Transgrid

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Power System Safety Rules

Revision 6.0

Version 6.0 of the Power System Safety Rules is now planned for rollout in January 2026. This draft has been released to encourage constructive feedback from our workers, delivery partners and ESI peers.

This is a significant update and rewrite of the Power System Safety Rules focused on logical alignment of authorisation roles. List numbering that has changed due to realignment of the 'Structure of Authorisation' is not highlighted in this version.

New, or separation of bundled authorisations, has added new authorisations for:

- FAA3 Receipt of a Field Access Authority - Live Work HV
- LVM2 Work in LV/MECH Areas
- LVM3 Fault Finding
- LVA1 Work under a LV/MECH Access Authority
- LVA2 Receipt of a LV/MECH Access Authority
- LVA3 Receipt of a LV/MECH Testing Access Authority
- LVP1 Perform PMWI Routine
- LVP2 Write/Check PMWI Routine
- LVP3 Write/Check/Perform PMWI Routine
- LW1 Live Work - HV
- DDA Declare Disconnected apparatus

Differences to PSSR Revision 5.4 where the intent of the Rule has changed, has significant revision; is new; or the Authorisation role is new; are highlighted in this version by a vertical red line.

Any comments or feedback may be emailed to safety@transgrid.com.au with PSSRv6.0 in the title.

Summary					
This document sets out approved rules for safe access and work on Power System apparatus in the charge of a Transgrid Controller.					
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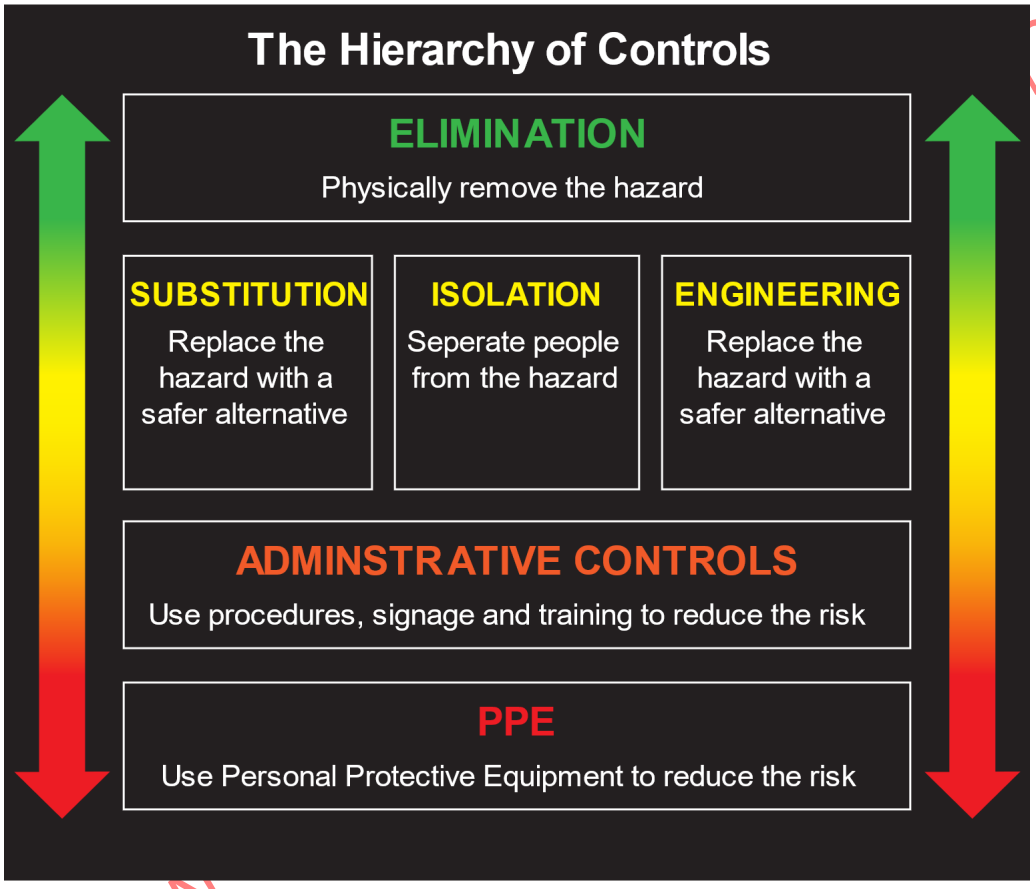
Process owner:	GM/Health, Safety & Environment				
Author:	J Mason, PSSR Lead/Health, Safety & Environment				
Reviewers:	PSSRv6.0 Technical Committee: R Dunn; W Kroker; S Klein; J Brown; T Puckett; G Cook; D Adsett; S Barton; M Fry; B Maude; A Keogh; M Dorahy; C Tibbots; B Lawty; M McCorry; D Herden; M Gorton; A Bush; K Brown; M Haddon; J Clayton; B Wasow; S Van Dijk.				
Endorsed:					
Approver:					

Contents

Introduction

Purpose

Safety is Transgrid's highest priority, and the Power System Safety Rules (PSSR) are an essential part of Transgrid's Safety Management System. The PSSR are based on the 'Hierarchy of Controls' and were created to keep our people safe when exposed to the hazards of working on infrastructure such as *substations*, *Transmission Cables*, and *Transmission Lines*.



Use of the word '*shall*' indicate mandatory provisions and use of the word '*should*' indicate advisory or discretionary provisions. Defined terms are identified in text by *italics* and are described in Definitions.

Scope

This document sets out *approved* rules for safe work for *Substations*, *Switchyards*, *Transmission Lines*, *Transmission Cables* and other *Power System* assets owned and/or managed by Transgrid in New South Wales (NSW) and the Australian Capital Territory (ACT).

Application

The PSSR apply to *Power System apparatus* located in or associated with:

- *Substations*, *Switchyards*, *High Voltage* (HV) areas;
- *Transmission Cables*; and
- *Transmission Lines*.

*Procedure*s associated with the application of the PSSR are set out in relevant supporting documents. These are in addition to the requirements of any Legislation, Codes of Practice or Guidelines.

Additional Jurisdictional Requirements

The PSSR stipulate the requirements for work in New South Wales (NSW) and the Australian Capital Territory (ACT). Other jurisdictions may have additional or unique requirements for work.

Work on equipment not in the charge of a Controller

Equipment not *in the charge of a Controller* includes electrical and *mechanical System*s which do not directly impact on the functioning of the *Power System*, for example *substation* electric gates; building auxiliary services including air conditioning or lighting and security *System*s.

Any electrical work of this type *shall* be performed in accordance with the requirements of the SafeWork Australia Code of Practice 'Managing Electrical Risks in the workplace.'

Responsibilities

All persons working under the PSSR *shall* comply with them fully. If it is unclear how the PSSR are to be applied, it is the responsibility of the individual to seek clarification before proceeding. Any person found knowingly not complying with the PSSR will be subject to suspension or cancellation of their Authorisation. Wilful non-compliance will be treated as an extremely serious matter and may result in dismissal of the worker or workers concerned.

PSSR amendments *shall* be reviewed, endorsed, and *approved* in accordance with the PSSR Approval Strategy. The General Manager of Health Safety and Environment may temporarily suspend or amend any of these Power System Safety Rules in extraordinary circumstances when it is proper and safe to do so.

Training and Competency

Persons to be authorised under the PSSR *shall* be trained and *assess*ed as *competent* in each of the relevant authorisations. Persons whose intended work duration is more than 3 days cumulative over 12 months *should* not be engaged as *instructed person*s in preference to being authorised under the PSSR.

*Authorised person*s *shall* be re-*assess*ed on their knowledge and application of the PSSR applicable to their categories of authorisation and other relevant pre-requisite requirements at intervals determined by the General Manager of Health Safety and Environment.

Supervision

(a) Apprentices and trainees *shall* not be used in a way that would have them working un*supervised*. They *shall* be *supervised* in accordance with apprentice *supervision procedure*s.

(b) Any person who is not authorised under the PSSR for entry or the task they are required to perform is an *ordinary person*. In order to enter or perform work they must become an *instructed person*:

  (i) An *instructed person* must be *supervised* and warned of site-specific risks to ensure their safety;

  (ii) Ensuring *instructed person*s are safe is the responsibility of the designated supervisor.

Structure of Authorisations

The Power System Safety Rules authorisations are permissions to access an area, perform a type of work, apply a specific control, or execute a controlled process.

	Substations	LV/MECH	Transmission Lines	Transmission Cables	Mobile plant
Hazard Awareness & Control	SUB1 Substations General	LVM1 LV/MECH General	TL1 Transmission Lines General	TC1 Transmission Cables General	MP1 Safety Observer
	SUB2 Work in HV Areas	LVM2 Work in LV/MECH Areas			MP2 Mobile Plant Assessment
	SUB3 Supervise Instructed persons	LVM3 Fault Finding			

	Substation HV Access	LV/MECH Access	Transmission Line Field Access	Transmission Cable Access	Network Access
Power System Access	HVA1 Working under a HV Access Authority	LVA1 Working under a LV/MECH Access Authority	FAA1 Working under a Field Access Authority	CAA1 Working under a Cable Access Authority	NA1 Request for Access
	HVA2 Receipt of a HV Access Authority	LVA2 Receipt of a LV/MECH Access Authority	FAA2 Receipt of a Field Access Authority	CAA2 Receipt of a Cable Access Authority	NA2 Assessment of RFA
	HVA3 Receipt of a HV Testing Access Authority	LVA3 Receipt of a LV/MECH Testing Access Authority	FAA3 Receipt of a Field Access Authority Live Work HV	CAA3 Receipt of a Cable Testing Access Authority	NA3 Producing a HVPRI
	HVA4 Issue HV Access Authority	LVA4 Issue LV/MECH Access Authority	FAA4 Issue Field Access Authority	CAA4 Issue Cable Access Authority	SCA Operating Switchgear SCADA

	HV Field Operating	LV/MECH Field Operating		Specific Functions	
Power System Field Operation	HVO1 Operate HV Apparatus Connection Point	LVO1 Operate LV/MECH Apparatus LVMPRI	LVP1 Isolate/Restore Routine PMWI	SSA Substation Safe Access	BE1 Bridge Earthing TL Structure
	HVO2 Operate HV Apparatus Advanced	LVO2 Not used	LVP2 Write/Check Routine PMWI	LW1 Live Work - HV	BE2 Bridge Earthing Grids
		LVO3 Produce/Check LVMPRI	LVP3 Isolate/Restore/Write/Check Non-routine PMWI		DDA Declare Disconnected apparatus

- Authorisations with an identical code prefix are normally inclusive of subordinate authorisation(s) within that stream; i.e.: HVA4 is inclusive of HVA1, HVA2 and HVA3.

Minimum Personal Protective Equipment (PPE)

Substations

All persons entering Transgrid *substation*s or *High Voltage* areas must wear the following base PPE:

- High visibility, full-length clothing
- Safety footwear
- Safety eyewear
- Protective gloves

Easements

All persons working on Transgrid's *Transmission Line* and *Transmission Cable* easements require the following base PPE:

- High visibility, full-length clothing
- Safety footwear
- Safety eyewear
- Protective gloves

Additional PPE requirements

Certain work activities or work sites may require additional PPE, as determined by a *procedure*, work instruction, signage, risk *assessment* or SWMS such as:

- Safety helmet
- Flame-resistant and or arc rated garments
- *Insulated* gloves
- *Insulated* boots

Work or Operating involving apparatus of other organisations

Access

Persons performing work on *apparatus* owned or under the operational control of another NSP (*Network Service Provider*) within a Transgrid controlled boundary, *shall* be authorised in accordance with an *approved* Operating Agreement or Memorandum of Understanding (MOU). Where no agreement exists, the Transgrid *Power System* Safety Rules *shall* apply.

Apparatus* of another Organisation installed in a Transgrid *substation.

Persons working on behalf of another organisation may work on or operate *apparatus* under their organisation's operational control within a Transgrid controlled boundary in accordance with the *procedures* of their organisation. If operational control is unclear or unknown, work, or operating activities *shall* not proceed until agreement is reached on who has operational control.

Isolation and/or earthing provided by another organisation.

Where work at a Transgrid location requires another organisation to provide isolation and/or earthing using *apparatus* under their control, a clearance *shall* be obtained by the *Controller* in accordance with Transgrid's *procedures*. Where it is considered that the isolation or earthing is not adequate, additional precautions *shall* be taken before work commences.

Supporting Documentation

The following core handbooks are written in plain, easy to understand language and are a working interpretation of the *Power System* Safety Rules and *should* be referred to as the primary source of information associated with the PSSR.

There may also be additional *procedures* and work instructions found at https://www.transgrid.com.au/safety/workplace-safety/power-*System*-safety-rules

Emergency Provisions

De-*energising apparatus* in an emergency

In circumstances involving danger to life or damage to plant, *apparatus* may be *de-energised* by any person to eliminate the danger, provided they:

1. Consider that they can do so safely; and
2. The *Controller* is advised as soon as practi*cable*.

Emergency requirements for Accessing *Transmission Line*s

Where there is immediate risk to human life or property that requires action regarded as work on or *near Transmission Line*s, work may proceed under the following conditions:

(a) Receive approval from the *Controller* to commence emergency operations;

(b) The conductors *shall* be *isolated*, proved *de-energised* and *earthed* (including the application of locks) at all sources of *supply* by a person authorised HVO1;

(c) *Field Access Authority earths shall* be applied at the work location after proving *de-energised* by a person authorised FAA4. The requirements to apply *Do Not Operate Tags* and issue a *Field Access Authority* are not mandatory;

(d) Persons working *shall* be under the continuous close and personal *supervision* of a person authorised FAA4; and

(e) As soon as possible after the immediate emergency, normal safety precautions *shall* be applied.

Emergency Requirements for Accessing HV *Substation Apparatus*

Where there is immediate risk to human life or property that requires action regarded as work on or *near High Voltage exposed conductor*s, work may proceed under the following conditions:

(a) Receive approval from the *Controller* to commence emergency operations;

(b) The *conductor*s *shall* be *isolated*, proved *de-energised* and *earthed* (including the application of locks) by a person authorised HVO2;

(c) The requirements to apply *Do Not Operate Tags*, erect a *designated work area* and issue an *Access Authority* are not mandatory;

(d) Persons working *shall* be under the continuous close and personal *supervision* of a person authorised HVA4; and

(e) As soon as possible after the immediate emergency, normal safety precautions *shall* be applied.

Hazard Awareness and Control

Substations

LV/MECH

Transmission Lines

Transmission Cables

Mobile Plant

1. Substations

This section of the PSSR sets down requirements for ensuring the safety of personnel when working in *switchyard*s, *substation*s and *High Voltage* areas including *cable* tunnels.

1.1. *Substation* Security

Substations and HV areas *shall* be kept secure at all times to prevent access by un*authorised person*s.

1.2. Substations General

General work at a *substation,* including buildings and carparks, *shall* be performed by persons authorised SUB1.

(a) Prior to undertaking work, hazards *shall* be identified and controlled. The following hazards *shall* be considered:

(i) Near Approach to *Energised High Voltage* Conductors

(ii) Buried Services

(iii) Battery rooms and associated *System*s

(iv) LV and ELV exposed conductors

(v) Damage to or inadvertent operation of sensitive *apparatus*

1.2.1. Supervising *instructed person*s

Persons authorised SUB1 are *approved* to supervise *instructed person*s specifically engaged to assist them in carrying out their work in *substation* buildings and carparks areas only.

(a) All *instructed person*s *shall* be:

(i) Given warnings and/or demonstrations appropriate to the work being carried out; and

(ii) Adequately *supervised* at all times to ensure their safety.

1.3. Work in HV Areas

Work within *Switchyards* or HV areas *shall* be performed by persons authorised SUB2.

(a) Persons authorised SUB2 *shall* not supervise *instructed person*s for work within a *Switchyard* or HV area.

(b) Prior to undertaking work in a *Switchyard* or HV Area, hazards *shall* be identified and controlled. The following hazards *shall* be considered, and controls implemented:

(i) Near Approach to *Energised High Voltage* Conductors

(ii) Induced *Voltage*s and Currents (Induction)

(iii) Enclosed Spaces

(iv) Earthing *System*s

(v) Buried Services

(vi) Work in the *vicinity* of *HV Cables* and Sealing Ends

1.4. Supervise *instructed persons*

Instructed persons working in *Switchyards* and *HV* areas *shall* be *supervised* by a person authorised SUB3.

(a) All *instructed persons shall* be:

(i) Given an appropriate entry briefing*;*

(ii) Given warnings and/or demonstrations appropriate to the work being carried out; and

(iii) Adequately *supervised* to ensure their safety.

2. LV/MECH (Low Voltage and Mechanical)

This section of the PSSR sets down requirements for ensuring the safety of personnel to work safely around in-service LV/MECH *apparatus*.

2.1. LV/MECH General

General access to panels, tunnel boards, secondary boxes, and mar*shall*ing kiosks in the vicinity of LV/MECH *shall* be performed by persons authorised LVM1. This type of access includes:

- Visual inspection;
- Design investigation; and
- Work on auxiliary services located within or adjacent to *Power System apparatus*.

(a) Prior to undertaking work, hazards *shall* be identified and controlled. The following hazards *shall* be considered for LV/MECH general work:

(i) *Exposed* LV and ELV conductors;

(ii) Pressure *System*s & Stored Energy; and

(iii) Rotating or moving parts.

2.2. Work in LV/MECH Areas

Work in LV/MECH areas not requiring a *LV/MECH Access Authority shall* be performed and/or *supervised* by persons authorised LVM2. This type of work includes:

- Where deliberate or inadvertent *insulated* contact with *energised* LV and ELV conductors or *apparatus* is possible or necessary;
- Installation of *barrier*s and screening;
- Disturbing in-service LV and ELV *cable*s; and
- Removal of redundant LV/MECH *apparatus* and *cable*s.

2.3. LV/MECH Fault Finding

Activities to diagnose and rectify faults in a *substation* environment *shall* be performed by persons authorised LVM3 under the direction of the *Controller*.

(a) All exposed conductors and *electrical apparatus shall* be regarded as *energised* until *isolated* and proved *de-energised* by a person authorised LVO1.

(b) Before commencing work on or near *energised* LV and/or ELV exposed conductors, the *authorised person shall*:

(i) Identify the *Voltage* of the exposed conductors;

(ii) Ensure that *approved* safe working methods will be used; and

(iii) Take suitable precautions by screening or other means to avoid inadvertent contact with *energised LV* and *ELV exposed conductor*s or earth.

3. Transmission Lines

This section of the PSSR sets down requirements for ensuring the safety of personnel when working in the vicinity of *Transmission Line*s

3.1. Transmission Lines General

Work in the vicinity of Transgrid *Transmission Line*s *shall* be performed by persons authorised TL1.

Prior to undertaking work in the vicinity of *Transmission Line*s, hazards *shall* be identified and controlled. The following hazards *shall* be considered:

(a) Near Approach to Energised High Voltage Conductors

(b) Induced Voltages and Currents (Induction)

(c) Earthing Systems

(d) Buried Services

3.1.1. Supervising *instructed person*s for work

Persons authorised TL1 are *approved* to supervise *instructed person*s specifically engaged to assist them in carrying out their work in the vicinity of *Transmission Line*s.

All *instructed person*s *shall* be:

(a) Given warnings and/or demonstrations appropriate to the work being carried out; and

(b) Adequately supervised at all times.

4. Transmission Cables

This section of the PSSR sets down requirements for ensuring the safety of personnel when working in the vicinity of *Transmission Cable*s.

4.1. *Transmission Cable*s General

General work on and in the vicinity of Transgrid owned and managed *Transmission Cable*s *shall* be performed by persons authorised TC1.

Prior to undertaking work in the vicinity of *Transmission Cable*s, the following hazards *shall* be identified and controlled:

(a) Cable Earthing and Sheath Connections

(b) Incorrect identification of Transmission Cables

(c) Switchyard Earth Grid Voltage Rise and Transferred Earth Potentials

(d) Capacitance Associated with Transmission Cables

(e) Buried services

4.1.1. Supervising *instructed person*s for work

Persons authorised TC1 are *approved* to supervise *instructed person*s specifically engaged to assist them in carrying out their work in the vicinity of *Transmission Cable*s.

All *instructed person*s *shall* be:

(a) Given warnings and/or demonstrations appropriate to the work being carried out; and

(b) Adequately supervised at all times.

5. Mobile Plant in the Vicinity of High Voltage Conductors

This section of the PSSR sets down requirements for *mobile plant* travelling and operating in the *vicinity* of HV *conductor*s, at *Substations* or on *Transmissions Line* easements.

5.1. *Safety observer*

A *safety observer shall* be a person authorised MP1, specifically assigned the duty of observing and warning against unsafe approach of *mobile plant* and its load when travelling and/or operating in the *vicinity* of *High Voltage conductor*s.

The *safety observer shall*:

(a) Only observe one item of *mobile plant* at a time;

(b) Be informed of the work to take place and the *Safe Approach Distance*(s) to be maintained;

(c) Ensure the *mobile plant* is attached to an earthing system;

(d) Consult with the plant operator and establish limits for the travel or operation of *mobile plant;*

(e) Be able to immediately and effectively communicate with the operator of the *mobile plant*, and other persons if required;

(f) Monitor the work activity being carried out and warn the operator if any part of the *mobile plant*, load or persons are about to come within *Safe Approach Distance*s to *Exposed conductor*s;

(g) Be positioned at a suitable location to effectively observe both the *mobile plant* and the HV *conductor*s;

(h) Not perform any other work while acting as a *safety observer*; and

(i) Have the authority to suspend the work at any time.

5.2. *Assessment* of *Vehicle*s and *Mobile plant*

5.2.1. *Assessment* of *Vehicle*s

*Vehicle*s (and *mobile plant* stowed for transit) may travel where *Safe Approach Distance*s for *Vehicle*s will be maintained.

Where there is a possibility of coming within *Vehicle*s – *Safe Approach Distance*s to Exposed Conductors, an *assessment shall* be carried out by a person authorised MP2 who *shall*:

(a) *Assess* if controls are required;

(b) Nominate any required controls; and

(c) Provide approval for the work to commence once *assess*ed controls have been implemented.

5.2.2. *Assessment* of *Mobile plant*

Mobile plant may work where *Safe Approach Distance*s for *Mobile plant* will be maintained.

Where there is a possibility of coming within *Mobile plant* – *Safe Approach Distance*s to Exposed Conductors, an *assessment shall* be carried out by a person authorised MP2 who *shall*:

(a) *Assess* if controls are required;

(b) Nominate any required controls; and

(c) Provide approval for the work to commence once *assess*ed controls have been implemented.

Power System Access

Substation HV Access

LV/MECH Access

Transmission Line Access

Transmission Cable Access

Network Access

6. Substation HV Access

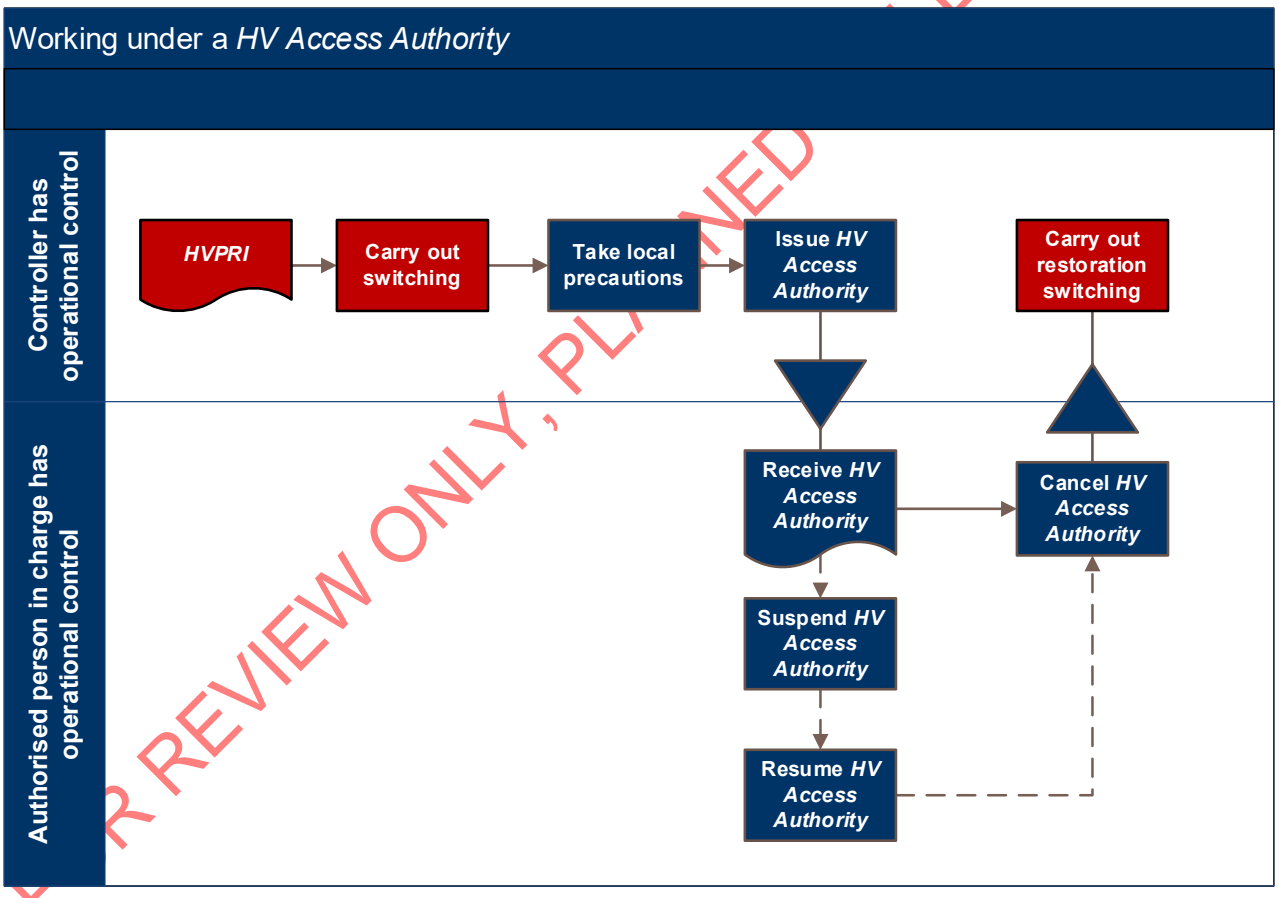
A *HV Access Authority* is required when work is to be performed on or *near substation HV apparatus in the charge of a Controller*. A *HV Access Authority* is issued to provide a safe working environment for personnel when working on or *near exposed conductor*s.

A *HV Access Authority* is only applicable to *apparatus* within a *Switchyard*. The *Switchyard* fence is the physical limit of the *Access Authority*. For work on the landing span of *Transmission Line*, both a *HV Access Authority* (covering the work within the *Switchyard*) and a *Field Access Authority* (covering the landing span outside the *Switchyard* fence) are required.

Work on *HV cable*s entirely within a *substation shall* be undertaken in accordance with the requirements of this section of the PSSR.

HV Access Authority Flow Chart

The following diagram illustrates the points at which operational control transfers from the *Controller* to the *Authorised person in charge* (Recipient of the *HV Access Authority*).



6.1. Responsibilities of persons working under a *HV Access Authority*

All persons working under a *HV Access Authority shall*:

(a) Be authorised HVA1 or work as an *instructed person*;

(b) Sign on to the *HV Access Authority* to indicate that they understand the warnings/demonstrations given and their responsibilities under the *HV Access Authority*;

(c) Follow any safety directions given by the *authorised person in charge*;

(d) If they temporarily leave the *designated* work *area*, check with the *authorised person in charge* or in their absence another person signed on the *HV Access Authority*, that they are in the correct *designated work area* before recommencing work;

(e) Sign off the HV *Access Authority* at the completion of their work for each day/shift or when leaving site; and

(f) At the start of each day or shift, or upon returning after leaving site, verify with the APIC that the conditions of the *HV Access Authority* covering the *apparatus* are still valid.

6.1.1. Entry to *designated* work *areas* (DWA)

Persons *shall* only enter a *designated* work *area*:

(a) When signed on to the *HV Access Authority*;

(b) With the permission of the *authorised person in charge* subject to any safety directions given; and

(c) Only enter or leave the *designated work area* using the *approved* entrance.

6.2. Receipt of a *HV Access Authority*

Persons authorised HVA2 are *approved* to perform the duties of the *authorised person in charge* and can receive / suspend / transfer / resume / cancel *HV Access Authorities.*

6.2.1. Responsibilities of the *Authorised person in charge* (APIC)

The *authorised person in charge shall* ensure:

(a) The location, description of *apparatus*, *description of* work and the access required for work as shown on the *HV Access Authority* is identical to those on the relevant part on the *RFA*;

(b) They understand the warnings given by the issuer and their responsibilities under the *HV Access Authority*;

(c) That the *apparatus* to be worked on is positively identified and is identical to that shown on the *HV Access Authority*;

(d) All members of the working party have signed on the *HV Access Authority*;

(e) Work is restricted to the *description of* work on the *HV Access Authority*;

(f) The *HV Access Authority* is displayed at the entrance to the *designated* work *area*;

(g) The *HV Access Authority* is kept safe until it is suspended or cancelled;

(h) There is a minimum of one additional person authorised HVA1, always signed on the *HV Access Authority*;

(i) *Additional control measures* are identified and applied, so work can be carried out safely under the *HV Access Authority*;

(j) That all persons required to enter the *designated work area* are:

  (i) Either authorised HVA1 or are given warnings and/or demonstrations appropriate to the work being carried out and adequately *supervised* to enable them to work as *instructed persons*;

  (ii) Informed as to the *apparatus* to be worked on, its identification details and the *description of* work to be carried out and the extent of access to the *apparatus*;

(iii) Given warnings and/or demonstrations appropriate to the work being carried out;

(iv) Conversant with the warnings/demonstrations given and their responsibilities under the *HV Access Authority*;

(v) Enter or leave the *designated work area* using the *approved* entrance; and

(vi) Signed off the *HV Access Authority* at the completion of their work for each day/shift or when leaving site.

(k) If it is necessary to make a temporary additional entrance to the *designated work area* to permit the passage of plant or materials, precautions are taken to ensure that the safety of persons working under the *HV Access Authority* are maintained and that the temporary additional entrance is closed as soon as the task has been completed;

(l) That in the event of the *authorised person in charge* needing to temporarily leave (< 15 minutes) the *designated work area*, instructions are given to all persons in the work area to ensure that the relevant provisions of the PSSR are observed during their absence;

(m) That *should* the whole work party temporarily leave the *designated work area* the *Access Authority* remains displayed at the entrance to the *designated work area* and the entrance is closed off. On returning to the *designated work area,* confirm that the *apparatus* is in the same condition as when it was left.

(n) That *bonding lead*s are applied to ensure equipotential conditions are maintained between *mobile plant* and *conductors* during the work;

(o) That *bridging lead*s are applied, where necessary, to maintain a current path when a *conductor* is to be broken or disconnected;

(p) Any u*nearthed conductors* are *earthed* prior to being accessed by the work party;

(q) Working *earths* are only applied to *conductors* within the *designated* work *area*, once it has been proved safe to do so, in accordance with *approved procedure*s.

(r) That any equipment that can store capacitive charge *shall* be fully discharged using a suitable means of earthing before approaching, or working on or *near* the *apparatus*, and before working on the *apparatus* after electrical *testing* has been performed.

6.2.2. *Testing* permitted under a *HV Access Authority*

When the proposed *test* involves a *test* source which is not capable of producing currents hazardous to the human body and *Access Authority earths* are unaffected, *testing* may be carried out without a *Testing Access Authority*, provided the person in charge of the *test*:

(a) Warns any persons who could make inadvertent contact with the *conductor*s during the *test*, that *voltage* is to be applied and, in return, obtain an assurance that they will remain clear of the *conductor*s during the *test*;

(b) Ensures at the conclusion of the work any *apparatus* under *test* which may have become electrically charged during the *test* is fully discharged and left in a safe condition; and

(c) Ensures that the *test* source is not connected to *electrical apparatus* with a capacitance greater than 4,000 pF.

6.2.3. Transfer of a *HV Access Authority*

Where there is a need to change the *authorised person in charge*:

(a) The *authorised person in charge shall* ensure that the new recipient has received the *Access Authority* warnings and/or demonstrations from a person authorised HVA4;

(b) The *HV Access Authority shall* be signed off by the person currently in receipt of the *HV Access Authority*;

(c) The new recipient of the *HV Access Authority shall* be a person authorised HVA2 and sign onto the *HV Access Authority*; and

(d) The *Controller shall* be notified of the new *authorised person* in charge.

6.2.4. Suspension of a *HV Access Authority*

Suspension of a *HV Access Authority* is required when work is to cease for a period.

When a *HV Access Authority* is to be suspended, the *authorised person in charge shall* ensure that:

(a) All persons working under the *HV Access Authority* have signed off, to indicate that permission to work is suspended;

(b) The *HV Access Authority* is endorsed to indicate that the *apparatus* is serviceable / is not serviceable;

(c) The entrance to the *designated work area* is closed off;

(d) The *Controller* is notified of the suspension of the work and whether the *High Voltage apparatus* is/is not serviceable so far as this work is concerned; and

(e) The *HV Access Authority*, together with attachments, is delivered to the *substation* control point.

Where a *HV Access Authority* has been suspended as serviceable and *apparatus* is required for immediate service, the *HV Access Authority* may be cancelled at the direction of the *Controller*.

6.2.5. Resumption of work Following Suspension of a *HV Access Authority*

When resuming work following suspension of a *HV Access Authority*:

(a) Where the *Access Authority* has been suspended for more than 14 days, the *Controller shall* request the *Access Authority* to be cancelled, and a new *Access Authority* issued.

(b) If the *authorised person* is the person who held the *HV Access Authority* immediately prior to suspension, then the *authorised person in charge shall*:

  (i) Obtain permission from the *Controller*;

  (ii) Sign on the HV Access Authority as the authorised person in charge;

  (iii) Allow all persons signed onto the *HV Access Authority* prior to its suspension to sign back on; and

  (iv) Ensure any persons not signed on to the *HV Access Authority* prior to its suspension receive appropriate warnings.

(c) If the *authorised person* is not the person who previously held the *HV Access Authority*, then the *authorised person shall* comply with 'Transfer of a *HV Access Authority*'.

6.2.6. Cancellation of a *HV Access Authority*

On completion of work, the *authorised person in charge shall*:

(a) Prior to cancellation, carry out necessary checks to:

  (i) Confirm all additional *control measures* have been restored and tools are removed;

  (ii) Confirm that all persons signed on the *HV Access Authority* have signed off;

(iii) Confirm whether any warnings or adjustments are required prior to or on return to service; and

(iv) Confirm whether *apparatus* is serviceable or not.

(b) Cancel the *HV Access Authority* by:

(i) Closing off the entrance to the *designated* work *area*;

(ii) Completing the cancellation section of the *HV Access Authority*;

(iii) Ensuring that the necessary details are communicated to the *Controller*; and

(iv) De*liv*ering the cancelled *HV Access Authority* to the relevant control point or directly to the person responsible for the restoration of *apparatus*.

6.3. Receipt of a HV *Testing Access Authority*

Persons authorised HVA3 are *approved* to perform the duties of the *authorised person in charge* and can receive / suspend / resume / cancel *HV Testing* Access Authorities.

A HV *Testing Access Authority shall* be issued where the work includes:

(a) The removal and/or replacement of *Access Authority earth*s;

(b) The use of a *test* source, which can produce currents hazardous to the human body, on the *conductor*s of *High Voltage electrical apparatus*; or

(c) The application of Extra *Low Voltage*s or *Voltage*s produced by an insulation *testing* device operating at 1,000 volts or below, connected to *electrical apparatus* with a capacitance greater than 4,000 pF.

6.3.1. Responsibilities of the *authorised person in charge* of a HV *Testing Access Authority*

In addition to the requirements of receiving a *HV Access Authority* the *authorised person in charge shall*:

(a) Have knowledge of the work, verify the status of the *test* devices, and control the *testing*;

(b) Instruct those persons working under the *HV Testing Access Authority* regarding work that may proceed safely during the *testing* and provide any additional warnings that may be applicable;

(c) Direct the control of the switching of the *test* source *energising* the *conductor*s covered by the *HV Testing Access Authority*;

(d) Ensure adequate communications are maintained with all persons involved in the *testing*;

(e) Warn any person:

(i) In the *vicinity* of the *conductor*s under *test* that *Voltage* is to be applied and in return receive an assurance that such person will remain clear of such *conductor*s during the *test*; and

(ii) Signed on the HV *Testing Access Authority* that they can only work on or *near* the *conductor*s under *test* when the *authorised person in charge* is present to show such persons which *conductor*s are safe to approach.

(f) Where induced or *test voltage*s could be present, ensure that safe working methods are used which restrict persons coming within the *Safe Approach Distance* of *energised conductor*s and any *testing* equipment or connection leads;

(g) Ensure that for the duration of electrical *testing*, the entrance to the *designated work area* is closed and an *approved* notice warning that electrical *testing* is in progress is erected at this closed entrance;

(h) If any *exposed conductor*s to which *test voltage*s are to be applied are out of sight of the person switching the *test* source, ensure that *approved* notices are placed to warn against approach to the *exposed conductor*s at such points and either:

(i) A person is posted to warn others not to approach the *exposed conductor*s during the *test*; or

(ii) Fences or equivalent *barrier*s are erected, or shutters closed to prevent any person gaining inadvertent access to the *exposed conductor*s.

(i) If the *testing* is being carried out by a 3rd party, they *shall* be accompanied at all times during the electrical *test* by a person with sufficient knowledge of the work and the *test* devices, to confirm with the person in charge of the electrical *test* that the *High Voltage conductor*s being *test*ed are safe to be touched or approached whenever this becomes necessary during the progress of the electrical *test*; and

(j) Ensure that, at the conclusion of the work, any *apparatus* under *test* which may have become electrically charged during the *test* is fully discharged and left in a safe condition.

6.3.2. Special requirements HV *Testing*

Equipment under the *test shall* be adequately *isolated* from the *Power System* or any other work party by opening *disconnector*s and/or removing conductors as required. A section of *earthed* conductor *shall* be provided between these points of isolation and the *apparatus* under *test*. The earth on this section *shall* not be removed under the *Testing Access Authority* and *shall* be identified with a *Do Not Operate Tag*.

This is not required when:

- The *test voltage* is less than 3000 volts; or
- The *test voltage* is less than ten per cent (10%) of the *Nominal Voltage* of the equipment under *test*; or
- The points of isolation are provided by a racked-out circuit breaker on *totally enclosed apparatus*.

6.3.3. Transfer of a HV *Testing Access Authority*

In addition to the requirements of 'Transferring a *HV Access Authority'* the new *authorised person in charge shall*:

(a) Verify the status of the *test* devices and all other equipment associated with the *testing*; and

(b) Understand the warnings, instructions and applicable demonstrations regarding the devices and equipment that may be operated in conjunction with the *test*.

6.4. Issue HV or HV *Testing Access Authority*

The issue of a *HV* or *HV Testing Access Authority shall* be carried out by a person authorised HVA4.

More than one *HV Access Authority* may be issued using the same *PRI*, provided that the *PRI* covers all the descriptions of *apparatus* and *descriptions of* work as requested.

6.4.1. Responsibilities of the *authorised person* issuing a *HV Access Authority*

The *authorised person* issuing a *HV Access Authority shall* ensure that:

(a) The person receiving the *HV Access Authority* is a person authorised HVA2;

(b) A *HV Access Authority* is not issued where the work as requested would affect the safety of personnel working under another *Access Authority*;

(c) The steps of the *PRI* relevant to the *description of* work on the *HV Access Authority* to be issued, have been recorded as having been carried out;

(d) Where *GIS* switchgear is used for isolation, gas pressure on that *GIS* switchgear is adequate;

(e) The unique *Access Authority* number received from the *Controller* is recorded on each *HV Access Authority*;

(f) The *HV Access Authority* is not issued if it is not safe for the work to proceed;

(g) The location, the description of *apparatus*, the *description of* work and the nominated access required for work set out on the *HV Access Authority* are identical to those stated in the relevant parts on the *RFA*;

(h) Prior to issuing the *HV Access Authority*:

(i) The designated work area is established using an approved procedure;

(ii) All required applicable warnings are entered on the *HV Access Authority*, and are communicated to the *authorised person in charge* and any members of the working party present;

(iii) The working party is assembled at the *designated* work *area*;

(iv) The *conductor*s which are safe to work on are identified and the precautions taken to make the *conductor*s safe for work are demonstrated, including local points of isolation, *Do Not Operate Tags* and *Access Authority earths*;

(v) A demonstration is given to the satisfaction of the working party that any *unearthed* or remotely *earthed conductor*s are safe to work on or *near*;

(vi) The working party are warned of the dangers of *near* approach to *energised High Voltage apparatus* and *LV/MECH apparatus*.

(vii) The working party are warned to confine their work to the *designated* work *area*, the work as described on the *HV Access Authority* and of their responsibilities when Working under a *HV Access Authority*;

(viii) The working party are warned of any *conductor*s in the work area which are, or which could become, u*nearthed* during the work.

(i) The *HV Access Authority* is endorsed as having been issued;

(j) The details of the issued *HV Access Authority* are communicated to the *Controller*.

6.4.2. Additional requirements when issuing a HV *Testing Access Authority*

In addition to the requirements of issuing a *HV Access Authority*, the *authorised person shall* ensure that:

(a) The person receiving the *HV Testing Access Authority* is a person authorised HVA3;

(b) *Warning Tag*s are affixed to all control points that are able to operate the *apparatus* during the *test*, in accordance with the *PRI*;

(c) Warnings, instructions, and applicable demonstrations are given to the person in charge of the t*est*;

(d) Confirmation has been received from the *Controller* that all current *Access Authorities*, for work on or *near* the *conductor*s required to be electrically *test*ed, are suspended; and

(e) The planned *test voltage*s *shall* not exceed those specified on the *RFA*.

(f) A *Testing Access Authority* must not be issued where the *test* as requested may affect the safety of personnel working under another *Access Authority*;

(g) Where two or more *HV Testing Access Authorities* are issued on the same *conductor*s, then the *HV Testing* Access Authorities *shall* be:

(i) Cross referenced on each HV *Testing Access Authority*; and

(ii) Issued to the same person where the *designated* work *area*s are at a single site.

The cross referenced *HV Testing Access Authorities* are deemed to be part of the one *HV Testing Access Authority* issued to the *authorised person in charge* of the electrical *test* at the *test* source location.

6.4.3. Responsibilities of the *Controller*

The *Controller shall*:

(a) Ensure that the following details are recorded:

(i) HV or HV Testing Access Authority number;

(ii) Time and date of issue, suspension, transfer, resumption, and cancellation of the *HV or HV Testing Access Authority*; and

(iii) Authorised person to whom the HV or HV Testing Access Authority is issued.

(b) If there is a section of *earthed conductor* providing separation described in 'Special requirements HV *Testing*', then this earth *shall* be identified by a *Do Not Operate Tag*.

(c) Ensure that where a *HV Testing Access Authority* is to be issued on *conductor*s leaving a *Switchyard* and another work party requires access to those *conductor*s at a different location. Two sets of *Do Not Operate* tagged *Access Authority earth*s are applied between the work parties, from each point of *supply*.

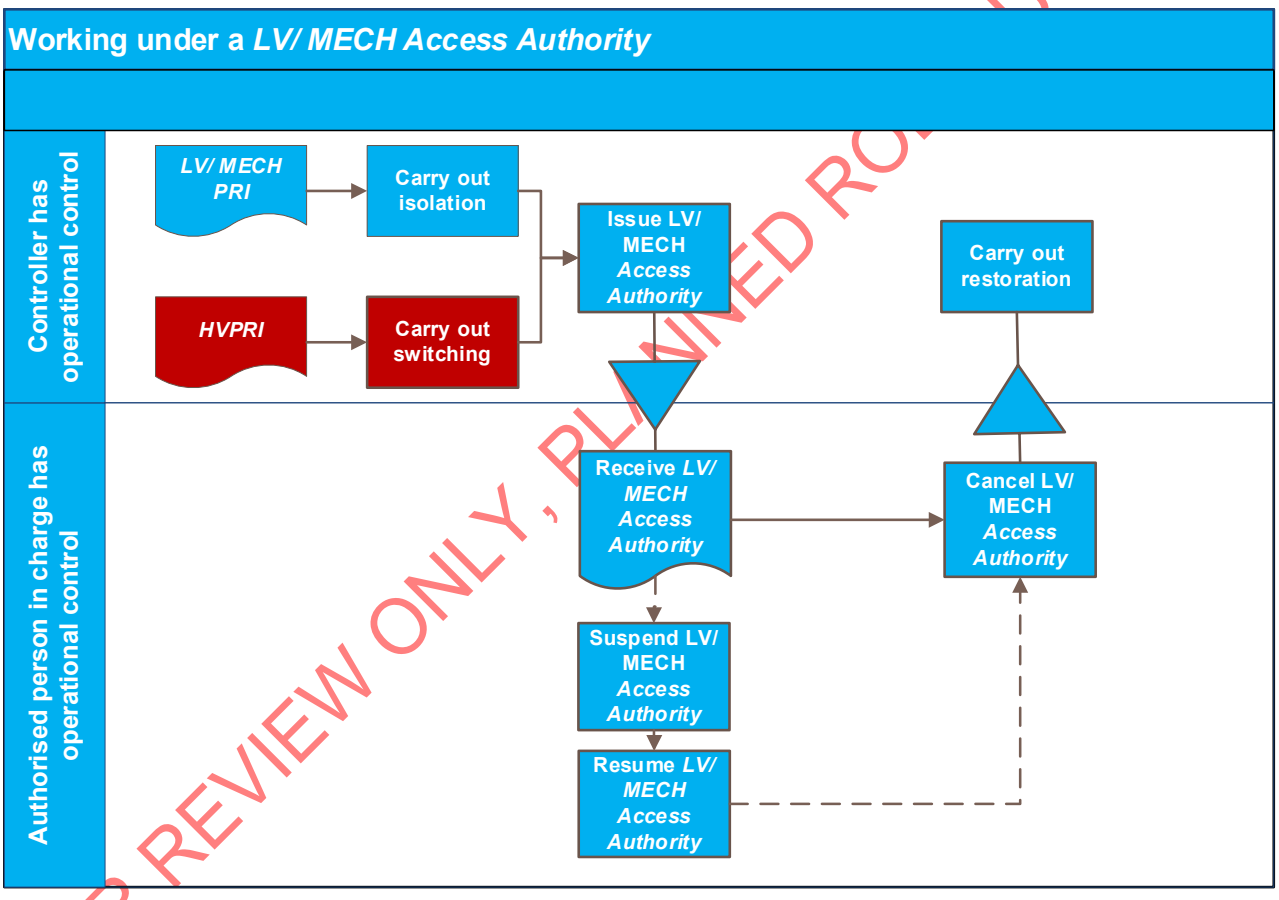
7. LV/MECH Access

This section applies only to *LV/MECH apparatus in the charge of a Controller*. Work on Auxiliary services equipment not *in the charge of a Controller* is to be carried out under the requirements outlined in 'Work on equipment not *in the charge of a Controller*.'

A *LV/MECH Access Authority* is required when work is to be performed on *Low Voltage* or *Mechanical apparatus in the charge of a Controller*. It is issued to provide a safe working environment for personnel when working on or *near exposed conductor*s and to control access to *apparatus* which could affect the *Power System*.

LV/MECH *Access Authority* Flow Chart

The following diagram illustrates the point at which operational control transfers from the *Controller* to the *Authorised person in charge* (i.e., the holder of the *LV/MECH Access Authority*).



7.1. Responsibilities of persons working under a *LV/MECH Access Authority*

All persons working under a *LV/MECH Access Authority shall*:

(a) Be authorised LVA1 or work as an *instructed person*;

(b) Sign on to the *LV/MECH Access Authority* to indicate that they understand the warnings/demonstrations given and their responsibilities under the *LV/MECH Access Authority*;

(c) Follow any safety directions given by the *authorised person in charge*;

(d) If they temporarily leave the work area, check with the *authorised person in charge* or in their absence another person signed on the *LV/MECH Access Authority*, that they are in the correct work area before recommencing work;

(e) Sign off the LV/MECH *Access Authority* at the completion of their work for each day/shift or when leaving site; and

(f) At the start of each day or shift, or upon returning after leaving site, verify with the APIC that the conditions of the *LV/MECH Access Authority* covering the *apparatus* are still valid.

7.2. Receipt of a LV/MECH *Access Authority*

Persons authorised LVA2 are *approved* to perform the duties of the *authorised person in charge* and can receive / suspend / transfer / resume / cancel *LV/MECH Access Authorities.*

7.2.1. Responsibilities of the *Authorised person in charge* (APIC)

The *authorised person in charge shall* ensure:

(a) The location, description of *apparatus*, *description of* work and the access required for work as shown on the *LV/MECH Access Authority* is identical to those on the relevant part on the *RFA*;

(b) That the *apparatus* to be worked on is positively identified and is identical to that shown on the *LV/MECH Access Authority*;

(c) They understand the warnings given by the issuer and their responsibilities under the *LV/MECH Access Authority*;

(d) Before work *commences*, that all members of the working party have signed on the *LV/MECH Access Authority*;

(e) Work is restricted to the *description of* work on the *LV/MECH Access Authority*;

(f) The *LV/MECH Access Authority* is kept safe until it is cancelled;

(g) *Additional control measures* are identified and applied so work can be carried out safely under the *LV/MECH Access Authority*;

(h) That all persons required to work under the *LV/MECH Access Authority* are:

(i) Either authorised LVA1 or are given an appropriate briefing to enable them to work as *instructed persons*;

(ii) Informed as to the *apparatus* to be worked on, its identification details and the *description of* work to be carried out and the extent of access to the *apparatus*;

(iii) Given warnings and/or demonstrations appropriate to the work being carried out;

(iv) Conversant with the warnings/demonstrations given and their responsibilities under the *LV/MECH Access Authority*; and

(v) Signed off the *LV/MECH Access Authority* at the completion of their work for each day/shift or when leaving site.

(i) That in the event of the *authorised person in charge* needing to temporarily leave the work *area* (< 15 minutes), instructions are given to all persons in the working area to ensure that the relevant provisions of the PSSR are observed during their absence;

7.2.2. Transfer of a LV/MECH *Access Authority*

Where there is a need to change the *authorised person in charge*:

(a) The *authorised person in charge shall* ensure that the new recipient has received the *Access Authority* warnings and/or demonstrations from a person authorised LVA4;

(b) The *LV/MECH Access Authority shall* be signed off by the person currently in receipt of the *LV/MECH Access Authority*;

(c) The new recipient of the *LV/MECH Access Authority shall* be a person authorised LVA2 and sign on the *LV/MECH Access Authority*; and

(d) The *Controller shall* be notified of the new recipient.

7.2.3. Suspension of a LV/MECH *Access Authority*

Suspension of a *LV/MECH Access Authority* is required when work is to cease for a period.

When a LV/MECH *Access Authority* is to be suspended, the *authorised person in charge shall* ensure that:

(a) All persons working under the *Access Authority* have signed off, to indicate that permission to work is suspended;

(b) The *Access Authority* is endorsed to indicate that the *apparatus* is serviceable/ is not serviceable;

(c) The *Controller* is notified of the suspension of the work and whether the *apparatus* is/is not serviceable so far as this work is concerned; and

(d) The *Access Authority*, together with attachments, is de*liv*ered to the *substation* control point.

7.2.4. Resumption of work Following Suspension of a *LV/MECH Access Authority*

When resuming work following suspension of a *LV/MECH Access Authority*:

(a) Where the *Access Authority* has been suspended for more than 14 days, the *Controller shall* request the *Access Authority* to be cancelled, and a new *Access Authority* issued.

(b) If the *authorised person* is the person who held the *LVMECH Access Authority* immediately prior to suspension, then the *authorised person in charge shall*:

  (i) Obtain permission from the *Controller*;

  (ii) Sign on the LVMECH *Access Authority* as the *authorised person* in charge;

  (iii) Allow all persons signed onto the *LVMECH Access Authority* prior to its suspension to sign back on; and

  (iv) Ensure any persons not signed on to the *LVMECH Access Authority* prior to its suspension receive appropriate warnings.

(c) If the *authorised person* is not the person who previously held the *LVMECH Access Authority*, then the *authorised person shall* comply with 'Transfer of a *LVMECH Access Authority*'.

7.2.5. Cancellation of a LV/MECH *Access Authority*

On completion of work, the *authorised person in charge shall* cancel the LV/MECH *Access Authority* by:

(a) Prior to cancellation, carry out necessary checks to confirm:

  (i) All additional *control measures* have been restored and tools are removed;

  (ii) That all persons signed on the *LV/MECH Access Authority* have signed off;

  (iii) Whether any warnings or adjustments are required prior to or on return to service; and

  (iv) Whether *apparatus* is serviceable or not.

(b) Cancel the LV/MECH *Access Authority* by:

(i) Completing the cancellation section of the *LV/MECH Access Authority*;

(ii) Ensuring that the necessary details are communicated to the *Controller*; and

(iii) De*liv*ering the cancelled *LV/MECH Access Authority* to the relevant control point or directly to the person responsible for the restoration of *apparatus*.

7.3. Receipt of LV/MECH *Testing Access Authority*

Persons authorised LVA3 are *approved* to perform the duties of the *authorised person in charge* and can receive / suspend / resume / cancel LV/MECH *Testing* Access Authorities.

A *LV/MECH Testing Access Authority shall* be issued where the work includes the application of *test voltages* or the restoration or removal of electrical or *mechanical* energy isolations.

7.3.1. Responsibilities of the *authorised person in charge* of a LV/MECH *Testing Access Authority*

In addition to the requirements of receiving an *LV/MECH Access Authority*, the *authorised person in charge shall*:

(a) Instruct those persons working under the *LV/MECH Testing Access Authority* regarding work that may proceed safely during the *testing* and provide any additional warnings that may be applicable; and

(b) Ensure that the *apparatus* is left in a safe condition.

7.3.2. Transfer of a *LV/MECH Testing Access Authority*

In addition to the requirements of 'Transferring a *LV/MECH Access Authority'* the new *authorised person in charge shall*:

(a) Verify the status of the *test* devices and all other equipment associated with the *testing*; and

(b) Understand the warnings, instructions and applicable demonstrations regarding the devices and equipment that may be operated in conjunction with the *test*.

7.4. Issue of LV/MECH *Access Authority*

(a) The issue of a *LV/MECH Access Authority shall* be carried out by a person authorised LVA4;

(b) More than one *LV/MECH Access Authority* may be issued using the same *PRI*, provided that the *PRI* covers all the descriptions of *apparatus* and *descriptions of* work as requested;

7.4.1. Responsibilities of the person issuing a *LV/MECH Access Authority*

The person issuing the *LV/MECH Access Authority shall* ensure that:

(a) The person receiving the *LV/MECH Access Authority* is a person authorised LVA2;

(b) Each *LV/MECH Access Authority shall* have a unique number provided by the *Controller*;

(c) The location, the description of *apparatus*, the *description of* work and the nominated access required for work set out on the *LV/MECH Access Authority* are identical to those stated in the relevant parts on the *RFA*;

(d) The steps of the *PRI* relevant to the *description of* work on the *LV/MECH Access Authority* to be issued, have been recorded as having been carried out;

(e) The *LV/MECH Access Authority* number received from the *Controller* is recorded;

(f) The *LV/MECH Access Authority* is not issued if it is not safe for the work to proceed;

(g) All required applicable warnings are entered on the *LV/MECH Access Authority*, and are communicated to the *authorised person in charge* and any members of the working party present;

(h) The *LV/MECH apparatus* which is safe to work on is demonstrated and the precautions taken to make the *LV/MECH apparatus* safe to work on are demonstrated, including points of isolation and *Do Not Operate Tag*s.

(i) The *LV/MECH Access Authority* is endorsed as having been issued; and

(j) The details of the issued *LV/MECH Access Authority* are communicated to the *Controller*.

7.4.2. Additional responsibilities of the *authorised person* issuing a LV/MECH *Testing Access Authority*

In addition to the requirements of issuing a *LV/MECH Access Authority*, the *authorised person shall* ensure that:

(a) A LV/MECH *Testing Access Authority* is not issued where the *test* as requested may affect the safety of personnel working under another *Access Authority*;

(b) *Warning Tag*s are affixed to all control points that are able to operate the *apparatus* during the *test,* in accordance with the *PRI*; and

(c) Warnings, instructions, and applicable demonstrations are given to the person in charge of the *test*.

7.4.3. Responsibilities of the *Controller*

The *Controller shall* ensure that the following details are recorded:

(a) LV/MECH or LV/MECH *Testing Access Authority* number;

(b) Time and date of issue, suspension, transfer, resumption and cancellation of the *LV/MECH* or *LV/MECH Testing Access Authority*; and

(c) *Authorised person* to whom the LV/MECH or LV/MECH *Testing Access Authority* is issued.

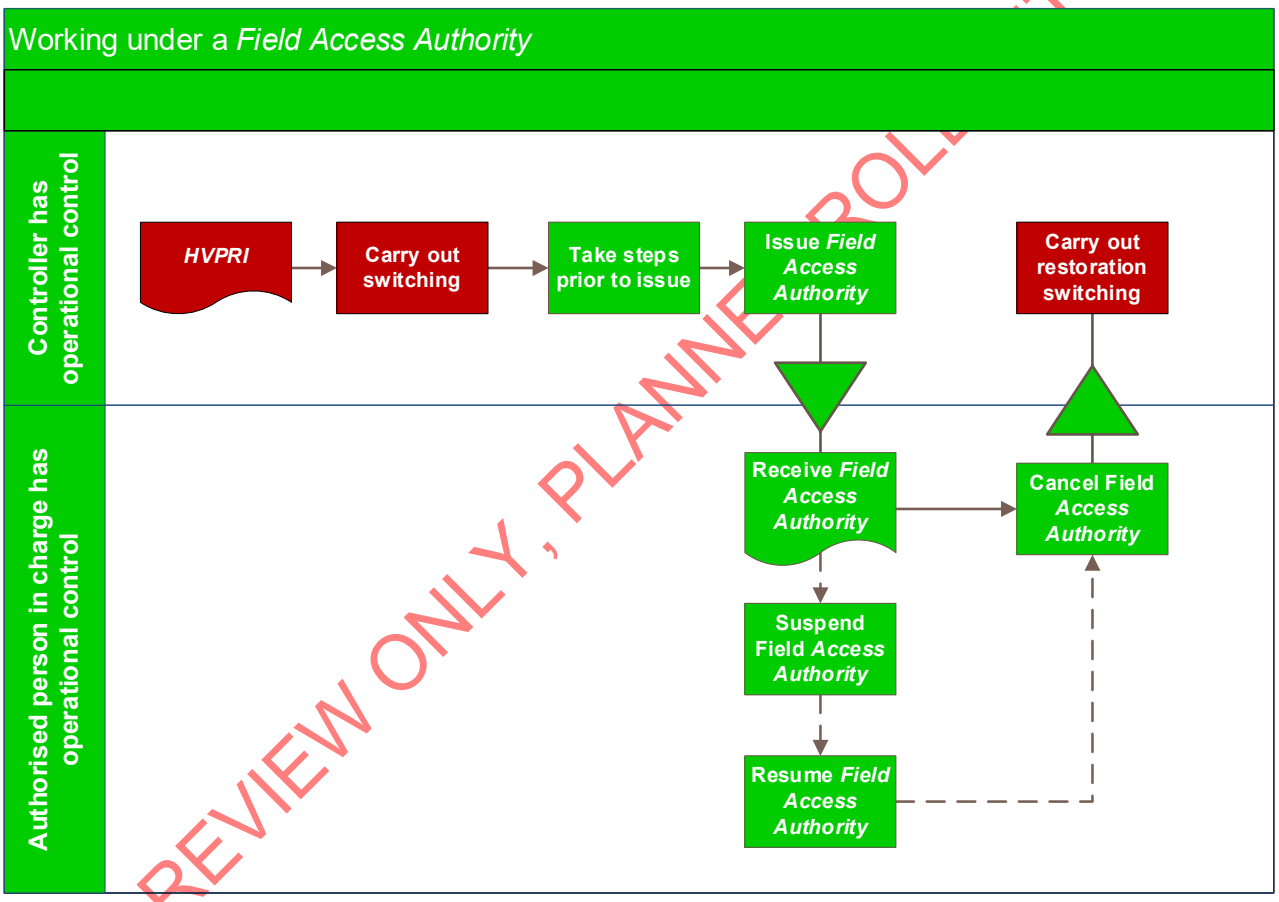
8. Transmission Line Field Access

A *Field Access Authority* is required when work is to be performed on or *near Transmission Line* conductors *in the charge of a Controller*. A *Field Access Authority* is issued to provide a safe working environment for personnel when working on or *near exposed conductor*s.

Field Access Authorities cover *Transmission Lines* outside a *Switchyard.* A *Field Access Authority* cannot extend inside a *Switchyard* fence. Work on landing spans requires both a *Field Access Authority* and a *HV Access Authority*. For work on or *near Transmission Lines* within a *Switchyard*, the requirements of '*Substation* HV Access' *shall* apply.

***Field Access Authority* Flow Chart**

The following diagram illustrates the points at which operational control transfers from the *Controller* to the *Authorised person in charge* (i.e., the holder of the *Field Access Authority*).



8.1. Responsibilities of persons working under a *Field Access Authority*

All persons working under a *Field Access Authority shall*:

(a) Be authorised FAA1 or work as an *instructed person*;

(b) Sign on to the *Field Access Authority* to indicate that they understand the warnings/demonstrations given and their responsibilities under the *Field Access Authority*;

(c) Follow any safety directions given by the *authorised person in charge*;

(d) If they temporarily leave the work area, and before commencing or recommencing work, confirm the identity of the *apparatus* on which they intend to work;

(e) Sign off the *Field Access Authority* at the completion of their work for each day/shift or when leaving site; and

(f) At the start of each day or shift, or upon returning after leaving site, verify with the APIC that the conditions of the *Field Access Authority* covering the *apparatus* are still valid.

8.2. Receipt of a *Field Access Authority*

Persons authorised FAA2 are *approved* to perform the duties of the *authorised person in charge* and can receive / suspend / transfer / resume / cancel *Field Access Authorities.*

8.2.1. Responsibilities of the *Authorised person in charge* (APIC)

The *authorised person in charge shall* ensure:

(a) The location, description of *apparatus*, *description of* work and the access required for work as shown on the *Field Access Authority* is identical to those on the relevant part on the *RFA*;

(b) *Control measures* are identified and applied, such as the installation of any *barrier*s or signage, the appointment of a *safety observer* etc. so that work can be carried out safely under the *Field Access Authority*;

(c) They understand the warnings given by the issuer and their responsibilities under the *Field Access Authority*;

(d) That the *apparatus* to be worked on is positively identified and is identical to that shown on the *Field Access Authority*;

(e) Before work commences, that all members of the working party have signed on the *Field Access Authority*;

(f) Work is restricted to the work area and the *description of* work on the *Field Access Authority*;

(g) The *Field Access Authority* is kept safe until it is cancelled;

(h) There is a minimum of one additional person authorised FAA1, always signed on the *Field Access Authority*;

(i) That all persons required to work under the *Field Access Authority* are:

  (i) Either authorised FAA1 or are given an appropriate briefing to enable them to work as *instructed persons*;

  (ii) Informed as to the *apparatus* to be worked on, its identification details and the *description of* work to be carried out and the extent of access to the *apparatus*;

  (iii) Given warnings and/or demonstrations appropriate to the work being carried out;

  (iv) Conversant with the warnings/demonstrations given and their responsibilities under the *Field Access Authority*; and

  (v) Signed off the *Field Access Authority* at the completion of their work for each day/shift or when leaving site.

(j) That in the event of the *authorised person in charge* needing to temporarily leave (< 15 minutes) the work area, instructions are given to all persons in the working area to ensure that the relevant provisions of the PSSR are observed during their absence;

(k) That *bonding lead*s are applied to ensure equipotential conditions are maintained during the work;

(l) That *bridging lead*s are applied, in accordance with the *earthing plan*, where necessary, to maintain a current path when a *conductor* is to be broken, connected, or disconnected; and

(m) *Field Access Authority* earths, *bridging lead*s and *bonding lead*s are only rearranged in accordance with an *approved earthing plan*.

8.2.2. Transfer of a *Field Access Authority*

Where there is a need to change the *authorised person in charge*:

(a) The new recipient of the *Field Access Authority shall* be a person authorised FAA2.

(b) The *authorised person in charge shall* ensure that the new recipient has received the *Access Authority* warnings and/or demonstrations from a person authorised FAA4;

(c) The *Field Access Authority shall* be signed off by the person currently in receipt of the *Field Access Authority*;

(d) The new recipient of the *Field Access Authority shall* sign on the *Field Access Authority*; and

(e) The *Controller shall* be notified of the new recipient.

8.2.3. Suspension of a *Field Access Authority*

Suspension of a *Field Access Authority* is required when work is to cease for a period.

When a *Field Access Authority* is to be suspended, the *authorised person in charge shall* ensure that:

(a) All persons working under the *Field Access Authority* have signed off, to indicate that permission to work is suspended;

(b) The *Controller* is notified of the suspension of the work and that the line is not serviceable; and

(c) The *Field Access Authority*, together with attachments, is kept safe.

8.2.4. Resumption of work following Suspension of a *Field Access Authority*

When resuming work following suspension of a *Field Access Authority*:

(a) Where the *Access Authority* has been suspended for more than 14 days, the *Controller shall* request the *Access Authority* to be cancelled, and a new *Access Authority* issued.

(b) If the *authorised person* is the person who held the *Field Access Authority* immediately prior to suspension, then the *authorised person in charge shall*:

(i) Obtain permission from the *Controller*;

(ii) Verify that the conditions of the *Field Access Authority* covering the *apparatus* are still valid;

(iii) Sign on the Field Access Authority as the authorised person in charge;

(iv) Allow all persons signed onto the *Field Access Authority* prior to its suspension to sign back on; and

(v) Ensure any persons not signed on to the *Field Access Authority* prior to its suspension receive appropriate warnings.

(c) If the *authorised person* is not the person who previously held the *Field Access Authority*, then the *authorised person shall* comply with '[Transfer of a *Field Access Authority*]'.

8.2.5. Cancellation of a *Field Access Authority*

On completion of work, the *authorised person in charge shall* cancel the *Field Access Authority* by:

(a) Confirming all bonding/ bridging/ tools and working *earth*s are removed;

(b) Confirming that all persons signed on the *Field Access Authority* have signed off to indicate that work under the *Field Access Authority* has ceased;

(c) *E*ither:

(i) Removing earths related to the *Field Access Authority* being cancelled; or

(ii) When the earths are to remain in place for another *Access Authority*, only removing tags related to the *Field Access Authority* being cancelled.

(d) Completing the cancellation section of the *Field Access Authority*; and

(e) Ensuring that the necessary details are communicated to the *Controller*.

8.3. Receipt of a *Field Access Authority – Live Work* HV

Persons authorised FAA3 are *approved* to perform the duties of the *authorised person in charge* and can receive / suspend / transfer / resume / cancel *Field Access Authorities* for *Live Work* HV.

In addition to the requirements of 'Receipt of a Field Access Authority,' the authorised person in charge of a Field Access Authority – Live Work HV shall:

(a) Not leave the vicinity of the work during the currency of the Access Authority;

(b) Ensure that a Live Work HV safety observer is appointed as required by the approved method being used;

(c) Ensure that all live work equipment, rescue equipment and personal protective equipment is checked and used in accordance with the requirements of the work method and the relevant standards for High Voltage live working equipment;

(d) In addition to the requirements of 'Cancellation of a Field Access Authority' the authorised person in charge shall inform the Controller of any abnormal conditions that may be applicable, such as live line tooling left on the apparatus due to an unplanned termination of work.

8.4. Issue a *Field Access Authority*

The issue of a *Field Access Authority shall* be carried out by a person authorised FAA4.

8.4.1. Responsibilities of the *authorised person* issuing a *Field Access Authority*

The *authorised person* issuing the *Field Access Authority shall* ensure that:

(a) They personally transmit to and receive all messages from the *Controller* concerning the issue of the *Field Access Authority*.

(b) Prior to the issue of a *Field Access Authority*, the following *are* satisfied:

(i) Where the work to be carried out on the *HV Transmission Line* will be on or *near* any other *transmission* or *overhead line* (e.g., over or undercrossing), then the *authorised person shall*

receive confirmation from the *Controller* that the other *transmission* or *overhead line* has been made safe;

(ii) They receive advice from the Controller that the High Voltage Transmission Line has been isolated, and earths applied at all points of supply from which it can be energised;

(iii) They receive clearance from the Controller to:

(A) Prove de-energised;

(B) Apply Field Access Authority earths; and

(C) Issue the Field Access Authority.

(iv) The HV Transmission Line at the work location, shall be identified, proven de-energised and earthed by the application of Field Access Authority earths;

(v) Additional Field Access Authority earths, applied as part of an earthing plan have appropriate tags applied;

(vi) On multi-circuit HV Transmission Lines structures, approved methods are used to identify any conductors that are to be regarded as energised.

(c) The person receiving the *Field Access Authority* is a person authorised FAA2;

(d) The location, the description of *apparatus* and the *description of* work on the *Field Access Authority* are identical to those stated in the relevant parts on the *RFA*;

(e) The unique *Access Authority* number received from the *Controller* is recorded on the *Field Access Authority*;

(f) The *Field Access Authority* is not issued if it is not safe for the work to proceed;

(g) All required applicable warnings are entered on the *Field Access Authority* and are communicated to the *authorised person in charge*;

(h) They assemble all persons who are to work under the *Field Access Authority* and:

(i) Demonstrate to them the *conductor*s which are safe to be worked on;

(ii) Warn them of any other *conductor*s, in the *vicinity* of the work, which *shall* be regarded as *energised*; and

(iii) Warn them to confine their work to that described on the *Field Access Authority* and of their 'Responsibilities of persons working under a *Field Access Authority*'.

(i) The *Field Access Authority* is endorsed as having been issued; and

(j) The details of the issued *Field Access Authority* have been communicated to the *Controller*.

8.4.1.1. Field Access Authority earthing principles

Field Access Authority earths shall be managed in accordance with the following principles:

(a) Applied at locations specified on an *earthing plan*, if applicable;

(b) Applied as close as practical to, and within sight of, the work location. The work *shall* be carried out in such a manner that any movement of the *conductor* during the work *shall* not interfere with the effectiveness of the *Field Access Authority earth*;

(c) A person authorised FAA4 *shall* directly supervise any other persons assisting in the application and/or rearrangement of *Field Access Authority earth*s.

(d) Where the work involves the connection, cutting or disconnection of a *High Voltage conductor* (the point of work) then:

(i) *Field Access Authority earth*s *shall* be connected to a common *earthed* point and then applied, one to each side of the point of work; or

(ii) *Bridging lead*s *shall* be applied across the point of work, after first applying a set of *Field Access Authority earth*s to the *conductor*. A *bridging lead* used in this way is considered a *Field Access Authority earth* and *shall* have appropriate tags applied.

(e) Where *Field Access Authority earth*s will be rearranged during the work an *approved earthing plan* is required in accordance with 'Request for Access'.

(f) All *Field Access Authority earth*s *shall* have an appropriate Tag affixed to each end as follows (exception for tower earths where only one tag is required on the cold end of the earth lead):

(i) *Warning Tag*s *shall* be affixed when earths are required to be re-arranged during the work in accordance with an *approved earthing plan*; and

(ii) *Do Not Operate Tag*s *shall* be affixed in all other circumstances.

8.4.2. **Responsibilities of the authorised person issuing a *Field Access Authority – Live Work HV***

The *authorised person* issuing the *Field Access Authority – Live Work HV shall* ensure that:

(a) They personally transmit to and receive all messages from the *Controller* concerning the issue of the *Field Access Authority - Live Work* HV;

(b) Prior to the issue of a *Field Access Authority – Live Work HV*, the following *are* satisfied:

(i) They receive advice from the controller that all automatic reclosing devices associated with the high voltage exposed conductors have been made inoperative; and

(ii) They receive clearance from the Controller to Issue the *Field Access Authority – Live Work HV*.

(c) The person receiving the *Field Access Authority – Live Work HV* is a person authorised FAA3 and has an *approved Live Work – HV method*;

(d) The location, the description of *apparatus* and the *description of* work on the *Field Access Authority – Live Work HV* are identical to those stated in the relevant parts on the *RFA*;

(e) The unique Access Authority number received from the Controller is recorded on the Field Access Authority – Live Work HV;

(d) The *Field Access Authority* is not issued if it is not safe for the work to proceed;

(f) All required applicable warnings are entered on the *Field Access Authority – Live Work HV* and are communicated to the *authorised person in charge*;

(e) They assemble all persons who are to work under the *Field Access Authority – Live Work HV* and:

(i) Demonstrate to them the *conductor*s which are to be worked on;

(ii) Warn them of any other *conductor*s, in the *vicinity* of the work, which *shall* be regarded as *energised*; and

(iii) Warn them to confine their work to that described on the *Field Access Authority – Live Work HV* and of their 'Responsibilities of persons working under a *Field Access Authority*'.

(f) The *Field Access Authority – Live Work HV* is endorsed as having been issued; and

(g) The details of the issued *Field Access Authority – Live Work HV* have been communicated to the *Controller*.

8.4.3. Responsibilities of the *Controller*

The *Controller shall* ensure that the following details are recorded:

(a) *Field Access Authority* number;

(b) Time and date of issue of the *Field Access Authority*; and

(c) *Authorised person* to whom the *Field Access Authority* is issued; and

(d) The *earthing* is at locations specified on the *earthing* plan.

8.4.3.1. Additional Responsibilities of the Controller – Live Work HV

The *Controller shall* ensure that:

(a) When the energising of a Transmission Line is controlled by circuit breakers with automatic reclosing devices, these reclosing devices shall be made inoperative during the currency of any Access Authority for live work and shall be tagged with a Do Not Operate tag indicating that live work is in progress on this circuit;

(b) No relay or associated protection maintenance shall be performed on the protection schemes covering the circuit whilst live work is in progress; and

(c) No operation or switching, including the restoration of tripped apparatus, shall be performed on the Transmission Line apparatus where live work is in progress until the work party has been contacted, and confirmation obtained that all members of the work party have moved clear of the apparatus.

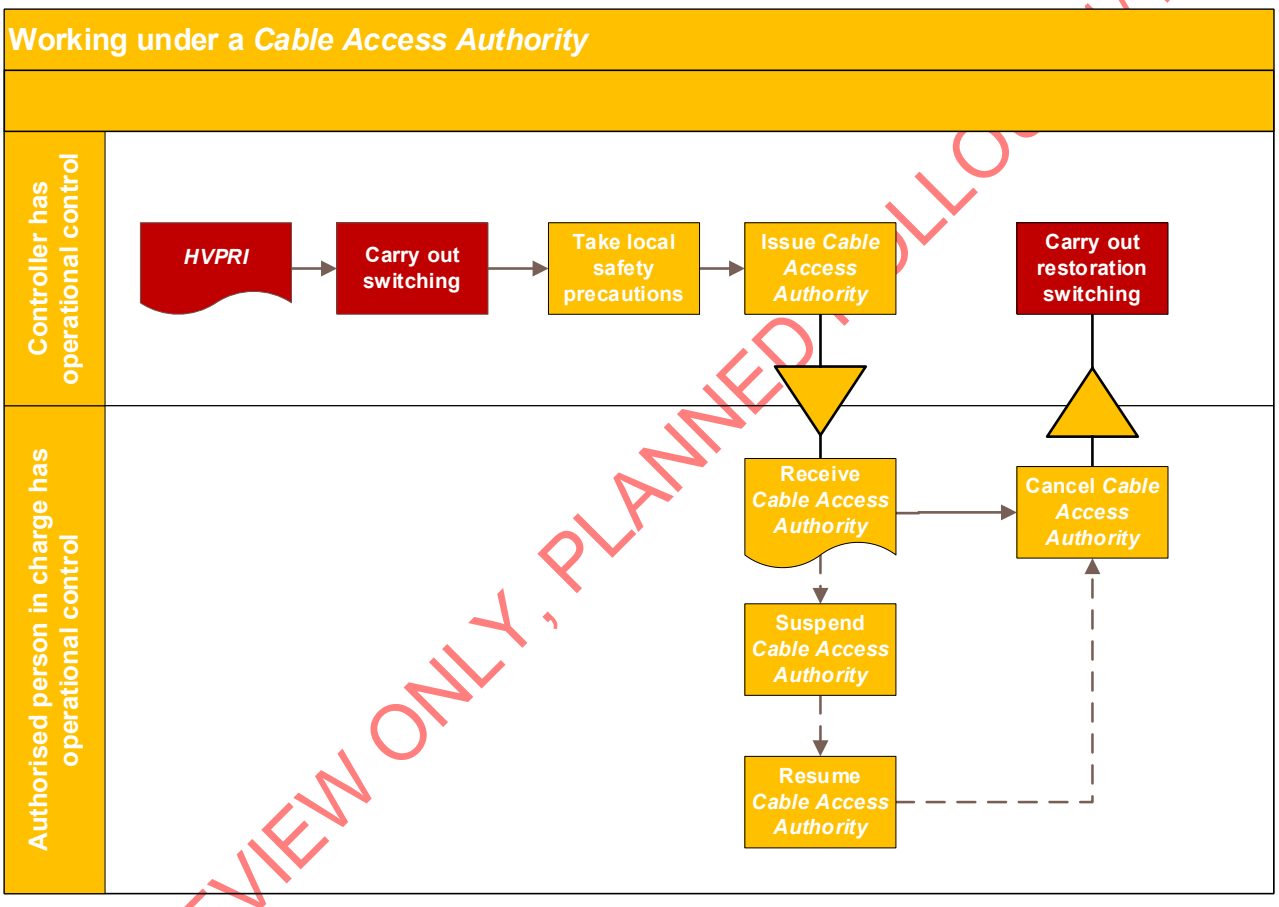
9. Transmission Cable Access

A *Cable Access Authority* is required when work is to be perform on *Transmission Cable* conductors *in the charge of a Controller*. A *Cable Access Authority* is issued to provide a safe working environment for personnel when working on or *near exposed conductor*s.

A *Cable Access Authority* can provide access to any portion of the *cable* and associated equipment as described on the RFA, including the section inside the *switchyard* fence and the sealing ends.

***Cable Access Authority* Flow Chart**

The following diagram illustrates the points at which operational control transfers from the *Controller* to the *Authorised person in charge* (i.e., the holder of the *Cable Access Authority*).



9.1.1. Responsibilities of persons working under a *Cable Access Authority*

All persons working under a *Cable Access Authority shall*:

(a) Be authorised CAA1 or work as an *instructed person*;

(b) Sign on to the *Cable Access Authority* to indicate that they understand the warnings/demonstrations given and their responsibilities under the *Cable Access Authority*;

(c) Follow any safety directions given by the *authorised person in charge*;

(d) Upon entry or any return to the work area and before commencing or recommencing work, confirm the identity of the *apparatus* on which they intend to work;

(e) Sign off the *Cable Access Authority* at the completion of their work for each day/shift or when leaving site; and

(f) At the start of each day or shift, or upon returning after leaving site verify that the conditions of the *Cable Access Authority* covering the *apparatus* are still valid.

9.2. Receipt of a *Cable Access Authority*

Persons authorised CAA2 are *approved* to perform the duties of the *authorised person in charge* and can receive / suspend / transfer / resume / cancel *Cable Access Authorities.*

9.2.1. Responsibilities of the *Authorised person in charge* (APIC)

The *authorised person in charge* in charge *shall* ensure:

(a) The location, description of *apparatus*, *description of* work and the access required for work as shown on the *Cable Access Authority* is identical to those on the relevant part on the *RFA*;

(b) *Control measures* are identified and applied, such as the installation of any *barriers* or signage, the appointment of a *safety observer* etc. so that work can be carried out safely under the *Cable Access Authority*;

(c) They understand the warnings given by the issuer and their responsibilities under the *Cable Access Authority*;

(d) That the *apparatus* to be worked on is positively identified and is identical to that shown on the *Cable Access Authority*;

(e) Before work commences, that all members of the working party have signed on the *Cable Access Authority*;

(f) Work is restricted to the *description of* work on the *Cable Access Authority*;

(g) The *Cable Access Authority* is kept safe until it is cancelled and displayed at the entrance when work is carried out in a *designated* work *area*;

(h) There is a minimum of one additional person authorised to CAA1, always signed on the *Cable Access Authority*;

(i) That all persons required to work under the *Cable Access Authority* are:

  (i) Either authorised CAA1 or are given an appropriate briefing to enable them to work as *instructed persons*;

  (ii) Informed as to the *apparatus* to be worked on, its identification details and the *description of* work to be carried out and the extent of access to the *apparatus*;

  (iii) Given warnings and/or demonstrations appropriate to the work being carried out;

  (iv) Conversant with the warnings/demonstrations given and their responsibilities under the *Cable Access Authority*; and

  (v) Signed off the *Cable Access Authority* at the completion of their work for each day/shift or when leaving site.

(j) That in the event of the *authorised person in charge* needing to temporarily leave (< 15 minutes) the work area, instructions are given to all persons in the working area to ensure that the relevant provisions of the PSSR are observed during their absence;

(k) That *bonding lead*s are applied to ensure equipotential conditions are maintained during the work or *insulated* work methods are maintained and used; and

(l) That *bridging lead*s are applied, where necessary, to maintain a current path when a *conductor* is to be broken or disconnected.

(m) The initial and ongoing adequacy of *insulating* equipment and work methods.

(n) That any equipment that can store capacitive charge is fully discharged using a suitable means of earthing before approaching, or working on or *near* the *apparatus*, and before working on the *apparatus* after electrical *testing* has been performed.

9.2.2. *Testing* permitted under a *Cable Access Authority*

When the proposed *test* involves a *test* source which is not capable of producing currents hazardous to the human body and *Access Authority earths* are unaffected, *testing* may be carried out without a *Cable Testing Access Authority*, provided the person in charge of the *test*:

(a) Warns any persons who could make inadvertent contact with the *conductor*s during the *test* that *voltage* is to be applied and, in return, obtains an assurance that they will remain clear of the *conductor*s during the *test*;

(b) Ensures at the conclusion of the work any *apparatus* under *test* which may have become electrically charged during the *test* is fully discharged and left in a safe condition; and

(c) Ensures that the *test* source is not connected to *electrical apparatus* with a capacitance greater than 4,000 pF.

9.2.3. Transfer of a *Cable Access Authority*

Where there is a need to change the *authorised person in charge*:

(a) The *authorised person in charge shall* ensure that the new recipient has received the *Access Authority* warnings and/or demonstrations from a person authorised CAA4;

(b) The *Cable Access Authority shall* be signed off by the person currently in receipt of the *Cable Access Authority*;

(c) The new recipient of the *Cable Access Authority shall* be authorised CAA2 and sign on the *Cable Access Authority*; and

(d) The *Controller shall* be notified of the new recipient.

9.2.4. Suspension of a *Cable Access Authority*

Suspension of a *Cable Access Authority* is required when work is to cease for a period.

When a *Cable Access Authority* is to be suspended, the *authorised person in charge shall* ensure that:

(a) All persons working under the *Cable Access Authority* have signed off, to indicate that permission to work is suspended;

(b) The *Cable Access Authority* is endorsed to indicate that the *apparatus* is serviceable / is not serviceable;

(c) The *Controller* is notified of the suspension of the work and whether the *Transmission cable* is/is not serviceable so far as this work is concerned; and

(d) The *Cable Access Authority*, together with attachments, is kept safe or delivered to a designated person/location.

Where a *Cable Access Authority* has been suspended as serviceable and *apparatus* is required for immediate service, the *Cable Access Authority* may be cancelled at the direction of the *Controller*.

9.2.5. Resumption of work Following Suspension of a *Cable Access Authority*

When resuming work following suspension of a *Cable Access Authority*:

a) Where the *Access Authority* has been suspended for more than 14 days, the *Controller shall* request the *Access Authority* to be cancelled, and a new *Access Authority* issued;

b) If the *authorised person* is the person who held the *Cable Access Authority* immediately prior to suspension, then the *authorised person in charge shall*:

   (i) Obtain permission from the *Controller;*

   (ii) Sign on the *Cable Access Authority* as the *authorised person* in charge;

   (iii) Allow all persons signed onto the *Cable Access Authority* prior to its suspension to sign back on; and

   (iv) Ensure any persons not signed on to the *Cable Access Authority* prior to its suspension receive appropriate warnings.

c) If the *authorised person* is not the person who previously held the *Cable Access Authority*, then the *authorised person shall* comply with 'Transfer of a *Cable Access Authority*'.

9.2.6. Cancellation of a *Cable Access Authority*

On completion of work, the *authorised person in charge shall*:

(a) Prior to cancellation, carry out necessary checks to:

   (i) Confirm all bonding/ bridging/ tools are removed;

   (ii) Confirm that all persons signed on the *Cable Access Authority* have signed off;

   (iii) Complete the cancellation section of the *Cable Access Authority*; and

   (iv) Confirm whether *apparatus* is serviceable or not.

(b) Cancel the *Cable Access Authority* by:

   (i) Completing the cancellation section of the *Cable Access Authority*; and

   (ii) Ensuring that the necessary details are communicated to the *Controller*.

9.3. Receipt of a *Cable Testing Access Authority*

Persons authorised CAA3 are *approved* to perform the duties of the *authorised person in charge*, supervise *instructed persons* and can receive/ suspend/ resume/ cancel *Cable Testing Access Authorities*.

A *Cable Testing Access Authority shall* be issued where the work includes:

(a) The removal and/or replacement of *Cable Access Authority earths*;

(b) The use of a *test* source which is capable of producing currents hazardous to the human body on the *conductors* of *High Voltage electrical apparatus*; and

(c) The application of extra *Low Voltages* or *Voltages* produced by an insulation *testing* device operating at 1,000 volts or below, connected to *electrical apparatus* with a capacitance greater than 4,000 pF.

9.3.1. Responsibilities of the *authorised person in charge* of a *Cable Testing Access Authority*

In addition to the requirements of receiving a *Cable Access Authority* the *authorised person in charge shall*:

(a) Have knowledge of the work, verify the status of the *test* devices and control the *testing*;

(b) Instruct those persons working under the *Cable Testing Access Authority* regarding work that may proceed safely during the *testing* and provide any additional warnings that may be applicable;

(c) Direct the control of the switching of the *test* source *energising* the *conductor*s covered by the *Cable Testing Access Authority*;

(d) Ensure adequate communications are maintained with all persons involved in the *testing* including persons at the remote end of the section or *cable* under *test*;

(e) Warn any person:

(i) In the *vicinity* of the *conductor*s under *test* that *voltage* is to be applied and in return receive an assurance that such person will remain clear of such *conductor*s during the *test*; and

(ii) Signed on the *Cable Testing Access Authority* that they can only work on or *near* the *conductor*s under *test* when the *authorised person in charge* is present to show such persons which *conductor*s are safe to approach.

(f) Where induced or *test voltage*s could be present, ensure that safe working methods are used which restrict persons coming on or *near energised conductor*s and any *testing* equipment or connection leads;

(g) Ensure that for the duration of electrical *testing*, the entrance to the *cable* work area is closed and an *approved* notice warning that electrical *testing* is in progress is erected at this closed entrance;

(h) If any *exposed conductor*s to which *test voltage*s are to be applied are out of sight of the person switching the *test* source, ensure that *approved* notices are placed to warn against approach to the *exposed conductor*s at such points and either:

(i) A person is posted to warn others not to approach the *exposed conductor*s during the *test*; or

(ii) Fences or equivalent *barrier*s are erected, or shutters closed to prevent any person gaining inadvertent access to the *exposed conductor*s.

(i) Ensure that the *High Voltage* conductors being *test*ed are safe to be touched or approached whenever this becomes necessary during the progress of the electrical *test*; and

(j) Ensure that, at the conclusion of the work, any *apparatus* under *test* which may have become electrically charged during the *test* is fully discharged and left in a safe condition.

9.3.2. Special Requirement for Sheath *Testing*

To achieve an adequate and safe separation between the section of metallic sheath being electrically *tested* and any other work parties, the person in charge of each work party carrying out electrical *testing shall* ensure:

(a) A *conductor* is connected to the general mass of earth and is applied to all adjacent sections of sheath during the *testing*.

(b) Where electrical *testing* on the metallic sheath of a *High Voltage cable* involves the opening of any link for the purpose of the *test*, and the electrical *test* is in progress, the following *shall* occur:

(i) A person *shall* be posted to warn others not to approach the open link and sheath; or

(ii) Fences or equivalent *barriers shall* be erected to prevent any person gaining inadvertent access to the exposed conductors.

9.3.3. Transfer of a *Cable Testing Access Authority*

In addition to the requirements of 'Transferring a *Cable Access Authority*' the new *authorised person in charge shall*:

(a) Verify the status of the *test* devices and all other equipment associated with the *testing*; and

(b) Understand the warnings, instructions and applicable demonstrations regarding the devices and equipment that may be operated in conjunction with the *test*.

9.4. Issue a *Cable* or *Cable Testing Access Authority*

The issue of a *Cable* or *Cable Testing Access Authority shall* be carried out by a person authorised CAA4.

9.4.1. Responsibilities of the *authorised person* issuing a *Cable Access Authority*

The *authorised person* issuing the *Cable Access Authority shall* ensure that:

(a) They personally transmit to and receive all messages from the *Controller* concerning the issue of the *Cable Access Authority*.

(b) They receive advice from the *Controller* that the *cable* has been *isolated* and *Access Authority earths* applied at all points from which it can be *energised*;

(c) The unique *Access Authority* number received from the *Controller* is recorded on the *Cable Access Authority*;

(d) A *Cable Access Authority shall* not be issued where the work as requested would affect the safety of personnel working under another *Access Authority*.

(e) The person receiving the *Cable Access Authority* is authorised CAA2;

(f) The location, the description of *apparatus*, the *description of* work and the nominated access required for work set out on the *Cable Access Authority* are identical to those stated in the relevant parts on the *RFA*;

(g) The *Cable Access Authority* is not issued if it is not safe for the work to proceed;

(h) The *cable* has been identified using *approved procedures*;

(i) The *cable* work area is established using an *approved procedure*.

(i) When working within the boundary of a Switchyard, a designated work area shall be set up around the sealing end and/ or cable work site.

(j) All required applicable warnings are entered on the *Cable Access Authority* Warning & Hazard Form;

(k) They assemble all persons who are to work under the *Cable Access Authority* and:

(i) Demonstrate to them the *conductors* which are safe to be worked on;

(ii) Warn them of any other *conductors* or *Transmission Cables*, in the *vicinity* of the work, which *shall* be regarded as *energised*; and

(iii) Warn them to confine their work to that described on the *Cable Access Authority* and of their 'Responsibilities of persons working under a *Cable Access Authority*'.

(l) The *Cable Access Authority* is endorsed as having been issued; and

(m) The details of the issued *Cable Access Authority* have been communicated to the *Controller*.

9.4.2. Additional requirements when issuing a *Cable Testing Access Authority*

In addition to the requirements of issuing a *Cable Access Authority* the *authorised person shall* ensure that:

(a) The person receiving the *Cable Testing Access Authority* is a person authorised CAA3;

(b) A *Cable Testing Access Authority* is not issued where the *test* as requested may affect the safety of personnel working under another *Access Authority*;

(c) *Warning Tag*s are affixed to all control points that are able to operate the *apparatus* during the *test*, in accordance with the *PRI*;

(d) Warnings, instructions, and applicable demonstrations are given to the person in charge of the *test*;

(e) Confirmation has been received from the *Controller* that all current *Access Authorities*, for work on or *near* the *conductor*s required to be electrically *test*ed, are suspended; and

(f) The planned *test voltage*s *shall* not exceed those specified on the *RFA*.

9.4.3. Sheath *Testing* Requirements

The issue of a *Cable Testing Access Authority* for electrical *testing* of a section of metallic sheath of a *Transmission Cable shall* not prevent the issue of further Access Authorities for:

(a) Work or electrical *test* on other section(s) of the metallic sheath of the same *Transmission Cable*; or

(b) Work on the main *conductor* of other section(s) of the same *Transmission Cable*;

Provided that the *Controller* is satisfied that an adequate and safe separation can be achieved between the section of metallic sheath being electrically t*est*ed and the other work parties. This requires that:

(c) Between any work party carrying out electrical *testing* and any other work or electrical *test* party, there *shall* be a location where the sheath is *earthed* via an *earthed* link box or other bonding system. This location *shall* be excluded from any *Cable Access Authority*.

9.4.4. Responsibilities of the *Controller*

The *Controller shall* ensure that the following details are recorded:

(a) *Cable Access Authority* number;

(b) Time and date of issue and cancellation of the *Cable Access Authority*; and

(c) *Authorised person* to whom the *Cable Access Authority* is issued.

10. Network Access

Network Access is the planning process of obtaining permission to work on or *near Power System apparatus in the charge of a Controller*.

10.1. *Request for Access* (RFA)

To work on or *near Power System apparatus in the charge of a Controller*, a *Request for Access* (RFA) *shall* be submitted by a person authorised NA1.

The submitter of the RFA *shall* ensure that:

(a) The RFA accurately reflects the location of the work, the *apparatus* identification and the *description of* work;

(b) An *approved earthing plan* is referenced for work on *Transmission Line*s outside a *substation* that involves the breaking of *conductor*s;

(c) An *Approval for Live Work – HV* is referenced for live work on Transmission Lines.

10.1.1. Responsibilities of the *Controller*

The *Controller shall* ensure that the RFA is:

(a) *Assess*ed and *approved* by *Net*work Operations prior to issue of an *Access Authority*; and

(b) Assigned a unique number, cross-referenced to the *Access Authority*.

10.2. *Assessment* of a *Request for Access*

Requests for Access *shall* be *assess*ed by a person authorised NA2. This *assessment* will establish:

(a) Whether the work as requested can be undertaken in accordance with these Rules;

(b) Whether the proposed timing of the work can be accommodated without having a detrimental impact on the security or reliability of the Power System; and

(c) When required, an *approved earthing plan* has been referenced prior to the RFA being approved.

10.3. Producing a *High Voltage Preparation and Restoration Instruction* (HVPRI)

HVPRIs *shall* be produced by a person authorised NA3.

(a) A HVPRI *shall* be prepared in response to one or more Requests for Access where the *description of* work is *assess*ed as requiring an *Access Authority*.

(b) The HVPRI *shall* be:

  (i) Prepared by a person authorised NA3; and

  (ii) Checked for correctness by a second person authorised NA3.

(c) Each HVPRI *shall* have a unique reference number.

(d) The HVPRI *shall* include:

  (i) A reference to and a copy of the relevant RFAs;

(ii) A description of each device and item of equipment that is to be rendered incapable of unintentional activation and the required status of those devices and equipment;

(iii) A description of each device and item of equipment to which a tag is to be affixed and the type of tag;

(iv) Steps required to ensure the integrity of the *isolated apparatus* if required, e.g., proving *de-energised*, etc.;

(v) Steps required to carry out the preparation and restoration safely;

(vi) Steps required for the granting or receipt of a clearance from another organisation;

(vii) Means for recording the completion of each step, or related series of steps; and

(viii) Where warnings are required.

10.3.1. Alteration to a *High Voltage Preparation and Restoration Instruction*

Alterations to HVPRIs, once execution has commenced, *shall* be authorised by the *Controller*, who will determine whether making the required changes is acceptable. When the steps of a HVPRI are required to be altered, a person authorised NA3 *shall*:

(a) Alter the HVPRI;

(b) Ensure that the altered HVPRI includes steps requiring the cancellation of any affected *Access Authority*; and

(c) Ensure that the altered HVPRI is checked for correctness by a second person authorised NA3.

10.4. Operating Switchgear via SCADA

SCADA provides remote control of switchgear and associated control *System*s from the *System* Operations Control Room. Operating switchgear via SCADA for *Net*work operation purposes *shall* be carried out by a person authorised SCA.

Operating Switchgear via SCADA *shall* be in accordance with the PSSR and associated documents.

Power System Field Operation

HV Field Operating

LV/MECH Field Operating

11. HV Field Operating

This section covers field operation of HV *AIS* and *GIS* switchgear. *High Voltage* field operations associated with isolating; or isolating and earthing:

- *Transmission Line*s, *Transmission Cable*s, or other forms of connection point to a *switchyard shall* be performed by a person authorised HVO1.
- HV *apparatus* for work within a *switchyard shall* be performed by a person authorised HVO2.

11.1. HV Field Operating - General

(a) Operations *shall* be carried out under the direction of the *Controller*;

(b) All messages relating to the operation of *High Voltage apparatus shall* be logged:

  (i) In describing *apparatus*, the *apparatus shall* be given its full name and number; and

  (ii) The purpose of each message and the time of transmission *shall* be recorded.

(c) Preparation and Restoration work associated with a HVPRI *shall* not be regarded as work on or near *High Voltage* exposed conductors provided that:

  (i) *Safe Approach Distance*s are maintained; or

  (ii) When carrying out *electrical operating* work in accordance with an *approved procedure*.

11.1.1. Specific Requirements - HV GIS *Apparatus*

11.1.1.1. Normal operation

For normal operation, *GIS apparatus shall*:

(a) Be operated remotely; and

(b) Have interlocking in service.

11.1.1.2. Local operation

Local operation *shall*:

(a) Only occur when there is no available remote operation facility; and

(b) Additional safety precautions are taken in accordance with *approved procedure*s.

11.1.1.3. Abnormal operations

Operations that defeat interlocking *shall* only be used where interlocking will prevent essential operations from being carried out. The *authorised person*s carrying out the operations *shall* ensure:

(a) Permission has been granted by the GM/Operations and Maintenance or delegate;

(b) The HVPRI clearly indicates instructions to ‘DEFEAT INTERLOCK’ and ‘RESTORE INTERLOCK’;

(c) Operations are conducted:

  (i) Remotely wherever possible

  (ii) By two HV Field Operators, with the first person identifying each action and the second person confirming that the identified action is correct before it is executed by the first person.

(d) Interlocking is restored as soon as possible and confirmed to the *Controller* at the time.

11.1.2. Making HV *Apparatus* Safe for work

Before work is performed on or *near High Voltage exposed conductor*s the following *shall* be carried out in the order specified:

11.1.2.1. Isolation

Conductors *shall* be *isolated* from each point of *supply*. The points of isolation *shall* be locked (where practi*cable*) and *Do Not Operate Tag*s affixed.

(a) The effectiveness of the points of isolation on HV AIS Switchgear *shall* be demonstrated by:

  (i) A *visible break*; or

  (ii) An *approved testing* or earthing *procedure* where it is not possible to provide a *visible break* because of the design of the isolation devices.

(b) The effectiveness of points of isolation on HV GIS switchgear *shall* be demonstrated by:

  (i) Indication of switchgear position; and

  (ii) Satisfactory gas pressures.

(c) These points of isolation *shall* include:

  (i) *Low Voltage* sources, which can cause the conductors to become *energised* at *High Voltage*. Points of isolation on *Low Voltage* sources need not have a *visible break* but *shall* be provided by a device designed to provide an appropriate *Low Voltage* isolation. Integrity of the isolation *shall* be confirmed by a *testing* and earthing *procedure*.

  (ii) SF6 drain points on GIS chambers used to provide isolation *shall* be marked with *Do Not Operate Tag*(s).

(d) If during the course of work, it is necessary to transfer a point of isolation to an alternative position, any *Access Authority* held by parties at that location affected by this transfer *shall* be cancelled prior to the transfer taking place.

11.1.2.2. Earthing

HV Access Authority earths shall be applied to the *High Voltage conductor*s, once it has been proved safe to do so, using an *approved* method. Their placement *shall* not be affected by the work to be done and *Do Not Operate Tags* or *Warning Tag*s *shall* be affixed.

HV Access Authority earths *shall* be applied as follows:

(a) As a three-phase set. Allowable exceptions are the earthing of neutrals or star points or DC and where *apparatus* is connected to one phase only of a three-phase supply;

(b) As close as practi*cable* to the point of work;

(c) *HV Access Authority* earths that protect persons from danger of accidental energising of the conductors *shall* be applied:

  (i) In in-service protection zones from any point of *supply;* or

  (ii) In accordance with *approved procedure*s;

(d) Where there is a conductor at the point of work, which is not *earthed*, *HV Access Authority* earths *shall* be applied between the point of work and all points of *supply*;

(e) Where work is to be performed on or near the *High Voltage* exposed conductors of *totally enclosed apparatus*, supplied from a single source via a *cable*(s), the *HV Access Authority* earths that protect persons from danger of accidental energising of the conductors *shall* be applied at the nearest practical point to the work area but *shall* be on the same earthing grid;

(f) For work on a capacitor *voltage* transformer, *Access Authority* earths *shall* be applied on the *High Voltage* and *Low Voltage* conductors;

(g) For work on a capacitor bank, *HV Access Authority* earths *shall* be applied in accordance with *approved procedure*s for the type of capacitor bank;

(h) Where the continuous electrical connection between the conductor required to be *earthed* and the *Access Authority* earth is provided by a *disconnector*, a set of links or a similar device, these devices *shall* be closed, locked closed if practi*cable*, and a *Do Not Operate Tag* affixed;

(i) Conductors may be *earthed* by means of a closed circuit breaker or similar device, provided that the device is rendered inoperative in the closed position and a *Do Not Operate Tag* is affixed;

  (i) If the circuit breaker is required to be opened for *testing* purposes a *Warning Tag shall* be affixed. When not being operated for *testing* purposes it *shall* remain inoperative.

(j) A *High Voltage* conductor is regarded as *earthed* where the continuous electrical connection to an *Access Authority* earth passes through the primary of a current transformer;

(k) Where the continuous electrical connection to an *Access Authority* earth passes through a relatively high impedance, such as a power or *Voltage* transformer, reactor or PLC wave trap, a *High Voltage* conductor *shall* not be regarded as *earthed*; and

(l) Where *High Voltage* conductors can be *energised* from a *Low Voltage* source, the conductors *shall* be short-circuited and connected to a *HV Access Authority* earth either on the *High Voltage* conductors to which it is connected or between the *High Voltage* conductors and the point of isolation on the *Low Voltage* side.

  (i) The conductors used for this purpose *shall* be capable of carrying the fault current that would flow in the event of the circuit being *energised* from the *Low Voltage* source for the expected duration of the fault.

(m) Conductors identified as a high induction risk, within the area specified for HV Access *shall* be *earthed* as part of the PRI.

(n) Earths applied to *Transmission Line* conductors for HV Access, *shall* be applied by a person authorised FAA4 under the direction of the *Controller*.

11.1.2.3. Restoration of *apparatus*

The *authorised person* restoring the *apparatus* after work *shall*:

(a) Restore the *apparatus* as per the PRI; and

(b) Arrange for adjustments required to the *apparatus* to be carried out prior to or on return to service of the *apparatus*.

11.2. HV Field Operating - Advanced

11.2.1. Entry to HV Cages

The *authorised person* carrying out HV Field Operations *shall* only enter a HV *cage* if:

(a) *High Voltage* conductors within the cage have been *isolated*;

(b) They will not come on or near *High Voltage* exposed conductors; or

(c) When carrying out *electrical operating* work in accordance with an *approved procedure*.

11.2.2. Dismantling of *designated* work *areas* (DWA)

Following the cancellation of a *HV or HV Testing Access Authority*, a person authorised HVO2 *shall* carry out either of the following:

(a) When the *High Voltage apparatus* covered by the HV or HV *Testing Access Authority* is to be made ready for service, then the DWA and associated warning signs *shall* be dismantled prior to any restoration steps associated with the PRI; or

(b) When the *High Voltage apparatus* is to remain out of service pending the issue of a new *HV Access Authority* for further work then, provided all PRI requirements remain unaltered, the DWA and associated warning signs may be left in place in readiness.

   (i) If the new HV *Access Authority* is not planned to commence until the following working day, the DWA and associated warning signs shall be dismantled, unless agreed otherwise with the *Controller*.

12. LV/MECH Field Operating

This section covers field operation of *Low Voltage* and *Mechanical switchgear*.

12.1. Operate LV/MECH *Apparatus*

(a) Operations *shall* be carried out under the direction of the *Controller*;

(b) All messages relating to the operation of *Low Voltage apparatus shall* be logged:

(i) In describing *apparatus*, the *apparatus shall* be given its full name and number;

(ii) The purpose of each message and the time of transmission *shall* be recorded.

(c) Preparation and Restoration work associated with a *LVMPRI* or *PMWI shall* not be regarded as work on or *near Low Voltage exposed conductor*s when carrying out *electrical operating* work in accordance with *approved procedure*s.

(d) *LV/MECH* Field operations associated with:

(i) *LVMPRI*s, *shall* be performed by a person authorised LVO1;

(ii) Routine PMWIs, *shall* be performed by a person authorised LVP1;

(iii) Non-routine PMWIs, *shall* be performed by a person authorised LVP3.

12.1.1. Operate LV/MECH *Apparatus - LVMPRI*

Before work commences on or *near LV/MECH apparatus* the following *shall* be carried out:

12.1.1.1. LV Isolation

(a) Ensure that *exposed conductor*s are *isolated* from all sources of *supply*;

(b) Where practical, circuit isolating devices *shall* be locked open and/or covers locked to prevent the circuits from being *energised*, and *Do Not Operate Tag*s or *Warning Tag*s affixed as specified in the *LVMPRI*;

(c) Where power and/or control fuses or plug-in circuit breakers are installed, the fuse carriers or circuit breakers *shall* be removed and *Do Not Operate Tag*s or *Warning Tag*s affixed as specified in the *LVMPRI*;

(d) Prove the exposed conductors *de-energised* with an *approved testing* device; and

(e) Where hazardous *Voltage*s are likely to be present:

(i) Use *live* working *procedures*; or

(ii) *Earth* and short-circuit the *exposed conductors* in an approved manner.

12.1.1.2. MECH Isolation

(a) Ensure *mechanical apparatus* is *isolated*;

(b) Discharge all sources of energy within the limits of the isolation;

(c) Take appropriate measures to secure any discharge point or vent and affix *Do Not Operate Tags* or *Warning Tag*s as appropriate. Where practical, devices used for this purpose *shall* be locked to prevent inadvertent operation; and

(d) Prove the effectiveness of the isolation.

12.1.1.3. Restoration of LV/MECH *Apparatus*

The *authorised person* restoring the *apparatus shall*:

(a) Ensure all relevant Access Authorities are cancelled;

(b) Ensure *apparatus* is in a suitable state to return to service;

(c) Have approval from the *Controller* to commence restoration; and

(d) Restore the *apparatus* per the *LVMPRI.*

12.1.2. LV/MECH Operating work

(a) All exposed conductors and *electrical apparatus shall* be regarded as *energised* until *isolated* and proved *de-energised*.

(b) Before commencing work on or near *energised* LV and/or ELV exposed conductors, the *authorised person shall*:

(i) Identify the *Voltage* of the exposed conductors;

(ii) Ensure that *approved* safe working methods will be used; and

(iii) Take suitable precautions by screening or other means to avoid inadvertent contact with *energised LV* and E*LV exposed conductor*s or earth.

12.2. Produce/Check *LVMPRI*

LV/MECH Preparation and Restoration Instructions (*LVMPRI*) *shall* be prepared where the *description of* work is *assesse*d as requiring LV/MECH safety:

(a) The *LVMPRI shall* be:

(i) Prepared by a person authorised LVO3; and

(ii) Checked for accuracy by a second person authorised LVO3.

(b) Each *LVMPRI shall* have a unique reference number and include:

(i) A description of each device and item of equipment that is to be rendered incapable of unintentional activation and the required status of those devices and equipment;

(ii) A description of each device and item of equipment to which a tag is to be affixed, including the type of tag;

(iii) Steps required to confirm the effectiveness of the isolations e.g., proving *de-energised*, draining, venting, etc.;

(iv) Steps required to carry out the preparation and restoration safely;

(v) Steps required for the granting or receipt of a clearance from another organisation;

(vi) Means for recording the completion of each step, or related series of steps; and

(vii) Where warnings are required.

12.3. Write/Check PMWI

Protection Metering Withdrawal Instructions (PMWI) *shall* be prepared where the *description of* work is *assess*ed as requiring *system* security isolations:

(a) Routine *PMWI shall* be:

(i) Prepared by a person authorised LVP2; and

(ii) Checked for accuracy by a second person authorised LVP2.

(b) Non-routine *PMWI shall* be:

(i) Prepared by a person authorised LVP3; and

(ii) Checked for accuracy by a second person authorised LVP3.

(c) Each *PMWI shall* have a unique reference number and include:

(i) A description of each device link, fuse to which an isolation has been performed and its location;

(ii) Steps required to carry out the *system* security isolations;

(iii) Steps required for the granting or receipt of a clearance from another organisation;

(iv) Means for recording the completion of each step, or related series of steps.

Specific Functions

Substation Safe Access

Disconnected Apparatus

Bridge Earthing TL Structure

Bridge Earthing Grids

13. Substation Safe Access

Persons authorised SSA may access Substations and HV areas for observation purposes only, including providing *supervised* access to visitors who are not authorised under the PSSR. Persons authorised SSA *shall* not:

(a) Perform work;

(b) Supervise work; or

(c) Provide access for other persons to perform work.

14. Live Work - HV

Persons performing Live Work - HV and appointed safety observers shall be:

(i) Persons authorised LW1; or

(ii) Specifically instructed and supervised by a person authorised LW1 as part of their Live HV worker training.

Live work shall only be undertaken after consideration is first given to performing the work under isolated and earthed conditions. The procedures for undertaking Live Work - HV shall ensure:

(a) The work is performed in accordance with approved methods that consider:

(i) the condition of the electrical apparatus;

(ii) proximity of other electrical apparatus;

(iii) proximity of earthed equipment and structures;

(iv) protection and control settings; and

(v) appointment of a safety observer.

(b) When performing Live Work - HV persons:

(i) wear appropriate personal protective equipment; and

(ii) use appropriate rated and tested equipment.

14.1. Safe Approach Distances for Transmission Line - Live Work HV

Live work shall be conducted under a Field Access Authority - Live Work HV in accordance with approved procedures and Safe Approach Distances for Live Work. The minimum Tool Insulation Distance to be used during *Live Work* HV *shall* be the lesser of:

(a) the safe approach distance for live work applicable to the voltage being worked on; or

(b) the distance between the exposed conductor and the nearest point of earth potential.

14.1.1. Live work below an altitude of 1500m

The following *Safe Approach Distances shall* be observed during *live work* performed below an altitude of 1500m.

Nominal Voltage	Live Work - HV Safe Approach Distance (mm)	
	Phase-Earth	Phase-Phase
66kV	1000	1000
132kV	1200	1600
220kV	1800	2400
330kV	2300	3600
500kV	2800	4600

These safe approach distances may only be reduced in accordance with Section 16.1.1. Determination and use of alternative Safe Approach Distance and documented in an *approved* work method.

14.1.2. Live work above an altitude of 1500m

When working at an altitude above 1500m safe approach distances shall be determined in accordance with Section 16.1.1. Determination and use of alternative Safe Approach Distance and documented in an *approved* work method.

14.1.3. Live work from platforms subject to inadvertent movement

Live work performed from platforms such as helicopters, man-boxes suspended from cranes and elevating work platforms *shall* make provision for stabilisation of the platform and/or an allowance for platform movement so that the applicable *safe approach distances* are observed at all times. These requirements *shall* be explicitly specified in an *approved* work method.

14.1.4. Safety Observer – Live Work HV

The appointed safety observer shall:

(a) Not perform any other task whilst Live Work HV is in progress;

(b) Check all clearance markers on tooling to ensure they are at the correct position for the voltage being worked on;

(c) Monitor the execution of the work for compliance with the approved method and possible encroachments to the approved Live Work Safe Approach Distance;

(d) Monitor local weather conditions; and

(e) Have the authority to suspend the work at any time.

15. Disconnected apparatus

Disconnected apparatus shall be declared by a person authorised DDA.

15.1. Declaring *Substation* HV *Apparatus* disconnected

Disconnected *Substation* HV *Apparatus* may be made safe for work and excluded from the *Access Authority* requirements of the PSSR.

A person authorised DDA *shall* ensure the following conditions are met:

(a) The HV *apparatus* is disconnected from all sources of HV electrical energy by the removal or absence of conductors and cannot be *energised* by *electrical operating* work;

(b) Any risks associated with induced *voltage*s or transferred potentials are appropriately controlled;

(c) There is no possibility of coming on or near the HV exposed conductors of other HV *electrical apparatus*;

(d) Appropriate *LV/MECH isolations* have been carried out in accordance with 'LV/MECH Field Operating';

(e) Exposed terminal connections of any *cable* or *overhead line* within the vicinity of the *disconnected apparatus shall* be identified;

(f) Disconnected *HV Substation apparatus* – safe for work *shall* be identified within a *switchyard* by enclosing the *apparatus* by a rigid fence which:

  (i) *Shall* be a minimum height of 1800 mm with all entrances closed except when in immediate use. No more than one entrance is to be open at any time.

  (ii) Is appropriately *earthed* and connected to the *substation earth* grid when it is of metallic construction; and

  (iii) Has signs "disconnected apparatus" affixed at regular intervals around the outside of the fence.

(g) All other PSSR requirements shall be complied with.

15.1.1. Additional requirements for GIS *Apparatus*

In addition to the requirements of Declaring *Substation* HV *Apparatus* disconnected, the *authorised person shall* ensure that the following conditions are met for GIS *Apparatus*:

(a) Physical separation of the gas zones chambers by removal and capping of the enclosure, and

(b) No reliance on gas pressure for disconnection.

15.1.2. *Testing* disconnected *Substation* HV *apparatus*

A *Testing HV Access Authority* is not required when *testing* disconnected *Substation HV Apparatus.*

15.1.3. Connection of *Substation* HV *Apparatus*

Prior to any disconnected *Substation HV Apparatus* being connected or reconnected to the *Power System,* a person authorised DDA *shall* confirm that:

(a) All measures taken to identify the *HV apparatus* as *disconnected apparatus* are removed;

(b) All necessary *apparatus* identification, warning signs, locks, fences, gates, etc., are in place;

(c) Advice has been provided to all persons associated with the work that the *apparatus* is now in the charge of the *Controller* and an *Access Authority* is required for work on or *near exposed conductor*s; and

(d) The *Substation HV Apparatus* is in a fit state to be connected to the *Power System.*

15.2. Declaring *Transmission Line*s disconnected

Sections of disconnected *Transmission Line*s, wholly outside *substation* boundaries, may be *approved* safe for work to be undertaken by *ordinary person*s and excluded from the requirements of the PSSR if the following conditions are satisfied.

A person authorised DDA *shall* ensure the following conditions are met:

(a) The *Transmission Line* is disconnected from all sources of *supply* by the removal or absence of *conductor*s and cannot be *energised* by *electrical operating* work;

(b) Any risks associated with induced *voltage*s or transferred potentials are appropriately controlled;

(c) Any section of disconnected *Transmission Line* to be worked upon does not and will not, during the work, come on or near any other *High Voltage* exposed conductors;

(d) For a single circuit of double circuit *Transmission Line* to be declared as *disconnected apparatus*, an *approved* hazard management plan is issued to ensure that the risks of working adjacent to an *energised* circuit appropriately controlled;

(a) Where practical, Disconnected *Transmission Line*s made safe for work, *shall* be identified by "*Disconnected apparatus*" signs affixed at every structure and at *substation* boundaries.

(i) Where it is not practical to affix a "*Disconnected apparatus*" sign at every structure on a section of disconnected *Transmission Line*, an *approved* method *shall* be used to advise all persons involved in the work that the *Transmission Line* is disconnected.

15.2.1. Connection of Disconnected *Transmission Lines*

Prior to any disconnected *Transmission Line* being connected or reconnected to the *Power System,* a person authorised DDA *shall* confirm that:

(a) All measures taken to identify the *Transmission Line* as *disconnected apparatus* are removed;

(b) All necessary *apparatus* identification, warning signs, locks, fences, gates, etc., are in place;

(c) Advice has been provided to all persons associated with the work that the *apparatus* is now in the charge of the *Controller* and an *Access Authority* is required for work on or *near exposed conductor*s; and

(d) The *Transmission Line* is in a fit state to be connected to the *Power System.*

15.3. Declaring *Transmission Cable*s disconnected

Sections of disconnected *Transmission Cable*s, wholly outside *substation* boundaries, may be *approved* safe for work to be undertaken by *ordinary person*s and excluded from the requirements of the PSSR if the following conditions are satisfied.

Prior to a *Transmission Cable* being declared Disconnected, a person authorised DDA *shall* ensure the following conditions are met:

(a) The *Transmission Cable* is disconnected from all sources of electrical energy by the removal or absence of *conductor*s and cannot be *energised* by *electrical operating* work;

(b) Any risks associated with induced *voltage*s or transferred potentials are appropriately controlled;

(c) Any section of disconnected *Transmission Cable* to be worked upon does not and will not, during the work, come on or *near* any other *High Voltage exposed conductor*s;

(d) Appropriate *LV*/*MECH* isolations have been carried out;

(e) Exposed terminal connections of any *Transmission Cable* or line within the *vicinity* of the *disconnected apparatus shall* be identified.

15.3.1.1. Additional requirements within a *substation* boundary

In addition to the requirements of Declaring *Transmission Cable*s disconnected, sections of disconnected *Transmission Cable*s within a *substation* boundary, may be made safe for work and excluded from the *Access Authority* requirements of the *PSSR*.

(a) A person authorised DDA *shall* ensure the following conditions are met:

(b) Disconnected *Transmission Cables* – safe for work shall be identified within a *switchyard* by enclosing the *apparatus* by a rigid fence which:

(i) *Shall* be a minimum height of 1800 mm with all entrances closed except when in immediate use. No more than one entrance is to be open at any time.

(ii) Is appropriately *earthed* and connected to the *substation earth* grid when it is of metallic construction; and

(iii) Has signs “disconnected apparatus” affixed at regular intervals around the outside of the fence.

(c) All other PSSR requirements shall be complied with.

15.3.2. *Testing* Disconnected *HV cable*s

A *Cable Testing Access Authority* is not required when *testing* a disconnected *Transmission Cable*.

15.3.3. Connection of Disconnected *HV Cable*s

Prior to any disconnected *Transmission Cable* being connected or reconnected to the *Power System,* a person authorised DDA *shall* confirm that:

(a) All measures taken to identify the *Transmission Cable* as *disconnected apparatus* are removed;

(b) All necessary *apparatus* identification, warning signs, locks, fences, gates, etc., are in place;

(c) Advice has been provided to all persons associated with the work that the *apparatus* is now in the charge of the *Controller* and an *Access Authority* is required for work on or *near exposed conductor*s.

(d) The *Transmission Cable* is in a fit state to be connected to the *Power System.*

16. Bridge Earthing

16.1. Bridge Earthing *Transmission Line* Structure

Where the work involves the connection, cutting, disconnection or potential to break or damage a *Transmission Line* structure leg earthing system (the point of work), then prior to the work commencing a person authorised BE1 *shall* ensure:

(a) A *bridging lead* is applied across the point of work;

(b) *Bridging lead*s are applied using an *approved* insulating handle or other *approved insulated* working method;

(c) The clamps of each *bridging lead* are locked and a *Do Not Operate Tag* is affixed to each clamp to explain its purpose;

  (i) Locks are not required when the *bridging* lead is applied for a short duration while repairs to the structure *earthing* system are completed, and the person authorised BE1 remains in direct supervision of the repair works.

(d) *Bridging lead*s are only removed after:

  (i) The parallel connection has been restored; or

  (ii) Other *bridging* has been installed in parallel.

16.2. Bridge Earthing Grids

Where the work involves the connection, cutting, disconnection or potential to break or damage any part of a *substation earthing system* (the point of work), then prior to the work commencing a person authorised BE2 *shall* ensure:

(a) Connections between the *earthing system* and transformer neutrals or *High Voltage cable* sheaths are not disconnected except under *Access Authority* conditions;

(b) Bridging is applied across the point of work unless working under *Access Authority* conditions;

(c) *Bridging lead*s are applied and/or removed using an *approved* insulating handle or other *approved insulated* working method;

(d) The clamps of each *bridging lead* are locked and a *Do Not Operate Tag* is affixed to each clamp to explain its purpose;

(e) Earthing grid bridging is only removed after:

  (i) The parallel connection has been restored;

  (ii) Other *bridging* has been installed in parallel; or

  (iii) It is confirmed that is safe to do so.

17. Safe Approach Distances to Exposed Conductors

*Safe Approach Distance*s apply to PSSR *authorised person*s working on assets owned and/or managed by Transgrid. Work in the *vicinity* of another organisation's assets *shall* be in accordance with relevant Codes of Practice unless arrangements have been made between Transgrid and the other organisation.

SAFE APPROACH DISTANCES

Nominal Voltage (V):	ELV <50V AC or <120V DC	LV >ELV and <1000V AC or <1500V DC	Distance (m)
Persons	No contact	0.25 (250mm)	
Persons +	Insulated contact	Insulated contact	

Persons + = Persons authorised minimum LVM2, LVA2, LVO1, LVP1 or HV01

Nominal Voltage (kV):	11-33	66	132	220	275	330	500	Distance (m)
Persons	0.7	1.0	1.2	1.8	2.3	3.0	3.9	
Vehicles *	0.7	1.0	1.2	1.8	2.3	3.0	3.9	
Mobile Plant	3.0	3.0	3.0	6.0	6.0	6.0	8.0	
Mobile Plant +	1.2	1.4	1.8	2.4	3.0	3.7	4.6	

Vehicles * = Includes mobile plant stowed for transit

Mobile Plant + = Mobile plant operating with restrictive devices applied or an authorised safety observer appointed

(a) *Safe Approach Distance*s for persons means the minimum distance from *exposed conductor*s that *shall* be maintained by a person and/or their equipment.

(b) *Safe Approach Distance*s for *vehicle*s means the minimum distance from *exposed conductor*s that *shall* be maintained based on the transit envelope of the *vehicle*, including its load and attachments.

(c) *Safe Approach Distance*s for *mobile plant* means the minimum distance from *exposed conductor*s that *shall* be maintained between the *mobile plant* including its load, controlling ropes and any other accessories.

17.1. Alternative *Safe Approach Distance*s

An alternative *Safe Approach Distance* may be required for specific tasks or work processes where the distance to *electrical apparatus* is less than the *Safe Approach Distance* shown in these Rules. This may include, but is not limited to, some types of:

- operating work;
- installation of earthing equipment;
- *testing*;
- *approved* rescue *procedure*s;
- visual inspection;
- live HV work;
- installation of *approved* temporary insulating *barrier*s manufactured, installed, *tested* and maintained to appropriate safety standards; and
- work within specific *substation* installations.

17.1.1. Determination and use of alternative *Safe Approach Distance*

Determination and use of an alternative distance *shall* be:

(a) Determined in accordance with ENA National Guidelines for *Safe Approach Distance*s to *electrical apparatus*' (ENA NENS 04) and related standards and guidelines as may be appropriate; and

(b) Applied only to a specific task or process that has been subject to a formal risk *assessment* carried out in advance of the work using a consultative process with subject matter experts that considers of power frequency and switching surge distances; and

(c) Documented as an *approved procedure* specific to the task or process that:

(i) Defines why the use of normal *Safe Approach Distance*s or an *Access Authority* is not suitable for the task or process;

(ii) ensures no part of the person's body or any conducting or un*approved* object touching any part of the person's body infringing the alternative *Safe Approach Distance*;

(iii) includes positioning of the worker to minimise the risk of the specified distance being infringed. This includes any un*approved* object or tool being held by the worker;

(iv) uses a person specifically trained and *approved* to perform the task;

(v) uses a *safety observer* specifically trained and *approved* to monitor that task;

(vi) minimises the time a worker is using an alternative *Safe Approach Distance*;

(vii) ensures work crew on-site risk *assessment*s are conducted;

(viii) address the adverse impact of any external influences on plant and equipment, e.g. traffic, boom movement, footing; and

(ix) address the adverse impact of weather and environmental conditions e.g. rain, lightning, wind, light, sag or sway of conductors.

Reference Documents

Electricity Supply Act 1995;

NSW Electricity Supply (General) Regulation 2014;

NSW Electricity Supply (Safety and Network Management) Regulation 2014;

National Network Safety Code ENA DOC 001 – 2019;

National Guideline for Safe Approach Distances to Electrical apparatus ENA NENS 04 - 2006.

National Guideline for Safe Access to Electrical and Mechanical Apparatus ENA NENS 03 - 2021;

Work Health and Safety Act 2011;

Work Health and Safety Regulation 2017;

SafeWork NSW Code of Practice: Work near overhead power lines;

SafeWork NSW Code of Practice: Managing Electrical Risks in the workplace; and

SafeWork NSW Guide: Work Near Underground Assets;

Definitions

Defined terms are identified in the text by *italics.*

Defined terms in the PSSR may contain the definition plus additional supplementary information that is included to condense Rules that follow. To enable identification between the two parts the definition is shown in bold text, and the supplementary information is shown in text that is not bold.

Access Authority	**Any form of authorisation, which allows access to work on or near, or testing of apparatus**, which includes: • The identification of the apparatus to be worked on; • The extent of access and description of work; • Provision for declaration of issue, receipt, suspension, transfer, and cancellation. • Each Access Authority shall have a unique number.
Access Authority earth	**Approved earthing and short-circuiting equipment applied to electrical apparatus, as a requirement for the issue of an Access Authority, to ensure the electrical apparatus is earthed.**
air insulated switchgear (AIS)	**Switchgear that uses the insulation properties of ambient air for insulation.**
apparatus	**Electrical apparatus and mechanical apparatus, including SCADA and associated control schemes.**
approved	**Having appropriate organisational endorsement in writing for a specific function.**
Approval Live Work – HV	**Appropriate organisational endorsement in writing for a specific Live Work - HV method.**
assess/assessment	**Formal review of proposed work to determine whether safety of personnel is involved and hence whether an Access Authority will be required, or operating procedures will apply.**
authorised person	**A person with technical knowledge or sufficient experience who has been assessed as competent and approved to carry out certain functions under these Power System Safety Rules.**
authorised person in charge (APIC)	**An authorised person to whom an Access Authority has been issued and is the person responsible for compliance with the requirements of the Access Authority.**
barrier	**A rope, tape, barricade or alternative erected in accordance with approved procedures.**
bonding lead	**An approved conductor which is used when seeking to create an equipotential area.**
bridging lead	**An approved conductor which is used to maintain a current path when a conductor is to be broken or disconnected.**
cable	**An insulated conductor, or two or more conductors, laid together, whether with or without fillings, reinforcements, or protective coverings.** (Note: Cable for the purpose of these Rules also means aerial bundled cables)

Cable Access Authority	**An Access Authority issued for work on a Transmission Cable, covering the entire length from sealing end to sealing end.**
cage	**A fully fenced or walled area, room, or compartment, with a locked means of access, identified by a notice, containing High Voltage exposed conductors which do not maintain standard safety clearances.**
cancelling an Access Authority	**Notification by the authorised person in charge that all persons signed on the Access Authority have ceased work and have signed off the Access Authority as recognition that their access to the apparatus has been relinquished.**
competent	**Having the skills, knowledge, and attributes a person needs to complete a task.**
Advanced HV Field Operating	**Electrical operating work deemed more intricate than simple isolation of a Transmission Line or Transmission Cable**
conductor	**A wire, cable or form of metal designed for carrying electric current.**
Controller	**An approved person responsible for operation of all or a designated part of the System.**
control authority	**An organisation that is responsible for the control of the apparatus concerned.**
control measures	**Policies, standards, procedures, or actions to eliminate, avoid or minimise risks.**
de-energised	**Not connected to any source of energy but not necessarily isolated.**
description of work	**A description of the work to be carried out, sufficient to allow appropriate steps to be identified to make the apparatus safe for work.**
designated work area (DWA)	**A clearly defined work area in accordance with ISSC 35 associated with an Access Authority for work on High Voltage apparatus.**
disconnected apparatus	**HV Apparatus not electrically connected, made safe for work, and excluded from HV, Field and Cable Access Authority requirements.**
disconnector	**A mechanical switching device which provides, in the open position, an isolating distance in accordance with design standards.** This term includes isolators, air break switches bypass switches and link switches.

Do Not Operate Tag (DNOT)	**An approved tag, used in accordance with approved procedures, warning of a particular hazard or hazardous condition that is likely to be life threatening. The Tag affixed to a device as an instruction against the operation of the device.** Use of Do Not Operate Tags, which may be electronic, shall be as follows: • A Do Not Operate Tag shall only be affixed by an authorised person. • A Do Not Operate Tag shall be affixed: ▪ Whenever isolation is required to prevent apparatus from being energised unintentionally at High Voltage; and ▪ Whenever isolation of apparatus from LV/MECH sources of energy is required and such isolation is not required to be restored during the work. ▪ When used in conjunction with a PRI, the location of each Do Not Operate Tag shall be listed on the PRI and the Do Not Operate Tag shall show the number of the PRI. ▪ When used in conjunction with a Field or Cable Access Authority, the Do Not Operate Tag shall show the number of the Access Authority and the date affixed. ▪ When Do Not Operate Tags are used for work on apparatus in the charge of a Controller, they shall show the PRI number and the date affixed. ▪ When Do Not Operate Tags are used for work on apparatus not in the charge of a Controller, they shall show the name of the authorised person who affixed them, the date affixed and a brief description of the work.
earthed	**Connected to the general mass of earth by a conductor to ensure and maintain the effective dissipation of electrical energy.**
earthing plan	**An approved plan which describes how over the sequence of work to be completed, the Transmission Line conductors will be effectively earthed.**
electrical apparatus	**Any electrical equipment, including Transmission Lines and underground cables, the conductors of which are live or can be made live.**
electrical operating work	**work involving the operation of switching devices, links, fuses, or other connections intended for ready removal or replacement, proving electrical conductors de-energised, earthing, and short circuiting, locking, and/or tagging of electrical apparatus and erection of barriers and/or signs.**
energised	**Connected to a source of electrical supply.**
Excavation Permit	**A permit that is required before any excavation work commences on Transgrid premises or in the vicinity of an earth grid.**
exposed conductor	**An electrical conductor, approach to which is not prevented by a barrier or by insulation which is adequate under a relevant Australian Standard specification for the Voltage concerned**

Extra-Low Voltage (ELV)	**A Nominal Voltage not exceeding 50 volts alternating current or 120 volts ripple free d.c.** Typical: 50VDC Alarm supplies; 110VDC Control supplies.
Field Access Authority	**An Access Authority issued for work on Transmission Lines outside a Switchyard or indoor substation. The Field Access Authority ceases at the Switchyard fence.**
Gas Insulated Switchgear (GIS)	**Switchgear which relies on sulphur hexafluoride (SF_6) gas as the insulating medium.**
High Voltage (HV)	**A Nominal Voltage exceeding 1,000 volts alternating current or exceeding 1,500 volts direct current.**
High Voltage area	**An area identified by notice containing HV equipment with no exposed conductors, such as the tunnels, switch floor and basement areas of GIS substations**
Human Machine Interface (HMI)	**A computer device used to interface with apparatus.**
HV Access Authority	**An Access Authority issued for HV work within the boundary of a Switchyard or indoor substation. The boundary ceases at the Switchyard fence.**
HVPRI	**High Voltage, Preparation and Restoration Instruction** Refer PRI
instructed person	**A person supervised or advised by an authorised person to enable them to avoid the hazards which may be present.**
in the charge of a Controller	**Any apparatus that can directly or indirectly affect the operation of the Power System.**
insulated	**Separated from adjoining conducting material by a non-conducting substance which provides resistance to the passage of current, or to disruptive discharges through or over the surface of the substance at the operating Voltage, to mitigate the danger of shock or injurious leakage of current.**
isolated	**Disconnected from all sources of energy by means which prevent unintentional energisation of the apparatus and which is assessed as a suitable step in the process of making safe for access purposes.**
live	**Energised or subject to hazardous induced or capacitive Voltages.**
live work	**All work performed on components of electrical apparatus which is not isolated, proved de-energised and earthed.**
Low Voltage (LV)	**A Nominal Voltage exceeding Extra Low Voltage but not exceeding 1,000 volts a.c. or 1,500 volts d.c.** Typical: 110VAC VT supplies; 230/400VAC Aux supplies; 250VDC Control supplies.

LVMPRI	**Low Voltage and Mechanical, Preparation and Restoration Instruction** Refer PRI
mechanical (MECH) apparatus	**Any equipment that can rotate or is pneumatic or hydraulic in nature or contains stored energy through mechanisms, liquid, thermal or gas contained within the equipment.**
mechanical operating work	**The operation of devices that control sources of energy, such as, mechanical, hydraulic, pneumatic or fuel energy and the implementation of control measures to prevent the unintentional release of that energy by the locking and tagging of mechanical apparatus and the erection of barriers and/or signs.**
method	**The documentation of a systematic series of actions (or activities) directed to achieve a desired result.**
mobile plant	**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.**
near	**A situation where there is a reasonable possibility of a person either directly or through any conducting medium, other than that which forms part of installed apparatus, coming within the relevant Safe Approach Distances.**
Network Service Provider (NSP)	**The owner, Controller or operator of an electricity network.**
Nominal Voltage	**Means the a.c. (phase to phase r.m.s) or d.c. Voltage by which a System of supply is designated.**
ordinary person	**A person without sufficient training, experience or supervision to enable them to identify/avoid the dangers which electrical apparatus may create.**
overhead line	**Any aerial conductor or conductors with associated supports, insulators and other apparatus erected, or in the course of erection, for the purpose of the conveyance of electrical energy**
pilot cable	**Pilot cables are used for control, protection, signalling, telecommunications and data transmission purposes associated with power transmission Systems.**
Power System	**The transmission and distribution System consisting of electrical apparatus which are used to convey or control the conveyance of electricity between generators' points of connection and customers' points of connector.**
Power System apparatus	**All High Voltage, Low Voltage, mechanical, protection, metering, SCADA, control, or communication apparatus directly associated with the generation, transmission, and distribution of electricity.**

Preparation and Restoration Instruction (PRI)	**A written instruction, prepared in accordance with approved procedures setting out the safe sequence of steps required to:** • **Prepare apparatus and make it safe for the work and/or test as described in the Request For Access;** • **Return apparatus to service; or** • **Take apparatus out of service for plant security;** Each PRI shall have a unique number.
procedure	**The documentation of a systematic series of actions (or activities) directed to achieve a desired result.**
Request for Access (RFA)	**A formal request for permission to work, which may be submitted verbally, in writing or electronically.**
Safe Approach Distance	**The minimum separation in air from an exposed conductor that shall be maintained by a person, or any object held by or in contact with that person (other than insulated objects designed for contact with live conductors or that which forms part of the installed apparatus).**
safety observer	**A person competent for the task and specifically assigned the duty of observing and warning against unsafe approach to electrical apparatus.**
shall	**Is to be interpreted as 'mandatory.'**
should	**Is to be interpreted as 'advisory or discretionary.'**
spotter	**A person competent for the task and specifically assigned the duty of observing and warning against general hazards.**
standard safety clearances	**The clearances used in the design of High Voltage installations to provide safe conditions from High Voltage exposed conductors for a person walking at ground level, or a person on any fixed ladder or platform.**
substation	**A Switchyard, terminal station or place at which High Voltage supply is switched, converted or transformed.**
Supervision/supervised	**The act of overseeing or watching over an instructed person to ensure their safety.**
supply	**supply of electricity**
suspension of an Access Authority	**That all persons signed on an Access Authority have ceased work and have signed off the Access Authority as recognition that their work is suspended and shall not recommence until access is granted by the Controller and they have signed on the Access Authority.**
switchyard	**An area identified by a notice and surrounded by security fences or walls, inside which there are exposed conductors which (except for conductors in any cage within the Switchyard) maintain standard safety clearances.**
system	**All apparatus associated with the generation, transmission, and distribution of electricity.**

test (testing)	**Work where the modification of safety isolations or Access Authority earths is necessary and as a result, additional safety precautions are required to be implemented to ensure the safety of personnel.** Testing may include operational checks, the application of test voltages or the application of mechanical energy. Testing does not include the application of extra Low Voltages or Voltages produced by an insulation testing device operating at 1,000 volts or below, provided it is not connected to a length of cable or a capacitor with a capacitance greater than 4000 pF.
totally enclosed apparatus	**Apparatus within which the electrical conductors can only be exposed by unbolting or unlocking covers or shutters which prevent normal access.** Cables with insulation adequate under the relevant Australian Standard Specification shall be regarded as totally enclosed apparatus.
Transmission Line	**An aerial conductor or conductors with associated supports, insulators and other apparatus erected, or in the course of erection, for the purpose of the conveyance of electrical energy forming part of a transmission network.**
Transmission Cable	**A High Voltage cable which leaves the Switchyard earth grid, regardless of Voltage.**
vehicle	**A truck (non-tipping), car, utility, or other general-purpose conveyance used for the carriage of persons or goods**
vicinity	**Surrounding area where there is a possibility that a person will, either directly or through any conducting medium, come within the relevant Safe Approach Distances.**
visible break	**The point at which conductors are visibly separated by a distance appropriate for the insulating medium and the Nominal Voltage.**
voltage	**Potential difference between conductors, and between conductors and earth.**

Warning Tag	**An approved tag, used in accordance with approved procedures affixed to a device as a warning that this device shall not be operated, except as indicated on the tag.** Use of Warning Tags, which may be electronic, shall be as follows: • An authorised person shall only affix a Warning Tag; • A Warning Tag shall be used for: i. Limiting the operation of a device which may be required to be operated in conjunction with work or testing; and ii. Limiting: • The removal and replacement of an Access Authority earth, used in conjunction with testing without proving the conductors de-energised; or • Guarding against unauthorised operation of the controls of essential equipment used to maintain a safe working environment. • When used in conjunction with a PRI, the location of each Warning Tag shall be listed on the PRI and the Warning Tag shall show the number of the PRI and the date affixed.; • When used in conjunction with a Field or Cable Access Authority, the Warning Tag shall show the number of the Access Authority and the date affixed; and When used in association with testing of apparatus not in the charge of a Controller, the Warning Tag shall show the date of affixation, the name of the authorised person who affixed the Warning Tag and a brief description of the work.
work	**When a person is effecting a degree of change, then work is being undertaken.** If the purpose is to observe only (i.e., to look, measure or photograph, then work is not being undertaken.
working earth	**Approved earthing and short-circuiting equipment applied to electrical apparatus, additional to Access Authority earths, following the issue of an Access Authority.**

Amendments from Previous Issue

Revision 6.0

- This is a significant update and rewrite of the Power System Safety Rules focused on logical alignment of authorisation roles.
- List numbering that has changed due to realignment of the 'Structure of Authorisation' is **not** highlighted in this version.
- New, or separation of bundled authorisations, has added new authorisations for:
    - FAA3 Receipt of a Field Access Authority - Live Work HV
    - LVM2 Work in LV/MECH Areas
    - LVM3 Fault Finding
    - LVA1 Work under a LV/MECH Access Authority
    - LVA2 Receipt of a LV/MECH Access Authority
    - LVA3 Receipt of a LV/MECH Testing Access Authority
    - LVP1 Perform PMWI Routine
    - LVP2 Write/Check PMWI Routine
    - LVP3 Write/Check/Perform PMWI Routine
    - LW1 Live Work - HV
    - DDA Declare Disconnected apparatus
- All rules related to 'Alterations to conditions of work under an Access Authority' deleted.
- Differences to PSSR Revision 5.4 where the intent of the Rule has changed, has significant revision; is new; or the Authorisation role is new; are highlighted in this version by a vertical red line.
  This includes:
    - Alternative Safe Approach Distances - Determination of Special Limits
    - Live Work - HV

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