Operator* and the *Work Site Issuing Officer* have exchanged names and *Authorisation Numbers*.

11.3.2 Roles for the Communication of Operational Information

11.3.2.1 Coordinating Operator

The Coordinating *Operator* shall:

(a) Establish and maintain clear communication with Remote *Operators* involved in the *Isolation* and earthing (if applicable) of the *Apparatus*.

(b) Coordinate all operations and record on the *Switching Sheet*.

(c) Receive verbal confirmation of *Isolation* and earthing details (if applicable) from remote *Stations* / Locations.

(d) Establish clear communication with the *Work Site Issuing Officer*, confirm *Apparatus* involved and communicate the following *Operational Information* to the *Work Site Issuing Officer*:

i. Coordinating *Operator*'s name, *Authorisation Number* and location;

ii. *Switching Sheet* number/s;

iii. Status of *Apparatus* / *Work Site*; and

iv. *Hazards* / *Danger Points* including additional *Control Measures* and / or conditions as required.

(e) Record the following *Operational Information* on the Coordinating *Operator*'s *Log*:

i. The name, *Authorisation Number* and contact details of the *Work Site Issuing Officer*;

ii. Communication of *Operational Information* in the *Access Authority* / *Operational Information* section; and

iii. *Apparatus* to which the *Operational Information* applies.

(f) On return of the *Operational Information* from the *Work Site Issuing Officer*:

i. Confirm the *Operational Information* communicated;

ii. *Log* the return of the *Operational Information*; and

iii. Initiate the return to service of the *Apparatus*.

11.3.2.2 Remote Operator

The Remote *Operator* shall:

(a) Establish and maintain clear communication with the Coordinating *Operator*.

(b) Operate under the direction of the Coordinating *Operator*.

(c) Record on the *Switching Sheet* the completion times of the operations they conduct.

(d) Confirm *Isolation*, earthing (if applicable) and / or operations to the Coordinating *Operator* when completed.

(e) Record the following on the Remote *Operator*'s *Log*:

i. Local operations, earthing (if applicable) as required by *Approved* procedures; and

ii. Verbal confirmation of local operations and earthing (if applicable) given to the Coordinating *Operator*.

(f) On receipt of verbal confirmation from the Coordinating *Operator* that the *Apparatus* is ready to be returned to service:

i. *Log* the return of verbal confirmation; and

ii. Perform local operations under the direction of the Coordinating *Operator* to return the *Apparatus* to service.

11.3.2.3 Work Site Issuing Officer

The *Work Site Issuing Officer* shall:

(a) Establish and maintain clear communication with the Coordinating *Operator*.

(b) Record on the *Access Authority* and read back to the Coordinating *Operator* the following:

i. Coordinating *Operator*'s name, *Authorisation Number* and location;

ii. Confirmation of the Location */ Apparatus* / *Work Site*;

iii. Status of *Apparatus* / *Work Site*;

iv. *Switching Sheet* number/s; and

v. *Hazards* / *Danger Points* including additional *Control Measures* and / or conditions as required.

(c) The *Work Site Issuing Officer* then issues the *Access Authority* in accordance with these rules.

(d) When the *Access Authority* has been surrendered, cancel the *Access Authority* in accordance with these rules.

(e) On cancellation of the *Access Authority*:

i. Establish communication with the Coordinating *Operator*;

ii. Record name, *Authorisation Number*, location of Coordinating *Operator* on the *Access Authority*;

iii. Advise the Coordinating *Operator* of the cancellation of the *Access Authority*; and

iv. State whether the *Apparatus* is / is not available for service subject to any limitations that may be applicable.

11.4 General requirements before issue of Access Authority

Before an *Access Authority* can be issued:

(a) The Location */ Apparatus* / *Work Site* in the General Section of the *Access Authority,* shall be rendered safe for the work as described.

(b) When working in the vicinity of *Live Apparatus,* all known *Hazards* / *Danger Points* shall be identified and listed on the *Access Authority*.

(c) The conditions of *Isolation* shall only be varied when the Description of Work calls for temporary changes to the conditions of *Isolation*. These changes shall be noted under the *Hazards* / *Danger Points*, conditions for testing section of the *Access Authority*.

(d) The *Issuing Officer* and the *Person In Charge* shall evaluate any safety implications arising from the temporary changes to the conditions.

(e) The *Issuing Officer* and the *Person In Charge* shall agree on the conditions of the *Access Authority*. The *Person In Charge* shall inform the *Issuing Officer* of any intended use of special tools, vehicles or plant, which may have a bearing on the preparation of the *Work Site*.

(f) The *Work Site* is prepared so that the *Safe Approach Distances* cannot be encroached without crossing a physical *Access Authority Barrier Marker*. Where it is not possible to use physical *Barrier Markers* an *Approved* alternative method shall be used to delineate the boundary between the safe *Work Site* and *Energised Apparatus*. When this is not practical it shall be noted under the *Hazards* / *Danger Points* of the *Access Authority*.

(g) The *Issuing Officer* is able to issue the *Access Authority* at the *Work Site* explaining the status of the *Apparatus* / *Work Site* and describe the *Hazards* / *Danger Points* and any relevant information to the *Person In Charge* and if possible, to the *Instructed Person*s.

(h) The *Person In Charge* has current *Accreditation* to receive an *Access Authority*.

11.5 Access Authority – Issue and Cancellation

11.5.1 Issue

(a) After having confirmed that the general requirements have been met, the *Issuing Officer* completes the details of the *Access Authority* form (Attachment B) following the 'Instructions for use of the *Access Authority* form' (Attachment C).

(b) Should any *Hazards* / *Danger Points* exist at the *Work Site* they shall be described on the *Access Authority*; for example:

- All other *Apparatus Energised* and *In Service*
- Overhead *Conductors Live* and *In Service*
- Wiring in cubicle *Live*
- Residual water may be present
- Air bus contains residual pressure
- *Induction Hazards* may be present
- Underground cables / services *Live* and *In Service*

(c) When testing is required in the course of work, the *Issuing Officer* shall:

- state this in the Description of Work section; and
- in the appropriate section, list or reference all *Control Measures* and / or conditions for Testing that apply.

(d) The *Issuing Officer* shall identify at the *Work Site* the status of the *Apparatus* / *Work Site* and describe the *Hazards* / *Danger Points* and any relevant information to the *Person In Charge* and, if possible, to the *Safety Observer* and *Instructed Person*s.

(e) When the *Person In Charge* agrees to the conditions of the *Access Authority*, the *Issuing Officer* issues the *Access Authority* by signing in the relevant position.

(f) The *Access Authority* becomes current when the *Person In Charge* signs to acknowledge receipt of the *Access Authority*.

(g) On receipt of the *Access Authority* the *Person In Charge* assumes control of the *Work Site*.

(h) When a *Safety Observer* is required, the *Person In Charge* shall ensure that a *Safety Observer* is appointed exclusively to act in that capacity and understands the specific *Hazards* / *Danger Points* that have necessitated their appointment as a Safety Observer. The *Safety Observer* shall sign on the *Access Authority* in the nominated space provided.

(i) The *Person In Charge* ensures the *Safety Observer* and *Instructed Person*s understand the status of *Apparatus* / *Work Site* covered by the *Access Authority*. The *Instructed Person*s then sign on to the *Access Authority*.

(j) The *Issuing Officer* records the issue of the *Access Authority* in the *Log*.

11.5.2 Cancellation

(a) On completion of the work as described on the *Access Authority*, all *Safety Observer*s and *Instructed Person*s named on the *Access Authority*, shall sign off, noting the time and date.

(b) The *Person In Charge* surrenders the *Access Authority* and shall state whether the *Apparatus* is / is not available for service subject to any limitations that may be applicable.

(c) The *Access Authority* is then cancelled by the *Issuing Officer*.

(d) The *Issuing Officer* records the cancellation of the *Access Authority* in the *Log*.

11.6 Access Authority where Testing required

Where *Apparatus* shall be prepared for testing to be carried out safely, the *Instructed Person* - Test Acknowledgment and *Access Authority* Status / *Person in Charge* Transfer sections shall be completed. This is required for:

(a) Testing of *Power System Electrical Apparatus* where lethal currents may occur, either due to the application of testing voltages or through *Power System* effects that may be transferred to the *Apparatus* under test, eg if *Operational Earths* shall be removed for the duration of the test, the *Apparatus* may become *Energised* through induced voltages.

(b) Testing of *Power System* civil, mechanical and hydraulic *Apparatus* where the requirements of the test may produce dangerous conditions.

Prior to the testing procedure commencing the *Person In Charge* shall complete the required details in the *Access Authority* Status / *Person In Charge* Transfer section and write "Testing" in the "Status / Transfer" section. The *Instructed Persons* shall then acknowledge the commencement of the testing by signing in the Test Acknowledgement Section.

Where testing requires that *Operational Earths* or other safety measures be removed, they shall only be removed immediately prior to the test and replaced immediately after the test is completed.

In situations where *Instructed Person*s leave the *Work Site* before tests are completed, they shall strike out the Test Complete box in the Test Acknowledgement Section and then sign off the *Access Authority*.

11.7 Person In Charge Transfer

11.7.1 Where transfer of Person In Charge is required:

(a) The current *Person In Charge* shall advise the work party and the *Operating Authority* where required, before any transfer of *Person In Charge* is undertaken.

(b) The current *Person In Charge* shall ensure the proposed *Person In Charge* is authorised, informed of, and agrees to all the terms and conditions for the Receipt of *Access Authority* section and sign off the *Access Authority*.

(c) The proposed *Person In Charge* signs on to and agrees to the terms and conditions of the *Access Authority* and immediately assumes responsibility, or follows the *Approved* procedure for a delayed transfer.

11.7.2 When there is a delay in transferring to a new Person In Charge

The proposed *Person In Charge* shall:

(a) Follow the *Approved* procedure;

(b) Be aware of and agree to all the terms and conditions for the *Access Authority* Status / *Person In Charge* Transfer section;

(c) Confirm the Status of *Apparatus* / *Work Site*, *Hazards* / *Danger Points* and all *Control Measures* have not been changed; and

(d) The proposed *Person In Charge* signs on to and agrees to the terms and conditions of the *Access Authority* and immediately assumes responsibility.

11.8 Person In Charge Transfer / Access Authority Surrender in Exceptional Circumstances

Where *Employee*s are unable to fulfil their responsibilities due to exceptional circumstances such as injury, illness or asset recall, the following requirements shall apply.

11.8.1 Person In Charge Unavailable

(a) The *Issuing Officer,* in consultation with the *Person In Charge*'s line manager shall transfer or surrender the *Access Authority* in accordance with the *Person In Charge*'s responsibilities.

(b) The line manager shall ensure the *Person In Charge* is unable to enter the *Work Site* until notified of the changes to the *Access Authority*.

11.8.2 Safety Observer / Instructed Person Unavailable

(a) The *Person In Charge,* in consultation with the *Safety Observer / Instructed Person*'s line manager shall sign off the *Access Authority* on behalf of the *Safety Observer / Instructed Person*.

(b) The line manager shall ensure the *Safety Observer / Instructed Person* is unable to enter the *Work Site* until notified of the changes to the *Access Authority*.

11.9 Work permits

In addition to the *Access Authority* which is required to safely access *Power System Apparatus* that is under operational control, other work permits may be required, eg hot work, confined space and *Live* line. These work permits can be used independently as a form of work control system and are subject to *Approved* safe work procedures and work practices.

12 Interfacing with Non-Signatories

Where *Isolation* or access requirements cross operational boundaries with non-signatories, or personnel require restrictions on *Apparatus* for work external to the *Power System,* a formal means of communication shall be used.

12.1 General requirements

An *Apparatus Interface Statement (*Attachment E) is the form to be used by a signatory company for communicating the operational status of *Apparatus* to a non-signatory company.

When the operational status of *Apparatus* is required from a non-signatory company, they may use the *Apparatus Interface Statement* or their equivalent.

Where the non-signatory is a member of the Tasmanian Electricity Supply Industry, switching sheets may be used as evidence of the status of *Apparatus* as confirmation of the isolations and earthing performed are noted on the *Switching Sheet*s.

Where an *Apparatus Interface Statement* has been issued, the status of *Apparatus* shall not be altered until the *Apparatus Interface Statement* has been surrendered and cancelled.

12.2 Roles for interfacing with non-signatories

12.2.1 Issuing Officer

The *Issuing Officer* shall:

(a) Confirm *Apparatus* operational status is appropriate for work to be performed.

(b) Complete the detail required in the:

i. General Section;

ii. Status of *Apparatus;* and

iii. *Hazards* / *Danger Points.*

(c) Ensure two copies of the *Apparatus Interface Statement* are completed containing the same unique identifying number. The original form shall be issued to the *Authorised Officer* and the *Issuing Officer* shall retain a copy;

(d) Familiarise the *Authorised Officer* with the *Apparatus Interface Statement*.

(e) Confirm that the *Authorised Officer* understands and agrees to:

i. The status of the *Apparatus*; and

ii. *Hazards* / Danger Points.

(f) Ensure the *Authorised Officer* completes the Receipt Section and retains the original *Apparatus Interface Statement* form; and

(g) Record the *Apparatus Interface Statement* details on the *Approved* Log.

On completion of the work the *Issuing Officer* shall:

(h) Check that the *Authorised Officer* has completed and signed the Surrender Section of the *Apparatus Interface Statement*;

(i) Acknowledge and address appropriately any restrictions;

(j) Ensure the *Authorised Officer* is aware that the status of the *Apparatus* can now change;

(k) Complete the detail required in the Cancellation Section of the *Apparatus Interface Statement*; and

(l) Record the cancellation of *Apparatus Interface Statement* on the *Approved Log*.

12.2.2 Authorised Officer

The *Authorised Officer* shall:

(a) Confirm they understand and agree with the status of the *Apparatus* and that it is appropriate for work to be performed.

(b) Complete the detail required in the Receipt Section of the *Apparatus Interface Statement*.

(c) Retain the original of the *Apparatus Interface Statement* for the duration of the work.

(d) Advise the work party of the status of the *Apparatus*.

(e) On completion of the work, advise the work party that the status of the *Apparatus* may change.

(f) Complete the detail required in the Surrender Section of the *Apparatus Interface Statement* and detail any restrictions that apply.

(g) Return original to the *Issuing Officer*.

13 Construction / Commissioning / Decommissioning of Power System Apparatus

This section provides guidelines on the application of the PSSR during construction, commissioning and decommissioning of *Power System Apparatus.*

13.1 Construction

When constructing *Power System Apparatus* in a *Restricted Area* these rules apply.

When constructing apparatus outside *Restricted Areas*, *Approved* safety precautions and procedures shall be used.

13.2 Commissioning

As soon as the *Apparatus* has reached the stage of physical completion and is ready for connection to the *Power System*, the *Apparatus* shall be subject to the scope and application of the PSSR.

13.3 Decommissioned

Where decommissioned *Apparatus* is located in a *Restricted Area* it shall be subject to the scope and application of the PSSR.

Once the decommissioned *Apparatus* has been physically removed from the *Restricted Area* it is no longer subject to the scope and application of the PSSR.

NOTE:

Induction may be present under these circumstances and where considered to be a potential risk these rules shall be adhered to. Refer to Attachment A.

Attachment A: Induction Hazards

Electromagnetic and electrostatic are the two important components of *Induction* when working on or near *Electrical Apparatus*. It is important to recognise that both components are always present.

Electromagnetic Induction

A voltage will be induced in a *Conductor* situated in the magnetic field of another *Conductor* carrying current. The magnitude of the induced voltage will be directly proportional to the degree of magnetic coupling plus the length of, and the load current in, the parallel *Conductor*.

Most often, the adjacent load carrying *Conductor* is a three phase line which theoretically could produce a zero magnetic field under balanced conditions. However because of the *Conductor* layout and spacing, a small resultant magnetic field is produced under normal operating conditions, which will result in an induced voltage in a parallel line. The magnitude of this voltage can be lethal.

Under *Power System* fault conditions, especially earth fault conditions, the magnitude of the magnetic field will be significantly greater due to the unbalanced nature of the current in the line as well as the magnitude of the current being significantly greater. Induced voltages that are two orders of magnitude higher than balanced load conditions can be expected at this time.

If the ends of the induced *Conductor* are connected via other *Conductors* or the earth to form a loop, then current will flow in the loop. The magnitude of this circulating current will be dependent on the induced voltage and the impedance of the loop. Again this circulating current will be two orders of magnitude greater during *Power System* fault conditions.

Therefore it is extremely important at any *Work Site* that the *Hazards* posed by these induced voltages and circulating current be countered by the application of additional *Approved Earths* at the *Work Site* to ensure that all *Apparatus* are maintained at the same potential. The earth *Conductors* shall be sufficiently rated and the connections shall be of a sufficiently low impedance to cope with the extremely high induced voltages and currents that can be expected during *Power System* fault conditions. Lethal potential differences shall not be allowed to develop at the *Work Site* under these circumstances.

The *Earths* shall be applied to the *Conductors* at the *Work Site* so that if disconnections are made within the *Apparatus* being worked on, all *Apparatus* continues to be maintained at the same earth potential.

Electrostatic Induction

An insulated *Conductor* in the electrostatic field produced by other *Live Conductors* will acquire a charge, giving it a voltage above earth potential. If such a *Conductor* makes contact with another *Conductor* (such as a human body) at another potential, there is an initially large Discharge current followed by a continuous Discharge current. The combined effect of this can vary from negligible to lethal for a human being.

The transferred charge, and even more importantly, the current which flows when the *Conductor* is *Earthed*, depends on the capacitance of the *Conductor* to earth (dependent on size and height above ground), the capacitance between the *Energised Conductor* and the insulated *Conductor* (dependent on separation), and the voltage of the *Energised Conductor*.

Electrostatic *Induction* is experienced when all *Earths* are removed (as for certain tests).

Therefore the removal of *Approved Earths*, (with Equipment designed for the purpose), should occur only after the test *Apparatus* is connected. Following the test, the *Earths* shall be replaced before any persons approach the *Apparatus*.

Both forms of *Induction* are controlled by the correct application of *Approved Earths* to each side of the work, *Additional Safety Measures* and / or insulated work procedures.

It is the work party's responsibility to ensure that they communicate their intentions to the local *Issuing Officer*, and (for trained and authorised personnel, eg line crews), where necessary, place sufficient *Approved Work Earths* to ensure that they are within a zone of equal electrical potential. The applied *Earths* should be clearly visible from the *Work Site* and provide an electrical bond between the *Apparatus* and a *Recognised Earth Point*.

INDUCTION EFFECTS

INDUCTION MECHANISM	**ELECTRO-MAGNETIC**	**ELECTROSTATIC**
Main Effect: (voltage rise)	Induced potential differences (transformer effect)	Capacitive charge
Seen as:	Voltages in *Isolated* lines and current flow in *Earthed* parallel pathways	Voltage rise in un*Earthed* metallic objects
Signs:	Circulating currents in *Earthed* lines, fences and pipelines	Corona radio interference audible noise
Danger:	Lethal voltages and current flow	Higher voltage Discharge
Control Measures:	Appropriate application of Operational and *Work Earths*. *Additional Safety Measures*. Insulated work procedures; or *Equipotential Work Area* conditions shall be created and maintained.	

WARNING!

Magnetic Fields May Affect Cardiac Pacemakers and other medical implants.

Persons with Cardiac Pacemakers and other medical implants are warned the electromagnetic fields existing at Power System sites may adversely affect the operation of these and could be hazardous to health.

Attachment B: Access Authority

Tasmanian Power System Safety Rules

ACCESS AUTHORITY

No AA 1000

COMMUNICATION OF OPERATIONAL INFORMATION

Received from Co-ord. Operator _____ **Auth No.**_____ **Location** _____

GENERAL

Location / Apparatus / Work Site _____

Description of Work _____

Contact person & Ph No. / Call sign _____

STATUS OF APPARATUS / WORK SITE

The above Apparatus / Work Site is

In-service **De-energised** **Isolated** **Earthed** ***(Cross out non applicable conditions)***

as prepared in accordance with Switching Sheet No._____ **with all isolation and earthing points highlighted**

HAZARDS / DANGER POINTS

The following Hazards / Danger points have been identified. _____

The following control measures and / or conditions for testing shall apply. _____

ISSUE

1) The above Location / Apparatus / Work Site has been made safe, for the work as described in the "Description of Work".
2) All isolations, earthing where applicable, Hazards / Danger points have been indicated.
3) Work Site introduction has been given.
4) The Person in Charge is authorised to receive this Access Authority.

	Print name	Signature	Auth. No.	Contact No.	Time	Date
Issuing Officer						

RECEIPT

1) I am authorised by the operating authority to receive this Access Authority.
2) I understand the terms and conditions of the Access Authority and the precautions and control measures taken.
3) I shall ensure all personnel entering the work site understand the terms and conditions of the Access Authority, the precautions taken as applicable and have signed on the Access Authority.
4) I have received a Work Site introduction.

	Print name	Signature	Auth. No.	Contact No.	Time	Date
Person in Charge						

SAFETY OBSERVER

1) I fully understand the role and responsibilities of a Safety Observer.
2) I understand the terms and conditions of the Access Authority and the precautions and control measures taken.
3) I understand the specific Hazards / Danger points that have necessitated my appointment as a Safety Observer.
4) I have received a Work Site introduction.
5) I shall perform the role of a Safety Observer exclusively and not perform any other task related to the work activity.

Safety Observer	Sign On			Sign Off		
Print Name	Signature	Time	Date	Signature	Time	Date

INSTRUCTED PERSON

1. I understand the terms and conditions of the Access Authority, the precautions and control measures taken and the relevant warnings.
2. Work Site introduction has been received in accordance with signatories' procedures.

Instructed Person	Sign On			Test Acknowledgement		Sign Off		
Print Name	Signature	Time	Date	Commenced	Complete	Signature	Time	Date

ACCESS AUTHORITY STATUS / PERSON IN CHARGE TRANSFER

1) I am authorised by the operating authority to receive this Access Authority.
2) I understand the terms and conditions of the Access Authority, the precautions and control measures taken.
3) Work Site introduction has been received.
4) I understand the status of the Access Authority.

Person In Charge			Sign On/Off				Status / Transfer
Print Name	Auth No.	Contact No.	Signature On	Signature Off	Time	Date	

SUPPLEMENTARY SIGNATURE SHEETS ATTACHED

Person In Charge 1 2 3 Safety Observer 1 2 3 Instructed Person 1 2 3

SURRENDER

1) All tools, gear and work earths are removed from the Apparatus and Work Site.
2) All personnel have signed off the Access Authority including all Supplementary Signature Sheets.
3) All personnel now regard the apparatus as **UNSAFE TO APPROACH**.

The Apparatus **is / is not** available for service. (Strike out which is not applicable)

Remarks _____

_____

I have advised the Issuing Officer that this Access Authority is now surrendered.

	Print Name	Signature	Auth. No.	Time	Date
Person in Charge					

CANCELLATION

1) All personnel have signed off the Access Authority including all Supplementary Signature Sheets.
2) The Access Authority has been signed by the Person In Charge to indicate that the Access Authority is surrendered.

This Access Authority is now cancelled.

	Print name	Signature	Auth. No.	Time	Date
Issuing Officer					

COMMUNICATION OF OPERATIONAL INFORMATION

Returned to Co-ord Operator _____ **Auth No.**_____ **Location** _____

Attachment C: Instructions for the use of the Access Authority form

***Access Authority* No.**	*Access Authority* number generated by the printing process shall be on the form and is unique.

COMMUNICATION OF OPERATIONAL INFORMATION

This section covers the receipt of the *Operational Information* by the *Work Site Issuing Officer* from the Coordinating *Operator*.

The *Work Site Issuing Officer* shall then record these details on the *Access Authority*.

Receipt of *Operational Information*	*Work Site Issuing Officer* confirms receipt of *Operational Information* by noting the Coordinating *Operator's* name, *Authorisation Number* and location.

GENERAL

This section is general information associated with the *Work Site*, description of work to be performed under the *Access Authority*.

It also provides communication contacts should there be a problem.

This section shall not contain abbreviations for *Stations*, transmission and feeder line names. Device abbreviations such as CB, T/L are acceptable.

Location / *Apparatus* / *Work Site*	Brief description: eg Cluny Power *Station* G1; Sheffield Substation CB Z152; Sheffield-Farrell 220kV No.1 T/L Towers 15 to 21; Pole 68 to Pole 85 Main Road Irish Town.
Description of Work	A clear description of the main tasks to be performed, this shall include any testing e.g. Maintenance and timing tests to 220 kV CB Z152, Upgrade of *HV Conductors*.

Contact Person and Phone No. / Call sign	The contact person is the person arranging / organising the work for the Person In Charge to contact for all issues relating to the work, eg Asset Owner, Project Manager, Works Supervisor, Works Coordinator.

STATUS OF APPARATUS / WORK SITE

This section covers the status of the *Apparatus* / *Work Site* to be worked on or near. It is used to identify the following:

***Switching Sheet* Number**	The *Switching Sheet* number shall be recorded where indicated. Where switching is not required N/A shall be entered.
Condition of *Apparatus* / *Work Site*	The conditions not applicable shall be crossed out.

NOTE:

In the case of Communication of Operational Information this is where the Work Site Issuing Officer records the information received from the Coordinating Operator.

HAZARDS / DANGER POINTS

This section lists all *Hazards* / *Danger Points* that the *Person In Charge,* and where applicable the *Safety Observer*, should be aware of and any *Control Measures* / Conditions for Testing that shall be put in place.

Hazards* / *Danger Points	All *Hazards* / *Danger Points* identified shall be listed in this section.
***Control Measures* / Conditions for Testing**	All *Control Measures* put in place shall be referenced in this section. This also includes additional conditions for Testing.

ISSUE

This section covers the issuing of the *Access Authority* to the *Person In Charge*. It includes four mandatory responsibilities to be actioned by the *Issuing Officer*.

Issue	The *Issuing Officer* shall print name, sign and record *Authorisation Number*, contact number, issuing time and date validating the *Access Authority*.

RECEIPT

This section covers the receipt of the *Access Authority* by the *Person In Charge*. It includes four mandatory responsibilities to be actioned by the *Person In Charge*.

Receipt	The *Person In Charge* shall print name, sign and record *Authorisation Number*, contact number, receipt time and date.

SAFETY OBSERVER

This section records the appointment of, and includes five mandatory responsibilities to be actioned by the *Safety Observer*.

Safety Observer	The *Safety Observer* shall print name and sign on, noting time and date and on completion of performing the *Safety Observer* duties, sign off, noting time and date. If there is insufficient space for all signatures then a Supplementary Signature sheet shall be used.

INSTRUCTED PERSON

This section covers signing the *Access Authority* and includes two mandatory responsibilities to be actioned by the *Instructed Person*s.

Instructed Person **(Sign On / Sign Off)**	Each *Instructed Person* shall print their name and sign on noting time and date, thereby agreeing to the conditions of the *Access Authority*. If there is insufficient space for all signatures then a Supplementary Signature sheet shall be used.

	On completion of the work they are to sign off, noting the time and date.
Instructed Person **(Test Acknowledgement)**	Each *Instructed Person* shall sign Test Acknowledgement – Commenced, prior to the commencement of any testing and on completion of test, sign Test Acknowledgement - Complete. In situations where an *Instructed Person* leaves the *Work Site* before tests are completed, they shall strike out the Test Complete box in the Test Acknowledgement Section and then sign off the *Access Authority*.

ACCESS AUTHORITY STATUS / PERSON IN CHARGE TRANSFER

This section covers *Access Authority* Test commence / Test complete status and *Person In Charge* transfer. It includes four mandatory responsibilities to be actioned by the *Person In Charge*.

PERSON IN CHARGE TRANSFER

Prior to *Person In Charge* transfer, the current *Person In Charge* shall advise the work party and the *Operating Authority* where required. It is necessary that the current *Person In Charge* or *Issuing Officer* ensures the proposed *Person In Charge* is authorised, informed of, and agrees to all the terms and conditions for the Receipt of *Access Authority* section.

Person In Charge Transfer / Access Authority Surrender in Exceptional Circumstances

Person In Charge **(current)**	The *Person In Charge* shall print own name, *Authorisation Number,* strike out the sign on box, sign off, record time, date, and state *Access Authority* status, "Transfer". If transfer is delayed, state *Access Authority* status as "Delayed Transfer".

***Person In Charge* (new)**	When the previous *Person In Charge* has signed off, the new *Person In Charge* shall print own name, *Authorisation Number*, contact number, sign on and strike out the sign off box, record time, date and state *Access Authority* status, "Transfer". If transfer is delayed, state *Access Authority* status as "Delayed Transfer". By doing so the new *Person In Charge* accepts the conditions of the *Access Authority*.

Access Authority Test Status

Prior to *Person In Charge* changing the *Access Authority* status to Testing, the current *Person In Charge* shall, commencing on a new line, print name, *Authorisation Number*, contact number and sign name in the Signature On space and then write "Test Commenced" in the Status / Transfer Section.

Person In Charge	The *Person In Charge* shall print own name, *Authorisation Number*, strike out the sign off box, sign on, record time, date, and state *Access Authority* status, "Test Commenced".

When the Testing is complete the *Person In Charge* shall, commencing on a new line, print name, *Authorisation Number*, contact number and sign name in the Signature On space and then write "Test Completed" in the Status / Transfer section.

Person In Charge	The *Person In Charge* shall print own name, *Authorisation Number*, strike out the sign off box, sign on, record time, date, and state *Access Authority* status, "Test Completed".

SUPPLEMENTARY SIGNATURE SHEETS ATTACHED

This section covers the recording of the number of Supplementary Signature Sheets used for *Person In Charge*, *Safety Observer* and *Instructed Person*. As each supplementary sheet is required, the *Person In Charge* shall indicate by circling the appropriate number for each Supplementary Signature Sheet type.

SURRENDER

This section covers the surrender of the *Access Authority*. It includes three mandatory responsibilities to be actioned by the *Person In Charge*.

***Apparatus* is / is not available for service**	The *Person In Charge* shall state whether *Apparatus* is / is not available for service by striking out which is not applicable.
Remarks	The *Person In Charge* shall note any restrictions that apply or why the *Apparatus* is not available for service.
Person In Charge	The *Person In Charge* shall print name, signature, *Authorisation Number*, time and date.

CANCELLATION

This section covers the cancellation of the *Access Authority*. It includes two mandatory responsibilities to be actioned by the *Issuing Officer*. Once this part is completed the *Access Authority* is cancelled.

Issuing Officer	The *Issuing Officer* shall print name, *Authorisation Number*, time, date and sign.

COMMUNICATION OF OPERATIONAL INFORMATION

This section covers the return of the *Operational Information* by the *Work Site Issuing Officer* to the Coordinating *Operator*.

Operational Information includes the status of the *Work Site*, availability of *Apparatus*, and any limitations that may be applicable.

Return of Operational Information	*Work Site Issuing Officer* confirms return of *Operational Information* by noting the Coordinating *Operator's* name, *Authorisation Number*, location.

NOTE:

Where the space provided on the Access Authority is insufficient to insert the detail required, additional documentation may be utilised and shall be referenced on the Access Authority. The original of any additional documentation shall be attached to the Access Authority.

Attachment D: Instructions for the use of the Access Authority Supplementary Signature Sheet

Introduction

Access Authority Supplementary Signature Sheets shall be used when there is a requirement for more signatures than space allows on the original *Access Authority*.

There is a Supplementary Signature Sheet for each of the following:

- *Instructed Person*s;
- *Access Authority* Status */ Person In Charge* Transfer; and
- *Safety Observer*.

Use of Access Authority Supplementary Signature Sheet

Supplementary signature sheets used shall be consecutively numbered, independent of their use, and the *Person In Charge* shall ensure that the following is recorded:

On the *Access Authority*

- Record the Supplementary Signature Sheet use, by circling the relevant number for each Supplementary Signature Sheet type.

On the Supplementary Signature Sheet

- Record the AA No.
- Record the Sheet No.

All *Access Authority* Supplementary Signature Sheets shall be attached to the *Access Authority*.

Tasmanian Power System Safety Rules

ACCESS AUTHORITY

INSTRUCTED PERSON SUPPLEMENTARY SIGNATURE SHEET

AA No.	
Sheet No.	

1. I understand the terms and conditions of the Access Authority, the precautions and control measures taken and the relevant warnings.
2. Work Site introduction has been received in accordance with signatories' procedures.

Instructed Person	Sign On			Test Acknowledgement		Sign Off		
Print Name	Signature	Time	Date	Commenced	Complete	Signature	Time	Date

Tasmanian Power System Safety Rules

ACCESS AUTHORITY

ACCESS AUTHORITY STATUS / PERSON IN CHARGE TRANSFER SUPPLEMENTARY SIGNATURE SHEET

AA No.	
SHEET No.	

1) I am authorised by the control authority to receive this Access Authority.
2) I understand the terms and conditions of the Access Authority, the precautions and control measures taken.
3) Work Site introduction has been received.
4) I understand the status of the Access Authority.

Person In Charge			Sign On/Off				Status / Transfer
Print Name	Auth No.	Contact No.	Signature On	Signature Off	Time	Date	

Tasmanian Power System Safety Rules

ACCESS AUTHORITY

SAFETY OBSERVER SUPPLEMENTARY SIGNATURE SHEET

AA No.	
Sheet No.	

1. I fully understand the role and responsibilities of a Safety Observer.
2. I understand the terms and conditions of the Access Authority and the precautions and control measures taken.
3. I understand the specific Hazards / Danger points that have necessitated my appointment as a Safety Observer.
4. I have received a Work Site introduction.
5. I shall perform the role of a Safety Observer exclusively and not perform any other task related to the work activity.

Safety Observer	Sign On			Sign Off		
Print Name	Signature	Time	Date	Signature	Time	Date

Attachment E: Apparatus Interface Statement

Tasmanian Power System Safety Rules

APPARATUS INTERFACE STATEMENT

No. _____

GENERAL

Location / Apparatus _____

This statement identifies the isolations, earthing (if applicable), restrictions and hazards / dangers associated with the following apparatus: _____

In accordance with Switching Sheet No. _____

STATUS OF APPARATUS

Isolation Points: _____

Earthing Points: _____

Restrictions: _____

HAZARDS / DANGER POINTS

The following Hazards/ Danger points have been identified. _____

ISSUE

1. This information is provided to the Authorised Officer who understands and agrees with the above status of apparatus and hazard/danger points.
2. The status of apparatus shall not be altered until this statement has been cancelled.

	Print Name	Signature	Auth. No.	Contact No.	Time	Date
Issuing Officer						

RECEIPT

1. As an Authorised Officer of [company name] _____ I have been advised by the Issuing Officer of the above status of apparatus and hazard/danger points.
2. I understand and agree with the above status of apparatus and hazard / danger points and shall advise the work party
3. I understand the status of apparatus shall not be altered until this statement has been cancelled

	Print Name	Signature	Auth. No.	Contact No.	Time	Date
Authorised Officer						

SURRENDER

1. All members of the work party have completed work and I have advised them that the above status of apparatus no longer applies.
2. I understand that the above status of apparatus no longer applies
3. Due to the nature of work carried out, the following restrictions apply:

_____

_____

I have advised the Issuing Officer that this Apparatus Interface Statement is now surrendered.

	Print Name	Signature	Auth. No.	Time	Date
Authorised Officer					

CANCELLATION

1. Any restrictions listed by Authorised Officer have been acknowledged and addressed appropriately.
2. The Apparatus Interface Statement has been signed by the Authorised Officer to indicate that the Apparatus Interface Statement is surrendered.

This Apparatus Interface Statement is now cancelled.

	Print Name	Signature	Auth. No.	Time	Date
Issuing Officer					

Attachment F: Terms and Abbreviations

The following is a set of frequently used terms and abbreviations. The list is not comprehensive but aims to develop a common understanding. The abbreviations can be used as indicated in lieu of the full word for written communication.

In addition, *Approved* abbreviations in use by the signatories may be utilised in the preparation of *Switching Sheet*s and *Access Authorities*.

TERM	**ABBREVIATION**	**DESCRIPTION**
Access Authority	AA	See definitions.
Alternating Current	ac	A current that reverses at regularly recurring intervals of time and which has alternately positive and negative values.
Air break switch	ABS	An *Approved* switch for breaking current at or below the designed rating.
Ampere	A	Unit of electrical current.
Auto Reclose	A/R	Automatic device that initiates the reclosing of switching equipment as desired after it has opened automatically under abnormal or fault conditions.
Automatic	Auto	
Automatic Voltage Regulator	AVR	A voltage sensitive device that is used to control the voltage of the regulated circuit.
Auxiliary	Aux	An item not directly part of a specific device or system but required for its functional operation.
Bearing	Brg	Part of machine that bears the friction, commonly between rotating shaft and its housing.

TERM	ABBREVIATION	DESCRIPTION
Blue Phase	BØ	
Capacitive Voltage Transformer	CVT	A voltage transformer (VT) connected to the primary *Conductor* through a capacitance divider.
Capacitor	Cap	
Circuit	Cct	A *Conductor* or system of *Conductors* through which an electric current is intended to flow.
Circuit Breaker	CB	A mechanical switching device capable of making, carrying and breaking currents under normal circuit conditions and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions such as those of short-circuit.
Close		The operation of an item of *Apparatus*, eg movement of the contacts from the normally open to the normally closed position, or movement of the position of a valve.
Closed		An operational state of an item of *Apparatus*.
Combination Fuse Switch	CFS	A device within a distribution switchboard that performs both *LV* circuit protection and close and open functions.
Combined Voltage and Current Transformer	CVCT	Instrument transformer connected in series with the primary *Conductor*, comprising both a CT and a VT portion.

TERM	ABBREVIATION	DESCRIPTION
Commissioned		See definitions.
Control switch	C/Sw	A manually operated switching device for controlling power-operated devices. NOTE: It may include signalling, interlocking etc. as dependent functions.
Cooling water	C/W	A fluid used to remove heat from rotating machinery or from its components.
Court	Crt	
Crescent	Cres	
Current Transformer	CT	An instrument transformer, with its primary winding connected in series with the *Conductor* carrying the current to be measured or controlled.
Delay		The operational state of an item of *Apparatus*, where a delay has been purposely introduced in the action of the *Apparatus*. eg sensitive earth fault protection switched to 'Delay'.
Direct Current	dc	Uni-directional current, practically non-pulsating current.
Disconnector	DS	A switch used for changing connections in a circuit, or for isolating a circuit or *Apparatus* from a source of power. Not normally capable of making or breaking load or fault current.

TERM	ABBREVIATION	DESCRIPTION
Distribution Switchboard	DSB	A power switchboard used for the distribution and protection of one or more electrical circuits at *Low Voltage*s.
Earth fault	E/F	A short-circuit current between a *Conductor* and earth resulting from an insulation failure or from the bridging of insulation.
Earth switch	ES	An *Approved* mechanical switching device for electrically connecting a circuit or piece of *Apparatus* to earth.
Expulsion drop out (fuse)	EDO	A vented fuse in which the expulsion effect of gases produced by the arc and lining of the fuse folder, either alone, or aided by a spring, extinguishes the arc.
Extra Low Voltage	*ELV*	See definitions.
Feeder line	Fdr	
Generator	G	An electric *Apparatus* that converts mechanical power into electric power.
High Voltage	*HV*	See definitions.
Highway	Hwy	
In		The operational state of an item of *Apparatus*, where a function of the *Apparatus* is enabled eg, auto reclose 'In' means that the auto recloser is switched to initiate reclose of the respective circuit breaker.
In Service		See definitions.

TERM	**ABBREVIATION**	**DESCRIPTION**
Instantaneous	Inst	The operational state of an item of *Apparatus*, where no delay has been purposely introduced in the action of the *Apparatus* eg. Sensitive earth fault protection switched to Instantaneous.
Instructed Person	IP	See definitions.
Isolator	Isol	See Disconnector.
Issuing Officer	IO	See definitions.
Junction Box	JB	An enclosure for connecting *Conductors* with the use of terminals.
Kilovolt	kV	Unit of electric potential difference and electromotive force (x 10^3).
Kilovolt Ampere	kVA	Unit of 'apparent' power (x 10^3).
Kilowatt	kW	Unit of 'real' power (x 10^3).
Low Voltage	*LV*	See definitions.
Machine	m/c	A Generator or Motor.
Main Switch Board	MSB	
Megavolt Ampere	MVA	Unit of 'apparent' power (x 10^6).
Megawatt	MW	Unit of power (x 10^6).

TERM	ABBREVIATION	DESCRIPTION
Miniature Circuit Breaker	MCB	A *LV* circuit breaker assembled as an integral unit in a supporting and enclosing housing of moulded insulating material, the over-current and tripping means being integrated within the unit.
Mobile Generator Unit	MGU	Transportable AC power unit for temporary installation.
Motor	M	An electric *Apparatus* that converts electric power into mechanical power.
Motorised Disconnector	MDS	A motorised switch used for changing connections in a circuit, or for isolating a circuit or *Apparatus* from a source of power. Not normally capable of making or breaking load or fault current.
Multiple *Earthed* Neutral	MEN	A system of earthing in which the parts of an electrical installation required to be *Earthed* are connected to the general mass of earth and, in addition, are connected within the electrical installation to the neutral *Conductor* of the supply system.
Neutral	N	
Number	No.	
On soak		The operational state of an item of *Apparatus*, where the *Apparatus* is *Energised*, but is not delivering or transferring power.

TERM	ABBREVIATION	DESCRIPTION
One trip to lockout		The operational state of an item of *Apparatus*, where only one opening operation of the mechanism will be permitted before the contacts are locked in the open position. This will be the case where the auto recloser is 'Out'.
Open		The operation of an item of *Apparatus* eg movement of the contacts from the normally closed to the normally open position, or movement of the position of a valve.
Operator		See definitions.
Optical Ground Wire	OPGW	
Out		The operational state of an item of *Apparatus*, where the function of the *Apparatus* is disabled eg auto reclose 'Out' means that the auto recloser is switched to not initiate reclose of the respective circuit breaker.
Out Of Service	OOS	See definitions.
Overcurrent	O/C	A current exceeding the rated value (for *Conductors*, the rated value is the current-carrying capacity).
Overhead	OH	
Overvoltage	O/V	Excessive voltage, exceeding a predetermined value.
Person In Charge	PIC	See definitions.

TERM	ABBREVIATION	DESCRIPTION
Phase	Ø	(pronounced Phi)
Pole	P	
Pole Mounted Recloser	PMR	
Primary	Prim	Referring to the main power circuits, or energy input side of a transformer.
Pump		A machine for raising, driving, exhausting, or compressing fluids, as by means of a piston, plunger, or rotating vanes.
Red Phase	RØ	
Receiver	Rx	A device to re-convert an intermediate signal into the original signal.
Remote Terminal Unit	RTU	A slave control device located at a *Station* for *Remote Control* of units or switchgear by supervisory control or from which supervisory indications or selected telemeter readings are obtained to be displayed at a master *Station*.
Return to service	RTS	
Road	Rd	
Safe Approach Distance	SAD	See definitions.
Supervisory Control and Data Acquisition	*SCADA*	
Secondary	Sec	Referring to auxiliary or control circuits, or energy output side of transformers.

TERM	ABBREVIATION	DESCRIPTION
Sensitive earth fault	SEF	An earth fault that is limited by the resistivity of the earth path, resulting in the flow of only a small current.
Schedule of Planned Operations	SOPO	See *Switching Sheet*.
Station	Stn	
Street	St	
Substation	SubStn	
Switching Sheet	Sw/Sh	See definitions.
Switch	Sw	A device used to close or open, or both, one or more electric circuits.
Tag		See definitions.
Tap changer	T/C	A selector switch device used to change transformer taps to permit changing the voltage ratio.
Test energise		The operation of an item of *Apparatus* to connect *De-energised Apparatus* to the *Power System* to evaluate its performance under controlled conditions, to place the *Apparatus* on soak.
Time delay	T/D	See Delay.
Tower	T	
Transmitter	Tx	A device that converts an original signal into an intermediate signal, suitable for sending via a bearer.

TERM	ABBREVIATION	DESCRIPTION
Transducer relay cubicle	TRC	
Transformer	TF	A device which, when used, will raise or lower the voltage of alternating current of the original source.
Transmission line	T/L	
Under frequency	UF	A frequency that is less than a predetermined value.
Underground	UG	
Undervoltage	U/V	A voltage that is less than a predetermined value.
Valve	V/v	Any device for closing or modifying the passage through a pipe, outlet, inlet or channel, in order to control the flow of liquids or gases.
Voltage Transformer	VT	An instrument transformer intended to have its primary winding connected in shunt with the power supply circuit, the voltage of which is to be measured or controlled.
Volt	V	Unit of electric potential difference and electromotive force.
Volt Ampere Reactive	VAr	Unit of 'reactive' power.
Watt	W	Unit of 'real' power.
White Phase	WØ	

Attachment G: Amendment Proposal

Publication Title: Power System Safety Rules

Section / Chapter / Page / Attachment

I have read the PSSR publication and find that it is:

☐ In error ☐ Incomplete

☐ Difficult to understand ☐ Poorly arranged

My specific comments are (attach separate sheets if necessary):

_____

_____

_____

_____

_____

_____

Name: _____

Signature: _____

Date: _____

Position: _____

Location:_____

Phone Number:_____

Fax Number:_____

Email Address: _____

PSSR Accreditation Number: T_____

What to do:

Photocopy the form on the previous page and fill in the information.

Forward any suggested changes (amendments, additions or deletions) to a member of the *Power System* Safety Committee for consideration.

A current list of Committee members is available on the *Power System* Safety web page, www.transend.com.au

Tell us about:

- Unclear or incorrect expressions.
- Conflict or inconsistencies between this and other documents.
- Out-of-date procedures.
- Proposals for change of rules.
- Any inadequacies in the rules relating to the stated aim or objective.
- Errors, omissions or suggested improvements.

Attachment H: List of amendments

AMENDMENTS TO POWER SYSTEM SAFETY RULES – REVISION 1.1	
Cover and prologue amended. Logos and signatory information moved to a separate document. PSSR Revision 1.1 changed to PSSR Version 2 – June 2013	
Section	Amendments / additions
1 Introduction	Amended: - **1.1 Basic safety principle** - **1.2 Legal Status** - **1.5 Application** (g) - **1.8 Reference documentation**
2 Definitions	Added: - *Accredited (*authorisation changed to *Accreditation* throughout the document) - *Participating Company*. Deleted: - *Work Environment* Amended: - *Control Measures* - *Employee* - *Mobile Plant* - *Person In Charge*
3 Responsibilities	Added new (a) to - **3.3 Operator** - **3.4 Issuing Officer** - **3.5 Person In Charge** - **3.7 Instructed Persons** Amended: - **3.5 Person In Charge** (k) i - **3.6 Safety Observer** Removed: - 3.5 **Person In Charge** (p) and (q) - all references to suspend and resume removed throughout the document.

4 General Safety Provisions	- **4.1 Training and Authorisation** now **4.1 Training and competence** - new **4.1.1 Power System Safety Rules training** and **4.1.2 Competence** added - 4.2, 4.3, 4.3.1 and 4.3.2 combined into **4.2 Hazard Identification and Risk Assessment** and **4.2.1 Approach to Energised Apparatus** - amended iii **4.5 Tools and Safety Equipment** - **4.7 Electromagnetic Fields (EMF)** replaced with new wording
5 Safe Approach Distances to Electrical Apparatus	Added Note at end of **5.2 Safe Approach Distances** after Safe Approach Distance Reference Matrix
7 Switching Sheets	Included new item (i) under Exceptions
8 Isolation	**Amended 8.1 General principles of Isolation:** - **8.1 (f) iii** - **8.2 (b) and** (d)
9 Earthing	**Amended 9.1 General principles of earthing:** - **9.1** (a), (l) and (o) Added: - **9.1** (l) iv and renumbered
11 Access Authorities	**Amended** - **11.1 General principles of Access Authority** **Deleted** - **11.3 When an Access Authority can be suspended** - **11.8 Access Authority Suspension / Resumption** – deleted; Section renumbered and all references to suspension and resumption removed from throughout PSSR.
12 Interfacing with Non-Signatories	Heading and content changed.

ATTACHMENT A: Induction Hazards	*Induction* Effects –warning amended
ATTACHMENT B: Access Authority	Included instruction ***(Cross out non applicable conditions)*** under Status of Apparatus / Work Site
ATTACHMENT C: Instructions for the use of the Access Authority form	SUSPENSION and RESUMPTION sections removed
ATTACHMENT F: Terms and Abbreviations	Removed: - **Boiler – Blr** - **Dewatering – D/W** - **Guide Vane – GV** - **Governor – Gov** - **Hill top valve – HTV** - **Main inlet valve – MIV** Added: - **Motorised Disconnector – MDS**
ATTACHMENT G: Amendment Proposal	TESI Passport Number changed to PSSR Accreditation Number
ATTACHMENT H: **List of amendments**	New list of amendments made to PSSR Revision 1.1

Index