



ACCESS TO APPARATUS RULES

Approved By:	Prepared By:	Issue Date:	Status:
Andrew Macrides Managing Director	Access to Apparatus Rules Committee	17/6/2011	Approved
		File No:	Version No:
		QDOC2011/60	1

Contents

SECTION 1 – INTRODUCTION	5
1.1 Purpose	5
1.2 Scope	5
1.3 References.....	5
1.4 Documentation control	6
1.5 Responsibilities	6
1.6 Training, assessment and authorisation	7
1.7 Definitions	8
SECTION 2 – GENERAL REQUIREMENTS FOR ACCESS TO <i>APPARATUS, CONFINED SPACES AND HOT WORK HIGH RISK AREAS</i>	13
2.1 Access to <i>apparatus</i> requirements	13
2.2 Request for access to <i>apparatus</i>	16
2.3 Prepare <i>apparatus</i> for issue of an <i>access authority</i>	16
2.4 Issue of an <i>access authority</i>	16
2.5 Receipt of an <i>access authority</i>	18
2.6 Sign on an <i>access authority</i>	19
2.7 Transfer of the receipt of an <i>access authority</i>	19
2.8 Suspension and resumption of work or test under an <i>access authority</i>	19
2.9 <i>Surrender</i> of an <i>access authority</i>	20
2.10 Cancellation of an <i>access authority</i>	20
2.11 Restoration of <i>apparatus</i>	21
SECTION 3 – <i>HIGH VOLTAGE ELECTRICAL APPARATUS</i>	22
3.1 Access to <i>high voltage electrical apparatus</i>	22
3.2 <i>Electrical operating work on high voltage electrical apparatus</i>	23
3.3 Preparation of <i>high voltage electrical apparatus</i> for access.....	23
3.4 Issue of an <i>access authority</i> for work on <i>high voltage electrical apparatus</i>	25
3.5 Receipt of an <i>access authority</i> for work on <i>high voltage electrical apparatus</i>	26
3.6 Sign on an <i>access authority</i> for work on <i>high voltage electrical apparatus</i>	27
3.7 Transfer of the receipt of an <i>access authority</i> for work on <i>high voltage electrical apparatus</i>	27
3.8 Suspension of work on <i>high voltage electrical apparatus</i> under an <i>access authority</i> 27	
3.9 <i>Surrender</i> of an <i>access authority</i> for work on <i>high voltage electrical apparatus</i>	27
3.10 Cancellation of an <i>access authority</i> for work on <i>high voltage electrical apparatus</i> . 28	

Power and Water Access to Apparatus Rules

3.11	Work and test on <i>electrical apparatus not electrically connected</i>	28
3.12	Work on <i>high voltage</i> overhead lines	28
3.13	Work on <i>high voltage cables</i>	31
3.14	Electrical testing.....	32
SECTION 4 – <i>LOW VOLTAGE AND EXTRA LOW VOLTAGE ELECTRICAL APPARATUS</i>		37
4.1	<i>Electrical operating work on low voltage electrical apparatus</i>	37
4.2	Work on <i>de-energised low voltage conductors</i>	37
4.3	Test on <i>low voltage electrical apparatus</i>	37
4.4	Work on <i>live low voltage conductors</i>	38
4.5	Work on <i>low voltage cables</i>	38
4.6	Work or test on <i>low voltage electrical apparatus not electrically connected</i>	38
4.7	Work on <i>extra low voltage electrical apparatus</i>	38
SECTION 5 – <i>MECHANICAL APPARATUS</i>		39
5.1	<i>Mechanical operating work</i>	39
5.2	Work or test on <i>mechanical apparatus</i>	39
5.3	Test on <i>mechanical apparatus</i>	39
5.4	Work or test on <i>mechanical apparatus not mechanically connected</i>	40
SECTION 6 – <i>SUNDRY APPARATUS</i>		41
6.1	Access to <i>sundry apparatus</i>	41
6.2	Work on <i>sundry apparatus</i>	41
6.3	Test on <i>sundry apparatus</i>	41
6.4	Restoration of <i>sundry apparatus</i>	41
SECTION 7 – <i>CONFINED SPACES</i>		43
7.1	Access to <i>confined spaces</i>	43
7.2	Receipt of an <i>access authority</i> to enter a <i>confined space</i>	43
7.3	Cancellation of an <i>access authority</i> to enter a <i>confined space</i>	43
7.4	Restoration of a <i>confined space</i>	43
SECTION 8 – <i>HOT WORK</i>		44
8.1	Access to <i>hot work high risk areas</i>	44
8.2	Receipt of an <i>access authority</i> for <i>hot work</i> in a <i>hot work high risk area</i>	44
8.3	Cancellation of an <i>access authority</i> for <i>hot work</i> in a <i>hot work high risk area</i>	44
SECTION 9 – <i>WORK IN THE VICINITY OF APPARATUS</i>		45
9.1	General Requirements	45
9.2	Issue of an <i>authority to work in the vicinity of apparatus</i>	45
9.3	Receipt of an <i>authority to work in the vicinity of apparatus</i>	46
9.4	Transfer of receipt of an <i>authority to work in the vicinity of apparatus</i>	47

Power and Water Access to Apparatus Rules

9.5 Surrender of an *authority to work in the vicinity of apparatus* 47

9.6 Cancellation of an *authority to work in the vicinity of apparatus* 47

9.7 Assignment of a *safety observer*..... 48

SECTION 10 – *RADIO FREQUENCY TRANSMITTING APPARATUS* 49

10.1 Access to *radio frequency transmitting apparatus*..... 49

10.2 Requirements for work 49

10.3 Responsibilities of a person working on *radio frequency transmitting apparatus* ... 49

10.4 Access by other organisations 49

SECTION 1 – INTRODUCTION

1.1 Purpose

- 1.1.1 These Access to *Apparatus* Rules (referred to hereafter as these Rules) set out the principles and responsibilities for safe access to *apparatus, confined spaces* and *hot work high risk areas* owned, controlled or operated by Power and Water.

1.2 Scope

- 1.2.1 These Rules cover the requirements for persons to access *apparatus, confined spaces* and *hot work high risk areas*, for or on behalf of Power and Water when such *apparatus* and *confined spaces* are being:

- (a) commissioned;
- (b) worked on out of service;
- (c) worked on in service; or
- (d) de-commissioned.

Note: At some point when *apparatus* owned, controlled or operated by Power and Water is being commissioned, the *apparatus* may need to be connected to a source, or sources, of energy by the installation of *conductors, pipes, drive shafts, belts, etc.* Where this occurs the requirements of these Rules *shall* apply.

- 1.2.2 These Rules may be supplemented by *procedures, work instructions* or guidelines *approved* by Power and Water.
- 1.2.3 Words, and their plural, or terms shown in italics are definitions and are listed in sub-section 1.7 of these Rules.
- 1.2.4 *Live work on high voltage exposed conductors* is not included in these Rules but is covered in Power and Water Live Line Manuals.
- 1.2.5 Requirements and controls for general occupational health and safety risks (e.g. use of personal protective equipment, working at heights, etc) are dealt with in other Power and Water *approved procedures* and is not specifically addressed in these Rules.
- 1.2.6 The Chair of the Access to Apparatus Rules Committee may suspend or amend any of these Rules in special circumstances where, in his/her opinion, it is safe and appropriate to do so.

1.3 References

Australian Standard 1319	Safety signs for the occupational environment
Australian Standard 1674	Safety in welding and allied processes
Australian Standard 2067	Standard safety clearances
Australian Standard 2550.1	Cranes, hoist and winch – Safe use – General requirements
Australian Standard 2865	Confined spaces
Australian Standard 60497.3	Effects of current passing through the human body and livestock

Australian Standard 4836	Safe working on low voltage electrical installations
AS/NZS 31000	Risk management
Electricity Reform Act 2005	
Electricity Reform (Safety and Technical) Regulations 2005	
ENA NENS 03	National Guidelines for Safe Access to Electrical and Mechanical Apparatus
ENA NENS 04	National Guidelines for Safe Approach Distances to Electrical and Mechanical Apparatus
Power and Water Corporate Procedures and Work Instructions	
Workplace Health & Safety Act 2011	
Workplace Health and Safety Regulations 2010	

1.4 Documentation control

- 1.4.1 All persons required to work under these Rules *shall* have access to a current edition of these Rules by either electronic or hard copy means. Hard copy distribution *shall* be in accordance with Power and Water document and record control *procedures*.
- 1.4.2 An electronic copy of these Rules is controlled within Power and Water's *procedures* database.
- 1.4.3 Any proposed amendments to these Rules (other than that stated in clause 1.2.6) may be made via Power and Water intranet electronic form "Document Amendment Request", which can be located via the "Forms and Templates" intranet page (Staff Intranet>Forms and Templates). "Document amendment requests" proposing an amendment to these Rules *shall* be forwarded to the Access to Apparatus Rules Committee for appraisal and recommendation.

1.5 Responsibilities

- 1.5.1 The Board and Managing Director

The Board and Managing Director of Power and Water are ultimately accountable for ensuring that these Rules and associated *procedures* are implemented and appropriate to meet statutory and organisational requirements.

- 1.5.2 Power Technical Committee

The Power Technical Committee are the owners of these Rules and are responsible for endorsement and/or approval, as appropriate, of recommendations from the Access to Apparatus Rules Committee.

- 1.5.3 General Managers

- (a) General Managers are responsible for ensuring:
- (i) systems are in place to manage, monitor and review the application of these Rules and associated *procedures*;
 - (ii) training and competency assessment of *employees* is conducted to enable them to effectively perform their duties and responsibilities associated with these Rules;
 - (iii) the initiation of investigations and reviews of incidents involving these Rules; and
 - (iv) audit recommendations are acted upon within agreed timeframes.
-

1.5.4 Branch/Section Managers

- (a) Branch/Section Managers are responsible for ensuring:
- (i) the application of these Rules and associated *procedures* and that resources are provided to meet statutory and organisational requirements;
 - (ii) *employees*, and other persons as appropriate, have the necessary training and competence to perform their duties and responsibilities associated with these Rules;
 - (iii) the reporting of incidents associated with these Rules and, where necessary, the investigation of those incidents; and
 - (iv) sufficient time and resources are allocated to perform audits of the application of these Rules and that audit recommendations are acted upon within agreed timeframes.

1.5.5 The Access to Apparatus Rules Committee

The Access to Apparatus Rules Committee is responsible for:

- (a) recommending to the Power Technical Committee amendments to these Rules;
- (b) reviewing the application of these Rules and associated *procedures* to ensure compliance with statutory requirements and Business Unit needs;
- (c) ensuring the principles and *procedures* in these Rules are consistent with Industry Codes, Guides and best practice; and
- (d) reviewing and responding to enquiries or requests from *employees* on Access to Apparatus Rules matters.

1.5.6 Coordinators/Team Leaders

- (a) Coordinators/Team leaders are responsible for ensuring:
- (i) all persons under their control who are required to be *authorised persons* under these Rules are trained and assessed as *competent*, appropriate to their duties and responsibilities, prior to them undertaking any work under these Rules; and
 - (ii) that all *employees* maintain their competence to carry out their duties and responsibilities in relation to these Rules.

1.5.7 *Project Managers*

Project Managers shall ensure that all *employees* under their control who are required to be authorised under these Rules are trained and assessed as *competent*, appropriate to their duties and responsibilities, prior to them undertaking any work under these Rules.

1.5.8 *Employees*

Power and Water *employees* and persons of other organisations required to work under these Rules *shall* comply with these Rules relevant to their duties and responsibilities.

1.6 Training, assessment and authorisation

- 1.6.1 Persons required to work in accordance with the requirements of these Rules *shall* receive training appropriate to their duties and responsibilities.

- 1.6.2 Persons required to be authorised in accordance with these Rules *shall* be trained, assessed as *competent* and authorised in accordance with Power and Water *approved* authorisation *procedures*.
- 1.6.3 *Employees should* be trained in accordance with *approved* national competency standards.
- 1.6.4 *Authorised persons shall* be reassessed in accordance with *approved procedures* to ensure their competency is maintained.
- 1.6.5 A record of *authorised persons* and their categories of authorisation *shall* be maintained in accordance with Power and Water *approved* authorisation *procedures*.

1.7 Definitions

- 1.7.1 **Access authority** - means documented approval which permits access to work on or test *apparatus*.
- 1.7.2 **Access authority earth** - means *approved* earthing and short-circuiting equipment applied to *conductors* as a requirement for the issue of an *access authority*.
- 1.7.3 **Access authority signature sheet** - means a document that supplements the facility on an *access authority* to record the names of person carrying out work or test under an *access authority*.
- 1.7.4 **Access authority suspension/transfer sheet** - means a document that supplements the facility on an *access authority* to record the suspension or transfer of the receipt of an *access authority*.
- 1.7.5 **Apparatus** - means *electrical apparatus* and *mechanical apparatus*.
- 1.7.6 **Apparatus in-service** - means *apparatus* that is *energised* and is, or is available to be, operational for the purposes for which it was designed.
- 1.7.7 **Approved** - means having appropriate organisation endorsement in writing.
- 1.7.8 **Authorised person** - means a *competent* person with technical knowledge or sufficient experience who has been *approved* to act on behalf of Power and Water to perform the duty concerned.
- 1.7.9 **Authority to work in the vicinity of apparatus** - means an authority issued to a person when work is required to be performed *in the vicinity* of *apparatus*.
- 1.7.10 **Breakdown** - means fail or cease to function, operate or perform as designed.
- 1.7.11 **Bridging lead** - means an *approved conductor* which is used to maintain a current path when a *conductor* is to be broken or disconnected.
- 1.7.12 **Cable** - means an *insulated conductor* or two or more such *conductors* laid together, whether with or without fillings, reinforcements or protective coverings.
- 1.7.13 **Cage** - means a fully fenced or walled area, room or compartment, with a secured means of access, identified by a notice, containing *high voltage exposed conductors* which do not maintain *standard safety clearances*.
- 1.7.14 **Competent** - means having the skill, knowledge and attributes a person needs to complete a task.
- 1.7.15 **Conductor** - means a wire, *cable* or form of metal designed for carrying electric current.
- 1.7.16 **Confined space** - means a space as defined in Northern Territory of Australia Workplace Health and Safety Regulations.

- 1.7.17 **Confined space control measures** - means the documented risk control measures to be implemented for the entry to, or work to be carried out in or on, a *confined space*.
- 1.7.18 **Contractor** - means any person and/or organisation entering into an agreement (whether oral or written) to provide goods or services to Power and Water.
- 1.7.19 **Controller** - means the *approved* person responsible for control and/or operation of *apparatus*, *confined spaces* and *hot work high risk areas* within premises owned, controlled or operated by Power and Water.
- 1.7.20 **De-energised** - means not connected to any source of *supply* but not necessarily *isolated*.
- 1.7.21 **Defined work area** - means a rope, tape, barricade or alternative erected to identify a specific area requiring authorised entry.
- 1.7.22 **Designated high voltage access area** - means an area, which includes *high voltage conductors*, which is defined by a barrier or similar structure as a requirement for the issue of an *access authority*.
- 1.7.23 **Do not operate tag** - means an *approved* tag attached to a device as an instruction against the operation of the device.
- 1.7.24 **Earthed** - means directly connected to the general mass of earth to ensure and maintain the effective dissipation of electrical energy.
- 1.7.25 **Electrical apparatus** - means any electrical equipment, including electrical motors, transformers, switchgear, overhead lines and underground *cables*, the *conductors* of which are *live* or can be made *live*.
- 1.7.26 **Electrical operating work** - means the operation of switching devices, links, fuses or other connections intended for ready removal or replacement, proving *conductors de-energised*, the application or removal of earthing and short circuiting equipment and the application or removal of locks, where the facility exists, and/or tags.
- 1.7.27 **Employee** - means a person employed by Power and Water, a *contractor* or *subcontractor*, and a person employed by a *contractor* or *subcontractor*, who carries out work for Power and Water.
- 1.7.28 **Energised** - means connected to a source of energy.
- 1.7.29 **Exposed conductor** - means a *conductor*, approach to which is not prevented by a barrier of rigid material or by insulation which is adequate under a relevant Australian Standard specification for the voltage concerned.
- 1.7.30 **Extra low voltage (ELV)** - means nominal voltage not exceeding 50 volts alternating current or 120 volts direct current.
- 1.7.31 **Generating station** - means a building or enclosure where electrical energy is able to be generated at *high voltage*, or generated at *low voltage* and subsequently transformed to *high voltage*.
- 1.7.32 **High voltage (HV)** - means a nominal voltage exceeding 1000 volts alternating current or exceeding 1500 volts direct current.
- 1.7.33 **Hot work** - means any process involving grinding, welding, thermal or oxygen cutting or heating and other related heat producing or spark producing operations.
- 1.7.34 **Hot work control measures** - means the documented risk control measures to be implemented for *hot work* to be carried out.
-

- 1.7.35 **Hot work high risk area** - means an area in which flammable liquids, vapours or gases, combustible liquids, dusts, fibres of other flammable or explosive substances are present and may represent a risk to personnel and *apparatus* during the conduct of *hot work*.
- 1.7.36 **Instructed person** - means a person, with appropriate training or experience to enable them to identify *high voltage* and *low voltage conductors* and to be aware of the hazards electricity may present.
- 1.7.37 **Insulated** - means 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, and to mitigate the risk of electric shock or injurious leakage of current.
- 1.7.38 **In the vicinity** - means either a situation where:
- (a) a person is in close proximity to and there is a risk of either directly, or through any conducting medium, of unintentionally coming within relevant *safe approach distance to live conductors*; or
 - (b) there is a likelihood of unintentional contact with *apparatus* or services that could cause personal injury or damage.
- 1.7.39 **Isolated** - means one or a number of devices have been operated to separate *apparatus* from unwanted sources of energy and/or means of activation and the devices rendered incapable of being unintentionally re-activated.
- 1.7.40 **Live** - means *energised* or subject to hazardous induced or capacitive voltages.
- 1.7.41 **Live work** - means all work performed on components of *electrical apparatus* not *isolated*.
- 1.7.42 **Low voltage (LV)** - means nominal voltage exceeding 50 volts alternating current or 120 volts direct current but not exceeding 1000 volts alternating current or 1500 volts direct current.
- 1.7.43 **Mechanical apparatus** - means any equipment that has the ability to rotate, or is pneumatic or hydraulic in nature or contains stored energy through mechanisms, liquid, nuclear, thermal, or gas contained within the equipment.
- 1.7.44 **Mechanical operating work** - means the operation of devices that control sources of energy, such as, mechanical, pneumatic, hydraulic or fuel energy and the application or removal of locks, where the facility exists, and/or tags.
- 1.7.45 **Mobile plant** - means a crane, elevating platform, tip-truck or similar plant, any equipment fitted with a jib or boom and any device capable of raising or lowering a load.
- 1.7.46 **Non instructed person** - means a person, without appropriate training or experience to enable them to identify *high voltage* and *low voltage conductors* and to be aware of the hazards electricity may present.
- 1.7.47 **Not electrically connected** - means *electrical apparatus* disconnected from all sources of *supply* by the removal or absence of *conductors*, appropriate to the voltage and insulating medium and, not able to be *energised* by *electrical operating work*.
- 1.7.48 **Not mechanically connected** - means *mechanical apparatus* disconnected from all sources of energy or the removal of stored energies and not able to be *energised* by *mechanical operating work*.
-

- 1.7.49 **Operational checks** - means checks on *apparatus in-service* to confirm operational reliability or performance.
- 1.7.50 **Personal do not operate tag** - means an *approved* tag attached to a device by the person conducting the work as an instruction against the operation of the device.
- 1.7.51 **Person in charge** - means the person who has the responsibility of ensuring the safe conduct of work under their control.
- 1.7.52 **Preparation/restoration instruction (PRI)** - means a documented instruction setting out the steps required to prepare the *apparatus* for access and to restore the *apparatus* after access has been relinquished.
- 1.7.53 **Procedure** - means the documentation of a systematic series of actions (or activities) directed to achieve a desired result.
- 1.7.54 **Project manager** - means the person with the overall responsibility for the planning, execution, monitoring, control and closure of a project.
- 1.7.55 **Radio frequency transmitting apparatus** - means a radio frequency transmitter including the output port, co-axial *cable*, waveguide, filters, couplers and antenna.
- 1.7.56 **Radio frequency worker** - means a *competent* person trained to work on and around active radio frequency transmitting antennae.
- 1.7.57 **Safe approach distance to live conductors** - means the minimum separation in air from a *live exposed conductor* that *shall* be maintained by a person, or any object (other than *insulated* objects designed for contact with *live conductors*) held by or in contact with that person.
- 1.7.58 **Safety observer** - means a *competent* person assigned the solitary duty of observing and/or monitoring the safety of persons in potentially hazardous situations and providing warnings, where necessary.
- 1.7.59 **Screened cable** - means that the insulation covering the *conductor* cores is covered by a conducting or semi-conducting material that is connected to a neutral or earth.
- 1.7.60 **Shall** - means mandatory.
- 1.7.61 **Should** - means advisory or discretionary.
- 1.7.62 **Specified work or test** - means *approved* work or test on *apparatus in-service*, for which an *access authority* is not required.
- 1.7.63 **Standard safety clearances** - means 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.
- 1.7.64 **Statement of condition of apparatus or plant (SCAP)** - means a document that provides advice on the status of *apparatus* or plant in the charge of the *controller*.
- 1.7.65 **Substation** - means a *switchyard*, terminal station or place at which *high voltage supply* is converted or transformed.
- 1.7.66 **Sundry apparatus** - means *apparatus* not in charge of a *controller* for which an *access authority* for work or test is not required.
- 1.7.67 **Supply** - means provide electrical energy.
- 1.7.68 **Surrender** - means documented notification advising that an *access authority* is relinquished.
-

- 1.7.69 **Suspended** - means documented notification advising that permission to work or test under an *access authority* is temporarily relinquished.
- 1.7.70 **Switchyard** - an area identified by an *approved* sign(s) and surrounded by fences or walls that prevent unauthorised access inside which *high voltage exposed conductors* maintain *standard safety clearances*.
- 1.7.71 **Testing tag** - means an *approved* tag attached to a device indicating that the status of the device may be altered during testing.
- 1.7.72 **Totally enclosed electrical apparatus** - means *electrical apparatus* within which the *conductors* can only be exposed by unbolting or unlocking covers or opening shutters designed to prevent unintentional access.
- 1.7.73 **Working earth** - means *approved* earthing and short-circuiting equipment, additional to *access authority earths*, applied to *conductors* following the issue of an *access authority*.

SECTION 2 – GENERAL REQUIREMENTS FOR ACCESS TO *APPARATUS*, *CONFINED SPACES AND HOT WORK HIGH RISK AREAS*

2.1 Access to *apparatus* requirements

2.1.1 Access to *apparatus* in the charge of a *controller*

- (a) An *approved* schedule of *apparatus* in the charge of a *controller shall* be maintained for each Power and Water location.
- (b) Access to *high voltage electrical apparatus* within the *safe approach distance to live conductors* set out in clause 2.1.3 of these Rules, except for *live work* and *high voltage electrical apparatus not electrically connected*, shall be by *access authority*.
- (c) Access to work above *high voltage conductors* in circumstances involving risk to persons or damage to the *high voltage electrical apparatus* is not permitted unless the *conductors* are:
 - (i) within *totally enclosed electrical apparatus*;
 - (ii) screened with a suitable insulation material; or
 - (iii) worked on under *live work procedures*, see clause 1.2.4 of these Rules.
- (d) Access to *low voltage electrical apparatus* or *mechanical apparatus* in the charge of a *controller* for work or test shall be by *access authority* or, with the permission of the *controller*; under *sundry apparatus* requirements (see section 6 of these Rules).
- (e) Access to *live low voltage electrical apparatus* or *not electrically connected low voltage apparatus* (see clause 2.1.1 (i) of these Rules) for work or test does not require an *access authority*.
- (f) Access to *apparatus* to carry out *operational checks* shall be in accordance with *approved procedures*.

Note: *Operational checks* on *apparatus* involves checks to be carried out in a manner which minimises the potential of initiating inadvertent plant operations and/or trips while maintaining operational security.
- (g) An *approved* schedule of *specified work or test* on *apparatus in-service* shall be maintained for each Power and Water location. *Specified work or test* on *apparatus in-service* shall be in accordance with *approved procedures*.

Note: *Specified work or test* on *apparatus in-service* involves specific work or tests to be carried out, such as the replacement or cleaning of oil filters, cleaning of strainers, fault finding, etc.
- (h) Access to *high voltage electrical apparatus, not electrically connected*, to carry out work or test does not require an *access authority* provided the requirements of clause 3.11.1 of these Rules are applied.
- (i) Access to *low voltage electrical apparatus, not electrically connected*, to carry out work or test does not require an *access authority* provided there is no risk of induced and/or transferred potentials or a risk of coming within the *safe approach distance to live conductors* of other *electrical apparatus*.

- (j) Access to *mechanical apparatus, not mechanically connected*, to carry out work or test does not require an *access authority* provided measures are taken to remove or control all hazards from sources of stored energy.

2.1.2 Access for work *in the vicinity of apparatus*

Work *in the vicinity of apparatus* shall be carried out in accordance with section 9 of these Rules.

2.1.3 *Safe approach distance to live conductors*

- (a) *Non instructed persons* include members of the general public, *employees* and visitors to Power and Water premises who do not have sufficient knowledge, training or experience to be able to identify *high voltage* and *low voltage conductors*.
- (b) Where a member of the general public seeks advice on *safe approach distance to live conductors* they shall be advised of the appropriate *safe approach distance to live conductors* for the voltages concerned.
- (c) Where a *non instructed person* is an *employee* or visitor they shall be advised, where necessary, on maintaining relevant *safe approach distance to live conductors*.

Note 1: Table 1 provides the *safe approach distance to live conductors* that *non instructed persons, instructed persons* and *authorised persons* shall maintain, for the voltage concerned.

Note 2: Table 2 provides the *safe approach distance to live conductors* that *mobile plant* operated by *non instructed persons, instructed persons* and *authorised persons* without a *safety observer* and *instructed persons* and *authorised persons* with a *safety observer*, shall maintain.

Note 3: The *safe approach distance to live conductors* shown in Tables 1 and 2 are from exposed, covered and *insulated conductors* and do not apply to *earthed metallic screened cables* or *totally enclosed electrical apparatus*.

Table 1 *Safe approach distance to live conductors for non instructed persons, instructed persons and authorised persons*

Nominal phase to phase voltage (alternating current)	<i>Safe approach distance to live conductors (mm)</i>		
	<i>Non instructed persons</i>	<i>Instructed persons</i>	<i>Authorised persons</i>
Above 50 volts but not exceeding 1kV	3000	300	<i>Insulated</i> contact only
Above 1kV & up to & including 33kV	3000	1200	600
Above 33kV & up to & including 66kV	4000	2000	1000
Above 66kV & up to & including 132kV	5000	3600	1800

Table 2 Safe approach distance to live conductors for mobile plant operated by non instructed, instructed and authorised persons

Nominal phase to phase voltage (alternating current)	Safe approach distance to live conductors (mm)			
	Mobile plant operated by non instructed persons	Mobile plant operated by instructed persons or authorised persons without a safety observer	Mobile plant operated by instructed persons or authorised persons with a safety observer	
			Un-insulated portions of mobile plant	Insulated portions of mobile plant
Above 50 volts but not exceeding 1kV	3000	1000	600	Contact allowed
Above 1kV & up to & including 33kV	3000	1500	1200	700
Above 33kV & up to & including 66kV	4000	3000	2000	1000
Above 66kV & up to & including 132kV	5000	3600	3000	1800

2.1.4 Access to *sundry apparatus*

- (a) An *approved* schedule of *sundry apparatus* shall be maintained for each Power and Water location.
- (b) Access to *sundry apparatus* shall be in accordance with section 6 of these Rules.

2.1.5 Access to *confined spaces*

- (a) An *approved* schedule of *confined spaces* shall be maintained for each Power and Water location.
- (b) Entry to *confined spaces* shall be by *access authority* and in accordance with section 7 of these Rules.

2.1.6 Access to *hot work high risk areas*.

- (a) An *approved* schedule of *hot work high risk areas* shall be maintained for each Power and Water location.
- (b) Access to carry out *hot work* in *hot work high risk areas* shall be by *access authority* and in accordance with section 8 of these Rules.

2.1.7 Access to underground *cables*, water, gas and sewerage services

Access to excavate *in the vicinity* of underground *cables*, water, sewerage and gas underground services shall be in accordance with section 9 of these Rules.

2.1.8 Access to *radio frequency transmitting apparatus*

Access to *radio frequency transmitting apparatus* shall be in accordance with each location's radiation folder and section 10 of these Rules.

2.2 Request for access to *apparatus*

2.2.1 A request for access *shall* be submitted to the *controller* in accordance with *approved procedures* for:

- (a) work or test on *apparatus* in the charge of a *controller*;
- (b) entry to a *confined space*;
- (c) *hot work* in a *hot work high risk area*; or
- (d) work *in the vicinity* of *apparatus*.

2.2.2 A request for access *shall* include:

- (a) location and description of the *apparatus* to be worked on or tested;
- (b) description of the work or test;
- (c) proposed time and date of work or test; and
- (d) other relevant information required to prepare the *apparatus* for access.

2.3 Prepare *apparatus* for issue of an *access authority*

2.3.1 *Preparation/restoration instruction (PRI)*

(a) A *PRI shall* be used, except as outlined in clause 3.2.3 of these Rules, where the description of work or test is assessed as requiring an *access authority*.

(b) A *PRI shall* be:

- (i) prepared by a person authorised to prepare a *PRI*; and
- (ii) checked for correctness by a second person authorised to prepare a *PRI*.

(c) A *PRI shall* include:

- (i) a unique reference;
- (ii) description of the *apparatus* covered by the *PRI*;
- (iii) scope or the limits of *PRI*;
- (iv) any warnings and/or instructions applicable to the application of the *PRI*;
- (v) steps required to prepare the *apparatus* for access and/or restoration;
- (vi) any additional steps required to prove the integrity of the isolation, e.g. proving *de-energised*, draining, venting etc;
- (vii) the type of tag required to be attached to each device; and
- (viii) the provision for the endorsement of the completion of each step.

(d) Where the steps set out in a *PRI* require alteration they *shall* be altered by a person authorised to prepare the steps of a *PRI* in accordance with *approved procedures*.

(e) The steps of a *PRI shall* be conducted by a person authorised to conduct the steps of a *PRI*. Each step *shall* be endorsed as having been completed.

2.4 Issue of an *access authority*

2.4.1 An *access authority shall* include:

- (a) a unique reference;

- (b) location and description of the *apparatus* to be worked on or tested;
 - (c) description of the work or test;
 - (d) any other relevant warnings, precautions and information;
 - (e) provision of issue, receipt, transfer, suspension, *surrender* and cancellation;
and, where applicable
 - (f) points of isolation; and
 - (g) points of *access authority earths*.
- 2.4.2 An *access authority* shall only be issued by a person authorised to issue an *access authority* for the work or test concerned.
- 2.4.3 An *access authority* for work on *apparatus* and an *access authority* for test shall not be issued concurrently on the same *apparatus*.
- 2.4.4 More than one *access authority* for work may be issued concurrently on the same *apparatus* provided the work under each *access authority* does not affect the safety of the work being carried out under another *access authority* and provided the *access authorities*, and their associated isolations and earthing points, are controlled and coordinated by the *controller*.
- 2.4.5 Where more than one *access authority* is on issue for the same *apparatus* or where separate work teams are working under one *access authority*, work team coordination shall be the responsibility of the *authorised person(s)* in receipt of the *access authority(s)*.
- 2.4.6 Any person involved in the issue or receipt of an *access authority* who is not satisfied with the conditions of the *access authority*, may request additional precautions be taken, either before the *access authority* is issued or during the currency of the *access authority*.
- 2.4.7 Responsibilities of *authorised persons* issuing an *access authority* for work or test
- (a) The *authorised person* issuing an *access authority* for work or test shall ensure:
 - (i) the steps of the *PRI* relevant to the description of work or test on the *access authority* to be issued, have been recorded and verified in accordance with approved *procedures* as having been carried out;
 - (ii) the person receiving the *access authority* is authorised to receive an *access authority* for the work or test concerned;
 - (iii) the location, the description of *apparatus* and the description of work or test as set out on the *access authority* provides access to the *apparatus* as requested and are to the satisfaction of the *authorised person* receiving the *access authority*;
 - (iv) points of isolation, and any other steps taken to make the *apparatus* safe, are confirmed to the satisfaction of the *authorised person* receiving the *access authority*;
 - (v) where applicable, the *access authority* is endorsed with the unique reference of any *confined space* or *hot work* control measures form that is to be issued with the *access authority* and conversely the *confined space* or *hot work* control measures form is endorsed with the *access authority* unique reference;

- (vi) the person receiving the *access authority*, and any person who is to sign on the *access authority* who may be present, understands the limits of the work or test and are given all applicable warnings, precautions and information as listed on the *access authority*;
- (vii) the *access authority* is endorsed as having been issued; and
- (viii) the relevant details are communicated to the *controller*.

2.4.8 The *controller* shall ensure that relevant details of the *PR1* and the *access authority* are recorded.

2.5 Receipt of an *access authority*

2.5.1 An *access authority* shall only be received by a person authorised to receive an *access authority* for the work or test concerned.

2.5.2 Responsibilities of *authorised persons* receiving an *access authority* for work or test

- (a) The *authorised person* receiving an *access authority* for work or test shall ensure:
 - (i) where necessary, they confirm the location of any barriers and signage erected for the purposes of issuing the *access authority*;
 - (ii) no work or test is performed prior to their signing for the receipt of the *access authority*;
 - (iii) they sign the *access authority* to indicate that they understand the limits of the work or test under the *access authority*, the warnings, precautions and information given and their responsibilities under the *access authority*;
 - (iv) where necessary, control measures are identified and applied;
 - (v) that all persons required to sign on the *access authority*:
 - are informed as to the description of *apparatus*, description and limits of work or test to be carried out;
 - are given and observe the applicable warnings, precautions and information;
 - sign on before commencing any work or test;

Note: Where the facility to sign on an *access authority* has been fully utilised, an *access authority signature sheet* may be used.
 - (vi) safe work practices and, where applicable, work method statements are implemented for the work or test involved;
 - (vii) may, except in the case of an *access authority* issued for a *confined space*, give permission for a person who is not authorised to sign on the *access authority*, to sign on provided they closely supervise the person whilst they are signed on the *access authority*; and
 - (viii) the *access authority* is secure.

2.5.3 Alterations to an *access authority* conditions

Where the description and/or limits of work or test, warnings or precautions listed on the *access authority* are required to be altered:

- (a) the *authorised person* in receipt of the *access authority* shall:

- (i) endorse the *access authority* as *suspended* in accordance with clause 2.8.1 of these Rules; or
 - (ii) *surrender* the *access authority*.
- (b) the *authorised person* to issue an *access authority shall*:
- (i) check that the required alterations to the conditions of the *access authority* will not affect other *access authorities* on issue;
 - (ii) *approve* or disapprove the alterations;
 - (iii) alter the steps of the *PRI*, where necessary, in accordance with *approved procedures*;
 - (iv) carry out the altered steps of the *PRI*; and
 - (v) where the *access authority* has been suspended:
 - ensure the *access authority* is endorsed with the altered conditions; and
 - give permission for the work or test under the *access authority* to resume in accordance with clause 2.8.3 of these Rules.

2.6 Sign on an *access authority*

2.6.1 Responsibilities of persons required to sign on an *access authority*

- (a) All persons required to sign on the *access authority shall*:
- (i) sign on the *access authority* to indicate that they understand the description and limits of the work or test under the *access authority* and the warnings, precautions and information given and their responsibilities under the *access authority*;
 - (ii) follow any safety directions given by the *authorised person* in receipt of the *access authority*; and
 - (iii) before recommencing work or test on any subsequent day or shift, verify with the *authorised person* in receipt of the *access authority* that the conditions of the *access authority* are still valid.

2.7 Transfer of the receipt of an *access authority*

2.7.1 The receipt of an *access authority* may be transferred, in accordance with *approved procedures*, to another person authorised to receive the *access authority* for the work or test concerned.

Note: Where the facility on an *access authority* to record the transfer of the receipt of an *access authority* has been fully utilised, an *access authority suspension/transfer sheet* may be used.

2.7.2 The *authorised person* to whom the receipt of the *access authority* has been transferred *shall* comply with the requirements of clause 2.5.2 of these Rules.

2.7.3 The *controller shall* be notified of the transfer of the receipt of the *access authority* by the *authorised person* to whom the *access authority* was transferred.

2.8 Suspension and resumption of work or test under an *access authority*

2.8.1 Responsibilities of *authorised persons* suspending work or test under an *access authority*

- (a) When work or test is to be *suspended*, the *authorised person* in receipt of the *access authority shall*:
-

- (i) ensure all persons sign off the *access authority* to indicate that their permission to work or test is *suspended*;
- (ii) endorse the *access authority* to indicate:
 - the *apparatus* is serviceable/is not serviceable;
 - permission to work or test is *suspended*; and

Note: Where the facility on an *access authority* to record the suspension of an *access authority* has been fully utilised, an *access authority suspension/transfer sheet* may be used.

- (iii) deliver the *access authority* to a designated person/location.

2.8.2 Where work or test under an *access authority* is required to be *suspended* and the *authorised person* in receipt of the *access authority* is not available, the work or test may be *suspended* by another person authorised to receive the *access authority* for the work or test concerned provided the *authorised person* originally in receipt of the *access authority* is advised, as soon as possible, that the work or test has been *suspended*.

2.8.3 Resumption of work or test following suspension of an *access authority*

When the resumption of work or test is required following suspension of an *access authority*, the person authorised to receive the *access authority* shall:

- (a) obtain the permission of the controller to resume the work or test; and
- (b) comply with clause 2.5.2 of these Rules and *approved procedures*.

2.9 Surrender of an access authority

2.9.1 Responsibilities of *authorised persons* surrendering an *access authority* for work or test

(a) When an *access authority* is to be *surrendered*, the *authorised person* in receipt of the *access authority* shall:

- (i) ensure, where applicable, *working earths* have been removed;
- (ii) ensure all persons sign off the *access authority* to indicate they have completed their work or test;
- (iii) endorse the *access authority* with any warnings/adjustments required prior to or on return to service;
- (iv) sign the *access authority* to indicate their permission to access the *apparatus* is *surrendered*; and
- (v) advise the *controller* that the *access authority* has been *surrendered* and deliver the *access authority* to a designated person/location.

2.9.2 Where an *access authority* is required to be *surrendered* and the *authorised person* in receipt of the *access authority* is not available, the *access authority* may be *surrendered* by another person authorised to receive an *access authority* for the work or test concerned provided the *authorised person* currently in receipt of the *access authority* is advised, as soon as possible, that the *access authority* has been *surrendered*.

2.10 Cancellation of an access authority

2.10.1 Responsibilities of *authorised persons* cancelling an *access authority* for work or test

- (a) Following the *surrender* of an *access authority*, an *authorised person* cancelling an *access authority shall*:
- (i) check that all persons signed on the *access authority* have signed off;
 - (ii) check that the *access authority* has been signed as *surrendered*;
 - (iii) complete the cancellation section of the *access authority*, and
 - (iv) ensure that the necessary details are communicated to the *controller*.

2.11 Restoration of *apparatus*

2.11.1 The *authorised person* restoring the *apparatus shall* restore the *apparatus* in accordance with the *PRI*.

SECTION 3 – HIGH VOLTAGE ELECTRICAL APPARATUS

3.1 Access to *high voltage electrical apparatus*

3.1.1 Access to *switchyards* and *substations*

(a) Personal access

- (i) Persons *shall* only enter *switchyards* and *substations* if they are:
 - authorised for entry at the location concerned; or
 - an *instructed person* accompanied by a person authorised to enter the location concerned.
- (ii) All persons when entering a *switchyard* or *substation shall* inform the *controller* of the nature and likely duration of their visit, and *shall* advise the *controller* when they are leaving.

(b) *Mobile plant* or vehicle access

When *mobile plant* or vehicles are being used in a *switchyard* and are likely to come within the *safe approach distance to live conductors*, the *mobile plant* or vehicle *shall* be fitted with a trailing earth *cable* connected to the earth grid of the *switchyard*. The trailing earth *shall* be capable of carrying the maximum prospective earth fault current and, additionally, a *safety observer shall* be appointed to observe the movement of the *mobile plant* or vehicle.

3.1.2 *Switchyard* and *cage* gates and doors

- (a) Gates or doors giving access to *switchyards* and *cages shall* be kept securely closed at all times when not in immediate use.
- (b) When a gate or door is used to provide an entrance to a *designated high voltage access area*, it *shall* be fastened open when the *access authority* is issued and closed when the work or test under the *access authority* is *suspended* or the *access authority* is *surrendered*.

3.1.3 Access to *cages*

- (a) A person *shall* only enter a *cage* if they are:
 - (i) authorised for entry to *cages*; or
 - (ii) signed on an *access authority*.

3.1.4 Access to *high voltage totally enclosed electrical apparatus*

- (a) Doors enclosing *live exposed conductors shall* be kept closed except when work is being performed inside the enclosure that is not within the relevant *safe approach distance to live conductors*.
- (b) Where the unbolting, unlocking of covers or the opening of shutters of *high voltage totally enclosed electrical apparatus* may bring a person, or any object held by or in contact with that person (other than *insulated* objects designed for contact with *live conductors*), within the *safe approach distance to live conductors* then *access authority* requirements *shall* apply.

3.2 Electrical operating work on high voltage electrical apparatus

3.2.1 *Electrical operating work*, except in an emergency (see clause 3.2.2 of these Rules), on *high voltage electrical apparatus* shall only be carried out by an appropriately *authorised person* and at the direction of the *controller*.

Note: The operation of *high voltage electrical apparatus not electrically connected* shall not be considered *electrical operating work*.

3.2.2 In emergency circumstances involving risk to persons or risk of damage to *apparatus*, *high voltage electrical apparatus* may be operated by an *un-authorised person* provided the *un-authorised person* carries out the operations, in accordance with *approved* emergency plans, under the direction of the *controller*.

3.2.3 *Electrical operating work* on *high voltage electrical apparatus* shall be conducted under a *PRI* except in situations involving:

(a) the *breakdown* of *high voltage electrical apparatus*;

(b) the operation of a single switch isolating radial fed *high voltage electrical apparatus* that cannot be *energised* from any other source; or

(c) the disabling of auto re-close facilities.

3.2.4 All verbal messages relating to the operation of *high voltage electrical apparatus* shall be confirmed by recipient of the message by repeating back the message to the sender. Messages shall be logged using an *approved procedure*.

3.2.5 Where *electrical operating work* is carried out for the purpose of maintaining *high voltage electrical apparatus* in a specific status for another Business Unit or organisation, i.e. *isolated*, the *controller* of the *high voltage electrical apparatus* shall:

(a) issue a *statement of condition of apparatus or plant* to the other Business Unit or organisation in accordance with *approved procedures*; and

(b) ensure the status of the *high voltage electrical apparatus* under a *statement of condition of apparatus or plant* is not be altered until the *statement of condition of apparatus or plant* has been cancelled.

3.3 Preparation of high voltage electrical apparatus for access

3.3.1 Before an *access authority* is issued for work or test on the *conductors* of *high voltage electrical apparatus* the *conductors* shall be *isolated*, *proved de-energised* and *earthed* by a person authorised to conduct the steps of a *high voltage PRI*.

3.3.2 The isolation, *proving de-energised* and earthing of single wire earth return (SWER) lines shall be in accordance with clause 3.3.1 of these Rules. Additional measures shall be applied in accordance with *approved procedures* to control localised voltage rise created by using the general mass of earth as a return *conductor*.

3.3.3 A person shall be authorised to conduct the steps of a *PRI* for *high voltage electrical apparatus* and shall comply with sub-section 2.3 of these Rules.

3.3.4 Isolation of *high voltage conductors*

(a) *Conductors* shall be *isolated* from each point of *supply*. Points of isolation shall include:

(i) *low voltage* sources, which can cause the *conductors* to become *live* at *high voltage*; and

- (ii) neutral connections of generators and transformers from common portions of any neutral system.
- (b) The effectiveness of the points of isolation *shall* be demonstrated by either:
 - (i) a visible break; or
 - (ii) where it is not possible to provide a visible break due to the design of the isolating device, the application of an *approved* testing or earthing *procedure*.
- (c) The points of isolation *shall* be locked (where the facility exists) and *do not operate tags* affixed.
- (d) If during the course of the work a point of isolation is required to be moved, any affected *access authority shall be suspended or surrendered* prior to the movement of the point of isolation.

3.3.5 Proving *de-energised high voltage conductors*

- (a) *Conductors shall be proved de-energised* at the proposed point of application of an *access authority earth* with *approved* test equipment used in accordance with *approved procedures*.
- (b) Where the *conductors of high voltage totally enclosed electrical apparatus* cannot be proved *de-energised*, an *approved earthing procedure shall be used* in accordance with clause 3.3.6(f) of these Rules.

3.3.6 Earthing of *high voltage conductors*

- (a) *Access authority earths shall be applied*, in accordance with *approved procedures*.
- (b) *Access authority earths shall be applied* between each source of *supply* and the *high voltage conductors* to be worked on.
- (c) *Access authority earths shall be applied* as close as practicable to the point of work.
- (d) *Access authority earths shall be applied* each side of *high voltage* overhead lines where they cross other *live high voltage* overhead lines.
- (e) *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.
- (f) Where the *conductors of high voltage totally enclosed electrical apparatus* cannot be proved *de-energised* prior to earthing, an *approved earthing procedure shall be used* that ensures:
 - (i) the *conductors* are initially *earthed* by integrated earthing and short-circuiting equipment with adequate fault making capacity (subsequent earths applied to the *apparatus* need not have fault-making capacity); or
 - (ii) where there is only one source of *supply*, the isolation of the *high voltage supply* occurs prior to the application of the earth using integrated "break before make" switchgear (that need not have fault-making capacity).
- (g) For work on a capacitor bank, *access authority earths shall be applied* to the *high voltage conductors* and the star point of the capacitor bank or adjacent to the neutral earthing current transformers in such a way as to ensure that all capacitor elements are discharged.

- (h) *Do not operate tags shall be affixed to access authority earths applied for work on conductors. Testing tags shall be affixed to access authority earths that may be removed and replaced for the purposes of electrical testing.*
- (i) *Where, during work under an access authority on electrical apparatus, the electrical apparatus, or part thereof, becomes not electrically connected then access authority earths attached to the not electrically connected electrical apparatus may be removed and/or replaced in accordance with approved procedures.*

3.3.7 Establishment of *designated high voltage access area*

- (a) *Where a designated high voltage access area is required to be erected as a requirement for the issue of an access authority it shall be erected in accordance with approved procedures.*
- (b) *The designated high voltage access area shall be established by a person authorised to issue an access authority for work or test on high voltage apparatus.*
- (c) *All designated high voltage access areas shall:*
 - (i) *be established, in accordance with approved procedures, after high voltage electrical apparatus is isolated, proved de-energised and earthed; and*
 - (ii) *have notices "Live high voltage conductors above or beyond" erected at points where it is possible for a person to move along a structure above ground level into the vicinity of conductors which are live.*

3.4 Issue of an access authority for work on high voltage electrical apparatus

3.4.1 A person *shall* be authorised to issue an *access authority* for work on *high voltage electrical apparatus*.

3.4.2 Any *designated high voltage access areas*, barriers and signage required for the purposes of issuing the *access authority shall* be erected by a person authorised to issue an *access authority* for work or test on *high voltage apparatus* prior to the issue of the *access authority*.

3.4.3 Responsibilities of *authorised persons* issuing an *access authority* for work on *high voltage electrical apparatus*

- (a) An *authorised person* issuing an *access authority* for work on *high voltage electrical apparatus shall* comply with the requirements of sub-section 2.4 of these Rules and *shall* ensure the *authorised person* receiving the *access authority*, and any person who is to sign on the *access authority* who may be present:
 - (i) *has identified to them those conductors which are to be worked on and the steps taken to make the conductors safe, including local points of isolation and access authority earths;*
 - (ii) *has demonstrated to their satisfaction any unearthed or remotely earthed conductors that are safe to work on or in the vicinity of;*
 - (iii) *are warned that if any person temporarily leaves the designated high voltage access area or defined work area, they shall check with the authorised person in receipt of the access authority that they are in the correct area before recommencing work;*

- (iv) are warned to limit their work to the *designated high voltage access area* or *defined work area*; and
- (v) sign on to the *access authority*.

3.5 Receipt of an *access authority* for work on *high voltage electrical apparatus*

- 3.5.1 A person *shall* be authorised to receive an *access authority* for work on *high voltage electrical apparatus*.
- 3.5.2 A person *shall* be authorised to sign on an *access authority* for work on *high voltage electrical apparatus*.
- 3.5.3 Responsibilities of *authorised persons* receiving an *access authority* for work on *high voltage electrical apparatus*
 - (a) The *authorised person* in receipt of an *access authority* for work on *high voltage electrical apparatus shall* comply with sub-section 2.5 of these Rules and, in addition, where a *designated high voltage access area* is erected:
 - (i) display the *access authority* at the entrance to the *designated high voltage access area*;
 - (ii) ensure that any person entering the *designated high voltage access area* has signed on the *access authority*;
 - (iii) ensure persons entering or leaving a *designated high voltage access area* use the established entrance;
 - (iv) if it is necessary to make a temporary additional entrance to a *designated high voltage access area* to permit the passage of plant or materials, take precautions to ensure that the safety of persons working under the *access authority* is maintained and close off the temporary additional entrance as soon as the necessary movement has been completed;
 - (v) may give permission for a person, who is not authorised to sign on the *access authority*, to sign on provided they closely supervise the person whilst they are signed on the *access authority*;
 - (vi) if there is a need for them to temporarily leave the *designated high voltage access area*, give instructions to all persons in the *designated high voltage access area* that the relevant provisions of these Rules are to be observed during the absence; and
 - (vii) ensure if there be a need for them to leave the *designated high voltage access area* on other than a temporary basis that the work *shall* cease until their return or the receipt of the *access authority* may be transferred in accordance with sub-section 2.7 of these Rules.
 - (b) The *authorised person* in receipt of an *access authority* for work on *high voltage electrical apparatus shall* ensure:
 - (i) *working earths* and *bridging leads* are applied, where necessary, during the course of the work; and
 - (ii) Where, during work under an *access authority* on *electrical apparatus* the *electrical apparatus* or part thereof, becomes *not electrically connected* that any attached *access authority earths* are removed or replaced in accordance with *approved procedures*.

3.6 Sign on an *access authority* for work on *high voltage electrical apparatus*

3.6.1 Responsibilities of *authorised persons* required to sign on an *access authority* for *high voltage electrical apparatus*

(a) *Authorised persons* signing on an *access authority* for *high voltage electrical apparatus* shall:

- (i) comply with sub-section 2.6 of these Rules;
- (ii) not leave the work area without notifying the *authorised person* in receipt of the *access authority*; and
- (iii) before recommencing work or test after having been absent from the work area for any reason verify with the *authorised person* in receipt of the *access authority* that the conditions of the *access authority* are still valid.

3.7 Transfer of the receipt of an *access authority* for work on *high voltage electrical apparatus*

3.7.1 The transfer of the receipt of an *access authority* for *high voltage electrical apparatus* shall be in accordance with sub-section 2.7 of these Rules.

3.8 Suspension of work on *high voltage electrical apparatus* under an *access authority*

3.8.1 Responsibilities of *authorised persons* suspending work on *high voltage electrical apparatus* under an *access authority*

(a) The *authorised person* suspending the work shall:

- (i) comply with clause 2.8.1 of these Rules;
- (ii) notify the *controller* of the suspension of the work under the *access authority*, its likely duration, the location of the *access authority* and whether the *high voltage electrical apparatus* is/is not serviceable so far as this work is concerned; and
- (iii) where applicable, close off the entrance to the *designated high voltage access area*.

3.8.2 Resumption of work following a suspension of work under an *access authority*

(a) Work may be resumed under the *access authority* after a suspension with the permission of the *controller* in accordance with clause 2.8.3 of these Rules.

(b) If the person intending to sign the *access authority* as the *authorised person* in receipt of the *access authority*:

- (i) is the *authorised person* who was in receipt of the *access authority* immediately prior to the suspension, persons previously signed on the *access authority* may sign on again and work may recommence; or
- (ii) is not the *authorised person* who was in receipt of the *access authority* immediately prior to the suspension of the *access authority*, then the *access authority* shall be re-issued in accordance with clause 3.4.3 of these Rules.

3.9 Surrender of an *access authority* for work on *high voltage electrical apparatus*

3.9.1 Responsibilities of *authorised persons* required to *surrender* an *access authority* for *high voltage electrical apparatus*

- (a) The *authorised person* in receipt of the *access authority* shall:
 - (i) prior to *surrendering* the *access authority* remove all *bridging leads* and *working earths* applied during the work; and
 - (ii) *surrender* the *access authority* in accordance with sub-section 2.9 of these Rules.

3.10 Cancellation of an *access authority* for work on *high voltage electrical apparatus*

3.10.1 The *access authority* shall be cancelled in accordance with sub-section 2.10 of these Rules and the *apparatus* restored in accordance with sub-section 2.11 of these Rules.

3.11 Work and test on *electrical apparatus not electrically connected*

3.11.1 An *access authority* is not required for work on *high voltage electrical apparatus not electrically connected* provided:

- (a) there are no risks from induced voltages and/or transferred potentials;
- (b) there is no risk of coming within the *safe approach distance to live conductors* of other *high voltage electrical apparatus*;
- (c) the *apparatus* (including exposed connections) is identified as *not electrically connected* in accordance with *approved procedures*;
- (d) exposed terminal connections of any *high voltage cable* or overhead line *not electrically connected* that are within a *substation* or *generating station* are identified in accordance with *approved procedures*;
- (e) each *high voltage cable not electrically connected* is identified and all other precautions as required by these Rules are followed;
- (f) each *high voltage overhead line not electrically connected* is identified and all other precautions as required by these Rules are followed;
- (g) where access to a double circuit *high voltage overhead line not electrically connected* is required, access is permitted without an *access authority* provided both circuits are *not electrically connected*;
- (h) when *high voltage electrical apparatus* is so designed that it may be withdrawn from *live conductors* of *high voltage totally enclosed electrical apparatus*, the withdrawn *high voltage electrical apparatus* may be deemed *not electrically connected*, provided that a rigid barrier effectively prevents access to the *live conductors* and also prevents the *high voltage electrical apparatus* from being reconnected to the *live conductors*; and
- (i) when work on *high voltage electrical apparatus not electrically connected* involves hazards from *low voltage* or mechanical sources then the requirements of sections 4 and 5 of these Rules *shall* apply.

3.11.2 Electrical testing

Refer to clause 3.14.11 of these Rules for electrical testing on the *conductors* of *high voltage electrical apparatus not electrically connected*.

3.12 Work on *high voltage overhead lines*

3.12.1 Sub-sections 3.2 to 3.10 of these Rules *shall* apply for work on *high voltage conductors* of overhead lines within a *switchyard* or *generating station*.

- 3.12.2 Sub-section 3.11 of these Rules *shall* apply for work on *high voltage* overhead lines *not electrically connected*.
- 3.12.3 *Approved procedures shall* apply for work on an earth wire and its connections.
- 3.12.4 *Approved procedures shall* be used to guard against induced voltages and/or transferred earth potentials.
- 3.12.5 For electrical testing of *high voltage* overhead lines the requirements of sub-section 3.14 of these Rules *shall* apply in addition to the requirements for an *access authority* for work on *high voltage* overhead lines.
- 3.12.6 To issue an *access authority* for work on *high voltage* overhead lines a person *shall* be authorised to issue an *access authority* for work on *high voltage* apparatus.
- 3.12.7 To receive an *access authority* for work on *high voltage* overhead lines a person *shall* be authorised to receive an *access authority* for work on *high voltage* apparatus.
- 3.12.8 To sign on an *access authority* for work on *high voltage* overhead lines a person *shall* be authorised to sign on an *access authority* for work on *high voltage* apparatus.
- 3.12.9 Requirements for work on *high voltage conductors* of a *high voltage* overhead line *shall* be as follows:
- (a) The *high voltage* overhead line, at the work location, *shall* be identified in accordance with *approved procedures*, proved *de-energised*, short circuited and *earthed* by the application of *access authority earths*.
 - (b) *Access authority earths shall* be applied as follows:
 - (i) close to, and where practicable, within sight of, the work area. The work on the *conductors shall* not interfere with the effectiveness of the *access authority earth*; and
 - (ii) where the work involves the connection, cutting or disconnection of any aerial *conductor* then prior to the work commencing:
 - *access authority earths shall* be connected to a common *earthed* point and then applied, one to each side of the point of work; or
 - *bridging leads shall* be applied across the point of work, after first applying a set of *access authority earths* to the *conductor*.
 - (c) On multi-circuit *high voltage* overhead line structures coloured flags *shall* be applied in accordance with *approved procedures* to identify the *conductors* that are to be regarded as *live*.
- 3.12.10 Responsibilities of *authorised persons* issuing an *access authority* for work on *high voltage* overhead lines
- (a) The *authorised person* issuing the *access authority shall*:
 - (i) comply with the requirements of sub-section 2.4 of these Rules;
 - (ii) receive advice from the *controller* that the *high voltage* overhead line has been *isolated* and *access authority earths* applied at all points from which it can be *energised*;
 - (iii) receive clearance from the *controller* to:
 - prove the overhead line *de-energised*;
 - apply *access authority earths* at specified locations;

- issue the *access authority*;
- (iv) ensure that the *conductors* of the *high voltage* overhead lines are proved *de-energised*, short circuited and *earthed* by the application of *access authority earths* at specified locations;
- (v) notify the *controller* of the unique reference of the *access authority* to be issued, the name of the person who is to be the *authorised person* in receipt of the *access authority* and the expected time of issue;
- (vi) assemble all persons who are to sign on the *access authority* and:
 - identify the *conductors* which are safe to be worked on;
 - demonstrate the points of isolation and location of *access authority earths*;
 - warn of any other *conductors*, *in the vicinity* of the work, which *shall* be regarded as *live*;
 - warn of any hazardous *low voltage* or *mechanical apparatus*;
- (vii) endorse the *access authority* as issued and advise the *controller* of the issue; and
- (viii) observe the requirements of sub-section 2.10 of these Rules when cancelling the *access authority*.

3.12.11 Responsibilities of *authorised persons* in receipt of an *access authority* for work on *high voltage* overhead lines

- (a) The *authorised person* in receipt of an *access authority shall*:
- (i) comply with clause 2.5.2 of these Rules;
 - (ii) give permission for a person, who is not authorised to sign on the *access authority*, to sign on provided they closely supervise the person whilst they are signed on the *access authority*;
 - (iii) if there is a need for them to temporarily leave the work area, give instructions to all persons in the work area that the relevant provisions of these Rules are to be observed during the absence;
 - (iv) if there be a need for them to leave the work area on other than a temporary basis the work *shall* cease until their return or the receipt of the *access authority* may be transferred in accordance with sub-section 2.7 of these Rules;
 - (v) ensure *working earths* and *bridging leads* are applied, where necessary, during the course of the work; and
 - (vi) where the receipt of the *access authority* is to be transferred, work *suspended*, work resumed or the *access authority surrendered* the requirements of clauses 3.7.1, 3.8.1, 3.8.2 and 3.9.1 respectively, of these Rules are observed.

3.12.12 Responsibilities of *authorised persons* signing on an *access authority* for work on *high voltage* overhead lines

Authorised persons signing on an *access authority* for work on *high voltage* overhead lines *shall* comply with sub-section 2.6 and sub-section 3.6 of these Rules.

3.12.13 Electrical testing

For electrical testing on the *conductors* of *high voltage* overhead lines refer to sub-section 3.14 of these Rules.

3.13 Work on *high voltage cables*

- 3.13.1 When work is to be performed on *high voltage cables*, other than that listed in clause 3.13.6 of these Rules, a request for access *shall* be submitted.
- 3.13.2 To issue an *access authority* for work on *high voltage cables* a person *shall* be authorised to issue an *access authority* for work on *high voltage* apparatus.
- 3.13.3 To receive an *access authority* for work on *high voltage cables* a person *shall* be authorised to receive an *access authority* for work on *high voltage* apparatus.
- 3.13.4 To sign on an *access authority* for work on *high voltage cables* a person *shall* be authorised to sign on an *access authority* for work on *high voltage* apparatus.
- 3.13.5 All work on *cables*, other than that listed in clause 3.13.6 of these Rules *shall* be carried out as follows:
- (a) the *cable shall* be *isolated* and *earthed* as set out in clauses 3.3.4, and 3.3.6 of these Rules;
 - (b) an *access authority* for work on the *cable shall* be issued;
 - (c) before any work is commenced on the *cable* it *shall* be identified at the work area, using *approved procedures*; and
 - (d) the *cable shall* be spiked using spiking equipment remote, and detached, from its operator.
- 3.13.6 Work may be carried out on a *cable* or its attachments without an *access authority* where:
- (a) the *cable* is *not electrically connected*, (see sub-section 3.11 of these Rules);
 - (b) minor work or repairs involving the serving of a *cable* that avoids direct contact with the metallic *cable* sheath or armouring is permitted at any point on the *cable*; or
 - (c) *cable* tracing and/or location involves the use of a current detection device external to the *cable*.
- 3.13.7 Responsibilities of *authorised persons* issuing an *access authority* for work on *high voltage cables*
- (a) The *authorised person* issuing the *access authority shall*:
 - (i) comply with the requirements of sub-section 2.4 and clause 3.4.3 of these Rules;
 - (ii) receive advice from the *controller* that the *cable* has been *isolated* and *access authority earths* applied at all points from which the *cable* can be *energised*;
 - (iii) set up the *designated high voltage access area* and issue the *access authority*;
 - (iv) ensure that all persons, who are present and required to sign on the *access authority* before commencing work, have been shown the *cables* on which they are to work and that they have been warned of the presence of any *live cables* in the immediate vicinity;
 - (v) inform the *controller* of:
-

- the unique reference of the *access authority* to be issued; and
- the issue and cancellation of the *access authority*.

3.13.8 Responsibilities of *authorised persons* in receipt of an *access authority* for work on a *high voltage cable*.

- (a) The *authorised person* in receipt of an *access authority* for work *shall*:
- (i) comply with the requirements of sub-sections 2.5 and 3.5 of these Rules;
 - (ii) before any work is commenced on the *cable* it is to be identified at the work area, using *approved procedures*;
 - (iii) the *access authority* is retained at the work area for the currency of the work; and
 - (iv) where the receipt of the *access authority* is to be transferred, work *suspended*, work resumed or the *access authority* *surrendered* the requirements of clauses 3.7.1, 3.8.1, 3.8.2 and 3.9.1 respectively of these Rules are observed.

3.13.9 Responsibilities of *authorised persons* signing on an *access authority* for work on a *high voltage cable*.

Authorised persons signing on an *access authority* for work on a *high voltage cables* *shall* comply with the requirements of sub-sections 2.6 and 3.6 of these Rules.

3.14 Electrical testing

3.14.1 An *access authority* for electrical testing *shall* be issued where the test involves:

- (a) the removal and/or replacement of *access authority earths* applied in accordance with clause 3.3.6 of these Rules;
- (b) the use of a test source on the *conductors* of *high voltage electrical apparatus*, which is capable of producing currents hazardous to the human body; or
- (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.

3.14.2 An *access authority* for electrical testing is not required when testing *high voltage electrical apparatus not electrically connected* which meets the requirements of sub-section 3.11 of these Rules.

3.14.3 Only one *access authority* for electrical testing *shall* be issued on the same *electrical apparatus* or parts thereof at any one time.

3.14.4 A person *shall* be authorised to issue an *access authority* for test on *high voltage electrical apparatus*.

3.14.5 A person *shall* be authorised to receive an *access authority* for test on *high voltage electrical apparatus*.

3.14.6 A person *shall* be authorised to sign on an *access authority* for test on *high voltage electrical apparatus*.

3.14.7 Responsibilities of *authorised persons* issuing an *access authority* for electrical testing

- (a) The *authorised person* issuing an *access authority* for electrical testing *shall*:
- (i) comply with sub-section 2.4 and clause 3.4.3 of these Rules;

- (ii) ensure that all work under current *access authorities* on the *conductors* required to be electrically tested are *suspended* or *surrendered*;
- (iii) ensure no other *access authority* for electrical testing is issued on the same *electrical apparatus* or parts thereof; and
- (iv) enter on the *access authority* for electrical testing the location of *access authority earths* that may be removed and/or replaced during the testing.

3.14.8 Responsibilities of *authorised persons* in receipt of an *access authority* for electrical testing

- (a) The *authorised person* in receipt of an *access authority* for electrical testing *shall*:
 - (i) comply with sub-section 2.5 and clause 3.5.3 of these Rules;
 - (ii) be the *person in charge* of the electrical testing; and
 - (iii) ensure the adequacy of points of isolation for the application of the proposed test voltages have been provided by a section of *earthed conductor* between each point of isolation and the place of application of the test voltage, except where:
 - the test voltage is less than 3000 volts;
 - 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 of *totally enclosed electrical apparatus*; and
 - (iv) direct the control of the switching of the test source energising the *conductors* covered by the *access authority* except where the test source is at a remote location;
 - (v) ensure adequate communications are maintained with all persons involved in the testing;
 - (vi) be responsible for the removal and replacement of *access authority earths* as permitted by the *access authority* for electrical testing;
 - (vii) for the purposes of conducting the electrical testing:
 - be permitted to disconnect and reconnect the *conductors* of the *electrical apparatus* under test provided the *conductors* and the *electrical apparatus* are *earthed* during the disconnection and reconnection;
 - carry out minor adjustments or modifications to *electrical apparatus* under test;
 - (viii) warn any person *in the vicinity* of the *conductors* under test that voltage is to be applied and in return receive an assurance that such person will remain clear of such *conductors* during the test;
 - (ix) warn any person signed on the *access authority* that they *shall* not approach the *conductors* under test until advised that the test source has been *isolated* and *access authority earths* applied;
 - (x) where induced or test voltages could be present, ensure that control measures, such as a *defined work area*, are used which prevent persons

coming within the *safe approach distance to live conductors* of any testing equipment or connection leads;

- (xi) ensure that for the duration of electrical testing, the entrance to any *designated high voltage access area* erected as a requirement for the issue of the *access authority* for electrical testing is closed and an *approved* notice warning persons of the hazards is erected at this closed entrance; and
- (xii) if any *exposed conductors* to which test voltages are to be applied are out of sight of the person operating the test source, ensure that *approved* notices are placed to warn against approach to the *exposed conductors* at such points and either:
 - a person is posted to warn other persons not to approach the *exposed conductors* during the test; or
 - fences or equivalent barriers are erected or shutters closed to prevent any person gaining inadvertent access to the *exposed conductors*; and
- (xiii) if at the test source location, be accompanied at all times during the electrical testing by a person with sufficient knowledge of the test being conducted and the test devices, to confirm that the *high voltage conductors* being tested are safe to be approached, whenever this becomes necessary; and
- (xiv) ensure that, at the conclusion of the testing any *apparatus* under test which may have become electrically charged during the course of the test is fully discharged and left in a safe condition.

3.14.9 Responsibilities of *authorised persons surrendering an access authority* for electrical testing

- (a) The *authorised person* in receipt of the *access authority* shall:
 - (i) prior to *surrendering* the *access authority* remove all test leads and test equipment applied during the work; and
 - (ii) *surrender* the *access authority* in accordance with sub-section 2.9 of these Rules.

3.14.10 Cancellation of an *access authority* for *high voltage electrical apparatus*

The *access authority* shall be cancelled and restored in accordance with sub-sections 2.10 and 2.11 of these Rules.

3.14.11 Responsibilities of persons carrying out electrical testing on *high voltage electrical apparatus not electrically connected* not requiring an *access authority* for electrical testing

- (a) the person carrying out electrical testing on *high voltage electrical apparatus not electrically connected* shall:
 - (i) be the *person in charge* of the electrical testing;
 - (ii) direct the control of the switching of the test source energising the *conductors*;
 - (iii) ensure adequate communications are maintained with all persons involved in the testing;

- (iv) warn any person *in the vicinity* of the *conductors* under test that voltage is to be applied and in return receive an assurance that such person will remain clear of such *conductors* during the test;
- (v) warn any person that they *shall* not approach the *conductors* under test until advised that the test source has been *isolated* and the *conductors* under test have been *earthed*;
- (vi) ensure that all persons working on the same *apparatus* during the currency of the testing cease work for the duration of the electrical testing and *shall* not recommence work until advised by the *person in charge* of the electrical testing;
- (vii) ensure precautions are taken to prevent any person receiving an electric shock from the test source or equipment or induced voltages;
- (viii) where induced or test voltages could be present, ensure that control measures, such as a *defined work area* with *approved* notices warning persons of the hazards, are used which prevent persons coming within the *safe approach distance to live conductors* of any testing equipment or connection leads;
- (ix) if any *exposed conductors* to which test voltages are to be applied, are out of sight of the person switching the test source ensure that *approved* notices are placed to warn against inadvertent approach to the *exposed conductors* at such points and either:
 - a person is posted to warn other persons not to approach the *exposed conductors* during the test; or
 - fences or equivalent barriers are erected or shutters closed to prevent any person gaining inadvertent access to the *exposed conductors*; and
- (x) where control measures, such as safety interlocks, etc, cannot ensure the *high voltage conductors* being tested are safe to approach or touch, they *shall* be accompanied at all times during the electrical testing by a person with sufficient knowledge of the testing and the test devices, to confirm with the *person in charge* that the *high voltage conductors* are safe to approach or touch; and
- (xi) ensure that, at the conclusion of the test, any *apparatus* which may have become electrically charged during the course of the test is fully discharged and left in a safe condition.

3.14.12 Electrical testing on *high voltage electrical apparatus* involving a test source not capable of producing currents hazardous to the human body

- (a) 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 an *access authority* for electrical testing, provided the *person in charge* of the test:
 - (i) ensures that the test source is not connected to *electrical apparatus* with a capacitance greater than 4,000 pF;
 - (ii) warns any persons who would be likely to make inadvertent contact with the *conductors* during the conduct of the test, that voltage is to be applied and, in return, obtain an assurance that such persons will remain clear of such *conductors* during the test; and

- (iii) ensure at the conclusion of the test any *apparatus* under test which may have become electrically charged during the course of the test is fully discharged and left in a safe condition.

SECTION 4 – *LOW VOLTAGE AND EXTRA LOW VOLTAGE ELECTRICAL APPARATUS*

4.1 *Electrical operating work on low voltage electrical apparatus*

- 4.1.1 A person *shall* be authorised to prepare and conduct the steps of a *PRI* for *low voltage apparatus*.
- 4.1.2 The operation of *low voltage apparatus not electrically connected shall* not be considered *electrical operating work*.
- 4.1.3 In emergency circumstances involving risk to persons or risk of damage to *apparatus, low voltage apparatus* may be operated provided the person carrying out the operations does so in accordance with *approved* emergency plans.

4.2 *Work on de-energised low voltage conductors*

- 4.2.1 Responsibilities of persons carrying out work on *de-energised low voltage conductors*
- (a) When working on *de-energised low voltage conductors* the person carrying out the work *shall*:
- (i) where working under an *access authority* comply with the requirements of sub-sections 2.5, 2.7, 2.8, and 2.9 of these Rules;
 - (ii) where working on *sundry apparatus* comply with clause 6.2.1 of these Rules;
 - (iii) ensure the *conductors* to be worked on are identified;
 - (iv) ensure that *conductors* are *isolated* from all sources of *supply*;
 - (v) prove the *conductors de-energised* with an *approved* testing device; and
 - (vi) where hazardous induced or capacitive voltages are likely to be present:
 - use *live work procedures*; or
 - earth and short-circuit the *conductors* in an *approved* manner; and
 - (vii) maintain *safe approach distance to live conductors* or take suitable precautions by screening or other means to avoid inadvertent contact with other *live conductors*; and
 - (viii) before energising *low voltage conductors* after work take precautions to ensure all persons are clear of the *conductors* and the *conductors* are safe to energise.

4.3 *Test on low voltage electrical apparatus*

- 4.3.1 Responsibilities of persons conducting a test on *low voltage electrical apparatus*
- (a) The person conducting a test on *low voltage electrical apparatus shall*:
- (i) where testing is under an *access authority* comply with the requirements of sub-sections 2.5, 2.7, 2.8, and 2.9 of these Rules;
 - (ii) where testing is on *sundry apparatus* comply with clause 6.3.1 of these Rules;
 - (iii) be the *person in charge* of the test;
 - (iv) ensure the *conductors* to be tested are identified;

- (v) ensure the *apparatus* is in a safe condition for testing;
- (vi) ensure all persons under their control involved in the testing are informed of all details relating to the testing, including the description of the *apparatus*, description of test, any precautions, warnings and relevant information;
- (vii) ensure other personnel who may be affected by the test are informed of the test, are given any applicable instructions and warned to keep clear whilst testing is in progress; and
- (viii) ensure at the completion of the test all persons are clear of the *apparatus* and the *apparatus* is left in a safe condition.

4.4 Work on *live low voltage conductors*

- 4.4.1 An *access authority* is not required to work on *live low voltage conductors*.
- 4.4.2 Responsibilities of persons carrying out *work on live low voltage conductors*
 - (a) Before commencing work on *live low voltage conductors* the person carrying out the work *shall*:
 - (i) identify the *live conductors* to be worked on; and
 - (ii) take suitable precautions by screening or other means to avoid inadvertent contact with other *live conductors* or earth.

4.5 Work on *low voltage cables*

- 4.5.1 Work on or *in the vicinity of low voltage cables shall* be in accordance with *approved procedures*.
- 4.5.2 Work *shall* not commence unless the *cable* has been identified/located in accordance with *approved procedures*.

4.6 Work or test on *low voltage electrical apparatus not electrically connected*

- 4.6.1 Work or test on *low voltage electrical apparatus not electrically connected* may be carried out without an *access authority* provided control measures are taken to:
 - (a) remove or control induced and/or transferred potentials that may be present; and
 - (b) prevent persons coming within the *safe approach distance to live conductors* of other *electrical apparatus*.

4.7 Work on *extra low voltage electrical apparatus*

- 4.7.1 Work on *live extra low voltage conductors* may be undertaken provided control measures are taken to prevent persons coming within the *safe approach distance to live conductors* of other *electrical apparatus*.
- 4.7.2 Work on *live extra low voltage conductors* for the purposes of fault finding or *operational checks shall* be carried out by *competent* persons using *approved* testing equipment.
- 4.7.3 *Extra low voltage conductors* need not be *earthed*.

SECTION 5 – *MECHANICAL APPARATUS*

5.1 *Mechanical operating work*

- 5.1.1 A person *shall* be authorised to prepare and conduct the steps of a *PRI* for *mechanical apparatus*.
- 5.1.2 The operation of *mechanical apparatus not mechanically connected shall* not be considered *mechanical operating work*.
- 5.1.3 In emergency circumstances involving risk to persons or risk of damage to *apparatus, mechanical apparatus* may be operated provided the person carrying out the operations does so in accordance with *approved* emergency plans.

5.2 *Work or test on mechanical apparatus*

- 5.2.1 Where work or test on *mechanical apparatus* is required to be carried out under an *access authority* it *shall* be done in accordance with section 2 and sub-section 5.3 of these Rules.
- 5.2.2 Where work or test on *mechanical apparatus* is required to be carried out on *sundry apparatus* it *shall* be done in accordance with section 6 of these Rules.
- 5.2.3 Where work or test on *mechanical apparatus not mechanically connected* is required it *shall* be done in accordance with sub-section 5.4 of these Rules.
- 5.2.4 Persons working on *mechanical apparatus shall* maintain *safe approach distance to live conductors* of *electrical apparatus* in accordance with clause 2.1.3 of these Rules.
- 5.2.5 Following work or test *mechanical apparatus shall* not be restored unless it is deemed to be in a serviceable condition.

5.3 *Test on mechanical apparatus*

- 5.3.1 Responsibilities of persons conducting a test on *mechanical apparatus*
 - (a) The person conducting a test on *mechanical apparatus shall*:
 - (i) where testing is under an *access authority* comply with the requirements of sub-sections 2.5, 2.7, 2.8, and 2.9 of these Rules;
 - (ii) where testing is on *sundry apparatus* comply with sub-sections 6.3 and 6.4 of these Rules;
 - (iii) be the *person in charge* of the test;
 - (iv) ensure the *apparatus* is in a safe condition for testing;
 - (v) ensure all persons under their control involved in the testing are informed of all details relating to the testing, including the description of the *apparatus*, description of test, any precautions, warnings and relevant information;
 - (vi) ensure other personnel who may be affected by the test are informed of the test, are given any applicable instructions and warned to kept clear whilst testing is in progress; and
 - (vii) ensure at the completion of the test all persons are clear of the *apparatus* and the *apparatus* is left in a safe condition.

5.4 Work or test on *mechanical apparatus not mechanically connected*

- 5.4.1 Work or test on *mechanical apparatus not mechanically connected* may be carried out without an *access authority* provided control measures are taken to remove or control all hazards from sources of stored energy prior to the commencement of work or test and for maintaining the *safe approach distance to live conductors of electrical apparatus*.

SECTION 6 – *SUNDRY APPARATUS*

6.1 Access to *sundry apparatus*

6.1.1 Persons *shall* be authorised to conduct work or test on *sundry apparatus*.

6.2 Work on *sundry apparatus*

6.2.1 Responsibilities of *authorised persons* conducting work on *sundry apparatus*

(a) The *authorised person* conducting work on *sundry apparatus shall* ensure:

- (i) the *apparatus* to be worked on is *isolated* and locked, where the facility exists, and *personal do not operate tags* are affixed to all isolating devices. The *personal do not operate tags shall* display the *authorised person's* name, the date of affixation and a brief description of the work to be carried out;
- (ii) where power and/or control fuses or plug-in circuit breakers are installed, the fuse carriers or circuit breakers *shall* be removed and, where the facility exists, *personal do not operate tags* affixed;
- (iii) persons who are required to work under their control are notified that the isolation has been completed, and are informed of all details relating to the isolation, including the description of the *apparatus*, limits of isolation, description of work, any warnings, precautions and information; and
- (iv) the *apparatus* is restored in accordance with sub-section 6.4 of these Rules.

6.3 Test on *sundry apparatus*

6.3.1 Responsibilities of *authorised persons* conducting testing *sundry apparatus*

(a) The *authorised person* preparing *sundry apparatus* for test *shall*:

- (i) be the *person in charge* of the test;
- (ii) ensure the *apparatus* is prepared and in a safe condition for testing and, where necessary, tags are attached to equipment and devices to safely control the test;
- (iii) ensure all persons under their control involved in the testing are informed of all details relating to the testing, including the description of the *apparatus*, description of test, any precautions, warnings and relevant information;
- (iv) ensure other personnel who may be affected by the test are informed of the test, are given any applicable instructions and warned to keep clear whilst testing is in progress; and
- (v) the *apparatus* is restored in accordance with sub-section 6.4 of these Rules.

6.4 Restoration of *sundry apparatus*

6.4.1 Responsibilities of *authorised persons* restoring *sundry apparatus* after work or test

(a) The *authorised person* restoring *sundry apparatus* after work or test *shall* ensure:

- (i) all persons involved in the work or test have been withdrawn and warned to remain clear;
 - (ii) all equipment, materials, tools and, if applicable, earthing equipment has been removed;
 - (iii) all locks and tags are removed; and
 - (iv) the *apparatus* is in a safe condition for return to service.
- 6.4.2 Where the *authorised person* who prepared the *sundry apparatus* for access is unavailable the *sundry apparatus* may be restored provided:
- (a) the person restoring the *sundry apparatus* is authorised to conduct work or test on *sundry apparatus*;
 - (b) the *sundry apparatus* is in a serviceable condition; and
 - (c) the *authorised person* restoring the *sundry apparatus* advises the *authorised person* who originally established the isolation, as soon as possible, that the isolation has been restored.

SECTION 7 – *CONFINED SPACES*

7.1 Access to *confined spaces*

- 7.1.1 Entry to *confined spaces* shall be by *access authority*.
- 7.1.2 A person shall be authorised to issue an *access authority* for entry to a *confined space* and shall comply with the requirements of sub-section 2.4 of these Rules.
- 7.1.3 A person shall be authorised to receive an *access authority* for entry to a *confined space*.
- 7.1.4 A person shall be authorised to sign on an *access authority* for entry to a *confined space*.

7.2 Receipt of an *access authority* to enter a *confined space*

- 7.2.1 Responsibilities of *authorised persons* receiving an *access authority* for entry to a *confined space*
 - (a) The *authorised person* receiving an *access authority* for entry to a *confined space*, in addition to complying with sub-sections 2.5, 2.7, 2.8, and 2.9 of these Rules, shall:
 - (i) implement any required *confined space control measures* prior to entry and/or work; and
 - (ii) enter and work in the *confined space* in accordance with relevant Australian standards and *approved procedures*.
- 7.2.2 Responsibilities of a *safety observer*
 - (a) Where a *safety observer* has been assigned for the *confined space* work they shall:
 - (ii) sign the *confined spaces control measures* as the *safety observer*;
 - (iii) observe and monitor the safety of persons in potentially hazards situations and provide warnings and, where necessary, advise of the need for the work to cease; and
 - (iv) where it is necessary for them to leave the work area, they inform the person in receipt of the *access authority* and not leave the work area until the work has ceased or another *safety observer* is assigned.

7.3 Cancellation of an *access authority* to enter a *confined space*

- 7.3.1 The *authorised person* cancelling an *access authority* to enter a *confined space* shall comply with the requirements of sub-section 2.10 of these Rules.

7.4 Restoration of a *confined space*

- 7.4.1 The authorised person restoring a *confined space* on the completion of the work under an *access authority* and shall comply with the requirements of sub-section 2.11 of these Rules.

SECTION 8 – HOT WORK

8.1 Access to *hot work high risk areas*

- 8.1.1 Access to carry out *hot work* in *hot work high risk areas* shall be by *access authority*.
- 8.1.2 A person shall be authorised to issue an *access authority* for *hot work* in *hot work high risk areas* and shall comply with sub-section 2.4 of these Rules.
- 8.1.3 A person shall be authorised to receive an *access authority* for *hot work* in a *hot work high risk area*.
- 8.1.4 A person shall be authorised to sign on an *access authority* for *hot work* in *hot work high risk areas*

8.2 Receipt of an *access authority* for *hot work* in a *hot work high risk area*

- 8.2.1 Responsibilities of *authorised persons* receiving an *access authority* for *hot work* in a *hot work high risk area*.
 - (a) The *authorised person* receiving an *access authority* for *hot work* in a *hot work high risk area*, in addition to complying with sub-sections 2.5, 2.7, 2.8, and 2.9 of these Rules, shall:
 - (i) implement any required *hot work control measures* prior to work; and
 - (ii) work in accordance with relevant Australian standards and *approved procedures*.
- 8.2.2 Responsibilities of a *safety observer*
 - (a) Where a *safety observer* has been assigned for *hot work* they shall:
 - (i) sign the *hot work control measures* as the *safety observer*;
 - (ii) observe and monitor the safety of persons in potentially hazards situations and provide warnings and, where necessary, advise of the need for the work to cease; and
 - (iii) where it is necessary for them to leave the work area, they inform the person in receipt of the *access authority* and not leave the work area until the work has ceased or another *safety observer* is assigned.

8.3 Cancellation of an *access authority* for *hot work* in a *hot work high risk area*

- 8.3.1 The authorised person cancelling an *access authority* for *hot work* shall comply with the requirements of sub-section 2.10 of these Rules.

SECTION 9 – WORK *IN THE VICINITY OF APPARATUS*

9.1 General Requirements

- 9.1.1 An *authority to work in the vicinity of apparatus* shall be used where:
- (a) work is to be carried out is *in the vicinity of electrical apparatus*; or
 - (b) *mobile plant* or equipment is required to be moved or operated *in the vicinity of electrical apparatus*.
- 9.1.2 An *authority to work in the vicinity of apparatus* shall be requested in accordance with *approved procedures*.
- 9.1.3 A risk assessment shall be conducted by Power and Water in accordance with *approved procedures* prior to the issue of an *authority to work in the vicinity of apparatus*.
- 9.1.4 Where the risk assessment identifies the need, a *safety observer* shall be assigned for the duration of the work.
- 9.1.5 *Mobile plant* operating under an *authority to work in the vicinity of apparatus* that is capable of coming within the *safe approach distance to live conductors* shall be *earthed* in accordance with *approved procedures*.
- 9.1.6 Where *mobile plant* is to be operated *in the vicinity of apparatus* and the risk assessment identifies a requirement for a *safety observer* then they shall be assigned prior to any work being undertaken.
- 9.1.7 Where excavation is to be conducted within 3 metres of underground *high voltage or low voltage cables* a risk assessment shall be conducted by Power and Water to ascertain the need for the issue of an *authority to work in the vicinity of apparatus*.
- 9.1.8 Where excavation work is to be conducted *in the vicinity of underground high voltage or low voltage cables*, the *cables* shall be identified in accordance with *approved procedures* prior to the issue of an *authority to work in the vicinity of apparatus*.
- 9.1.9 Excavation *in the vicinity of water, sewerage and gas underground services* shall be conducted in accordance with *approved procedures*.

Note: Work *in the vicinity of an underground gas pipeline* shall only be undertaken with the consent of the asset owner.

- 9.1.10 *Mobile plant* shall not excavate within 250mm of underground water and sewerage services. Excavation within 250mm of underground water and sewerage services shall only be undertaken using hand tools.

9.2 Issue of an *authority to work in the vicinity of apparatus*

- 9.2.1 An *authority to work in the vicinity of apparatus* shall include the following:
- (a) a unique reference;
 - (b) location and description of the *apparatus*;
 - (c) description of the work;
 - (d) date and time of issue, receipt and cancellation;
 - (e) its period of validity;
 - (f) limitations on the use of plant and equipment;
-

- (g) *safe approach distance to live conductors*; and
 - (h) relevant warnings, precautions and information.
- 9.2.2 A person *shall* be authorised to issue an *authority to work in the vicinity of apparatus*.
- 9.2.3 An *authority to work in the vicinity of apparatus* can be received by any person other than the person issuing the *authority*.
- 9.2.4 Responsibilities of *authorised persons* issuing an *authority to work in the vicinity of apparatus*
- (a) An *authorised person* issuing an *authority to work in the vicinity of apparatus shall*:
 - (i) instruct the person to receive the *authority to work in the vicinity of apparatus*:
 - on their responsibilities under the *authority to work in the vicinity of apparatus*;
 - where the risk assessment identifies the need, a *safety observer* is assigned for the duration of the work;
 - the requirement of any barriers and their location;
 - the need to advise Power and Water of any unforeseen changes to the description of work;
 - (ii) ensure all persons required to work *in the vicinity* are assembled and briefed on the following:
 - the description of work;
 - any limitations on access to the *apparatus*;
 - ensure any relevant documentation is attached to the *authority to work in the vicinity of apparatus*;
 - all relevant warnings, precautions and information;
 - (iii) endorse the *authority to work in the vicinity of apparatus* as issued; and
 - (iv) notify the *controller* of the issue of the *authority to work in the vicinity of apparatus* at the time of issue and the contact details of the person in receipt of the *authority to work in the vicinity of apparatus*.

9.3 Receipt of an *authority to work in the vicinity of apparatus*

- 9.3.1 Responsibilities of persons receiving an *authority to work in the vicinity of apparatus*
- (a) A person receiving an *authority to work in the vicinity of apparatus shall*:
 - (i) sign the *authority to work in the vicinity of apparatus* as recognition that they have the authority to carry out work as requested and that they understand:
 - the location and description of *apparatus in the vicinity*;
 - the description of work;
 - limitations on the use of plant and equipment, including earthing;
 - any *safe approach distance to live conductors* required to be maintained;
-

- all relevant warnings, precautions and information;
- (ii) be the *person in charge* of the work;
- (iii) where the risk assessment identifies the need, assign a *safety observer* for the duration of the work and specifically instruct them on their duties;
- (iv) ensure the *authority to work in the vicinity of apparatus* and any documented information or instructions provided to carrying out the work is safeguarded and readily available for inspection at the work area for the duration of the work;
- (v) permit other persons to sign on provided they give instructions at the work area to such persons;
- (vi) establish any barriers as requested;
- (vii) where it is necessary for the *safety observer* to leave the work area, cease all work until they return or another *safety observer* is assigned; and
- (viii) ensure, where they are absent from the work area, that all work ceases and that all persons sign off the *authority to work in the vicinity of apparatus*.

9.4 Transfer of receipt of an *authority to work in the vicinity of apparatus*

9.4.1 The receipt of an *authority to work in the vicinity of apparatus* may be transferred, in accordance with *approved procedures*, to a person who:

- (a) has previously attended an instruction at the work area by a person authorised to issue an *authority to work in the vicinity of apparatus*; or
- (b) is instructed by a person authorised to issue an *authority to work in the vicinity of apparatus*.

9.4.2 The person to whom the receipt of the *authority to work in the vicinity of apparatus* was transferred *shall* notify the person authorised to issue an *authority to work in the vicinity of apparatus* of the transfer.

9.5 Surrender of an *authority to work in the vicinity of apparatus*

9.5.1 Prior to endorsing the *authority to work in the vicinity of apparatus* as *surrendered* the person in receipt of the *authority to work in the vicinity of apparatus* *shall* ensure all persons signed on have signed off and are aware that their permission to work *in the vicinity* is *surrendered*.

9.5.2 The person who has *surrendered* the *authority to work in the vicinity of apparatus* *shall* notify Power and Water that the *authority to work in the vicinity of apparatus* has been *surrendered*.

9.6 Cancellation of an *authority to work in the vicinity of apparatus*

9.6.1 Responsibilities of *authorised persons* cancelling an *authority to work in the vicinity of apparatus*

- (a) The person cancelling an *authority to work in the vicinity of apparatus* *shall*:
 - (i) be authorised to cancel an *authority for work in the vicinity of apparatus*;
 - (ii) ensure all persons signed on to the *authority to work in the vicinity of apparatus* have signed off and are aware that work *in the vicinity* of the *apparatus* is no longer permitted; and

- (iii) endorse the *authority to work in the vicinity of apparatus* as being cancelled and notify the *controller* of the cancellation.

9.7 Assignment of a *safety observer*

9.7.1 Responsibilities of a *safety observer*

(a) A *safety observer* shall:

- (i) sign the *authority to work in the vicinity of apparatus* as the *safety observer*;
- (ii) observe and monitor the safety of persons in potentially hazards situations and provide warnings and, where necessary, advise of the need for the work to cease; and
- (iii) where it is necessary for them to leave the work area, they inform the person in receipt of the *authority to work in the vicinity of apparatus* and not leave the work area until the work has ceased or another *safety observer* is assigned.

SECTION 10 – RADIO FREQUENCY TRANSMITTING APPARATUS

10.1 Access to *radio frequency transmitting apparatus*

10.1.1 *Radio frequency transmitting apparatus shall be regarded as active until isolated in accordance with approved procedures.*

10.2 Requirements for work

10.2.1 For work to be carried out the following *shall* apply:

- (a) access to *radio frequency transmitting apparatus shall be in accordance with each site's radiation folder and clause 10.3.1 of these Rules; and*
- (b) only an *approved and qualified radio frequency worker may enter radio frequency worker access zones when antenna is active.*

10.3 Responsibilities of a person working on *radio frequency transmitting apparatus*

10.3.1 A person working *in the vicinity* of the radio frequency worker access zone *shall*:

- (a) before commencing work *in the vicinity* of the *radio frequency worker access zone*, consult the site's radiation folder to determine the prohibited access zones and *radio frequency worker access zones*;
- (b) ensure that the *radio frequency transmitting apparatus* is made inactive in accordance with *approved procedures* if the work is to be undertaken in a *radio frequency worker access zone*;
- (c) if, during the course of the work, the *radio frequency transmitting apparatus* is required to be made active, ensure that all connections have been properly reinstated and that persons are clear of the *radio frequency worker access zone* and that any plant, tools and materials have been removed unless required for testing;
- (d) when working on active *radio frequency transmitting apparatus*:
 - (i) identify the *radio frequency transmitting apparatus*;
 - (ii) use *approved working procedures*;
 - (iii) not enter prohibited access zones; and
 - (iv) take suitable precautions when entering *radio frequency worker access zones*.

10.4 Access by other organisations

10.4.1 Other organisations working on *radio frequency transmitting apparatus shall do so under their own rules and procedures.*