

ELECTRICAL SAFETY  
STANDARDS

**Standards for the  
safety of persons  
working for  
Horizon Power in  
the construction,  
testing,  
commissioning,  
operation and  
maintenance of  
Electrical  
Apparatus**



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**DOCUMENT CONTROL**

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STAKEHOLDERS	NOTIFICATION LIST
The following positions must be consulted if an update or review is required:	The following positions must be notified of any authorised change:

These Electrical Safety Standards provide the minimum electrical safety principals for activities related to construction, testing, commissioning, operation and maintenance of Horizon Power electrical networks.

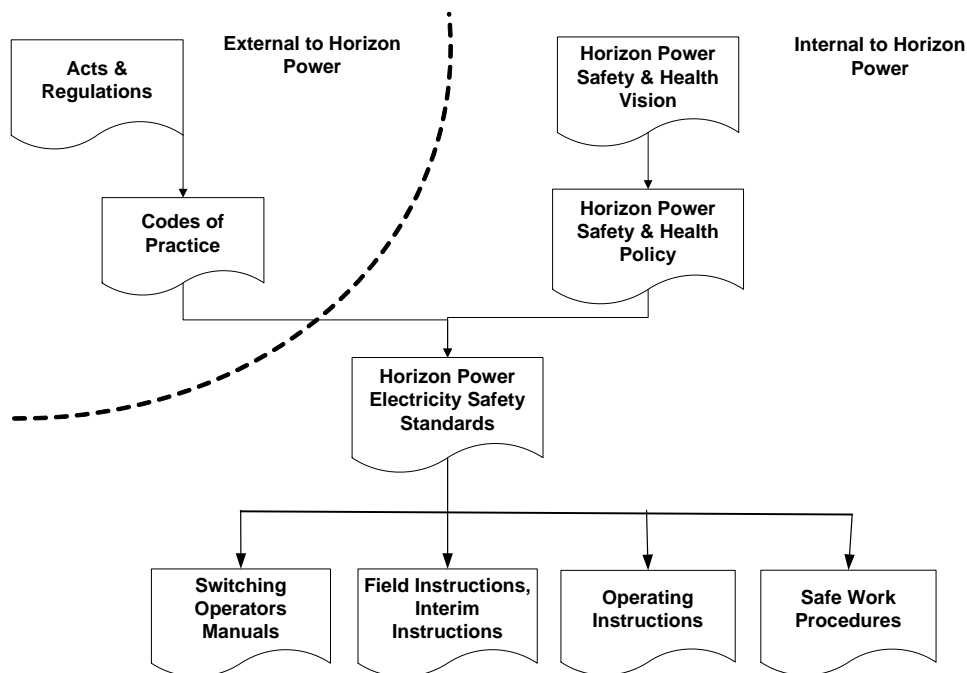
These Standards will assist Horizon Power employees, Contractors and other parties involved in managing electrical risks associated with carrying out these activities.

They will govern electrical safety and provide a more suitable match for the diverse breadth and depth of electrical activities in our business.

They have been written to support Horizon Power's overall safety and health framework and the hierarchy of Acts/Regulations, Codes of Practice, Organisational Policies, Practices and Procedures.

These Standards do not detail all the necessary requirements to carry out activities, but together these standards and other instructions, procedures and operational manuals will provide a structured safe system of work.

The following diagram outlines the framework into which these standards fit.



In the interest of your own personal safety, the safety of your workmates and the general public it is essential that you read these standards and understand how they relate to your work environment.

These Standards will be regularly reviewed so any queries and suggestions for improvement should initially be directed to the Workforce Capabilities Improvement group via your formal leader.

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## 1 APPLICATION

These Standards shall be followed by all persons who work on or near Horizon Power's electrical apparatus.

### **Safety is the priority value for all aspects of the business**

These Standards shall be followed to ensure:

- Safety of Horizon Power personnel, contractors and the public.
- Safety and security of Horizon Power's plant, public and private property.
- Continuity of supply.

### 1.1 Scope

These Standards cover basic electrical safety principles for people working on or near to Horizon Power's electrical apparatus.

These Standards underpin work instructions, procedures and standards.

Shall is to be interpreted as mandatory and Should is to be interpreted as advisory or discretionary.

**Note:** Where these Standards make reference to Person or Persons, read as including HE / HIM / MAN / SHE /HER /WOMAN /THEM.

### 1.2 Training and Authorisation

Persons who are required to work on or near Horizon Power's electrical apparatus shall not do so unless they:

- Have been appropriately trained for the work they intend to do;
- Have competency in rescue and resuscitation where required; and
- Are authorized by Horizon Power to carry out that work.

To maintain authorisation, Compliance Auditing and Work Skills Assessments shall be undertaken at regular intervals and cover as a minimum knowledge, skills and attitude necessary for an individual to perform specified activities and tasks.

Refresher training shall be conducted where deficiencies in following safety instructions, work procedures, concepts or techniques are found during Work Skills Assessments.

Refresher training may be done on the work site in conjunction with Work Skills Assessments or Compliance Audits.

### 1.3 References

National Electricity Network Safety Code (ENA NENS 01-2001)

National Guidelines for Safe Access to Electrical and Mechanical Apparatus  
(ENA NENS 03-2003)

National Guidelines for Safe Approach Distances to Electrical Apparatus  
(ENA NENS 04-2003)

Occupational Safety and Health Regulations 1996

Occupational Safety and Health Act 1984 – Reprinted as at June 2005



## 2 DEFINITIONS

### **Approved**

Means personnel, equipment, or procedures having the appropriate Horizon Power endorsement in writing.

### **Authorised Person**

Means a person with technical knowledge or sufficient experience who has been approved, or has the delegated authority to act on behalf of Horizon Power, to perform the duty concerned.

### **Cable**

Means an insulated conductor or two or more such conductors laid together, whether with or without fillings, reinforcements or protective coverings.

### **Competent Person**

Means a person having the skills, knowledge and attributes a person needs to complete a task.

### **Conducting Surface**

Means conductive surface capable of carrying an electric current

### **Conductor**

Means a wire, cable or form of metal designed for carrying electric current (includes neutrals and earths).

### **Control Authority**

Means the representative who is responsible for the control of the electrical apparatus. Typically these include:

- a) Construction authority;
- b) Commissioning authority; or
- c) Network Operator.

### **Dead (High voltage)**

Means that High Voltage conductors are isolated, short circuited and earthed.

### **Dead (Low voltage)**

Means that Low Voltage conductors are isolated and short circuited to the neutral.

### **De-energised**

Means that the electrical supply to Electrical Plant and Equipment has been isolated but not earthed.

### **Discharged**

Means conductors, which have been connected to earth so as to remove any stored electrical energy.

### **Earthed**

Means directly electrically connected to the general mass of earth so as to ensure and maintain the effective dissipation of electrical energy.

### **Earthing Equipment**

Means approved equipment fitted in an approved manner for earthing electrical apparatus.

### **Electrical Apparatus**

Means any electrical equipment, including overhead lines, underground cables and substation equipment, which are live or can be made live. It can also mean equipment used in the generation or supply of electricity that has the ability to rotate, or is pneumatic or hydraulic in nature, or contains stored energy through mechanisms, liquid or gas stored within the equipment.

### **Electricity Network**

Means transmission and distribution systems consisting of electrical apparatus which are used to convey or control the conveyance of electricity between generators' points of connection and customers' points of connection.

### **Energised**

Means connected to a source of electrical supply.

### **Handover Certificate**

Means a certificate used to transfer responsibilities between control authorities for any defined part of apparatus.

### **High Voltage or HV**

Means a voltage of or greater than:

- a) 1000 volts AC; or
- b) 1500 volts DC.

**Instructed Person**

Means a person adequately advised or supervised by an authorised person to enable them to avoid the dangers which electricity may create.

**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.

**Isolated**

Means disconnected from all possible sources of electrical supply and needing a deliberate planned physical movement to make the electrical apparatus live.

**Issuing Officer**

Means a competent person who is authorised to issue work permits.

**Link, Isolator or Disconnecter**

Means all electrical apparatus other than circuit breakers for disconnecting electrical conductors.

**Live**

Means energised or subject to hazardous induced or capacitive voltages.

**Live Line Stick. (Hot Stick)**

Means an approved, rated and tested insulated stick for use on live high voltage electrical apparatus.

**Live Work**

Means all work performed on components of electrical apparatus, not isolated, nor proved de-energised or short-circuited earthed.

**Low Voltage or LV**

Means a voltage greater than:

- a) 50 volts, but not exceeding 1000 volts AC; or
- b) 120 volts, but not exceeding 1500 volts DC.

**Mobile Plant**

Means cranes, elevating work platforms, tip trucks or similar plant, any equipment fitted with a jib or boom and any device capable of raising or lowering a load.

### **Near**

Means a situation where there is a reasonable possibility of a person, either directly or through any conducting medium, coming within the relevant safe approach distance.

### **Network Operator**

Means the owner, controller or operator of an electricity network.

### **Operating Agreement**

Provides a statement of condition status of apparatus within and between separate network operators.

### **Operation Stick**

Means an approved insulating stick for use on Low Voltage apparatus.

### **Person in Charge**

Means a person who is responsible for the work being carried out by a work party.

### **Program Earth**

Means approved earthing and short circuiting equipment applied to electrical apparatus, as a requirement for the issue of a work permit.

### **Recipient in Charge**

Means the authorised person who is responsible for the work being carried out by a work party using a work permit.

### **Safe Approach Distance (SAD)**

Means the minimum separation distance that shall be maintained by a person, mobile plant (including its load) or any object (other than insulated objects designed for contact with live conductors) from electrical apparatus.

### **Safe**

Means not posing an unacceptable risk to life, health or property.

### **Safety Observer**

Means a competent person assigned by the 'person in charge' and whose sole function is to observe and warning against unsafe approach to live electrical apparatus or other unsafe conditions.

### **Shall**

Is to be interpreted as "Mandatory".

**Short Circuiting**

Means the connecting together of conductors by approved equipment so that an electrical voltage cannot exist between them.

**Should**

Is to be interpreted as “advisory or discretionary”.

**Substation**

Means a switchyard, terminal station or place at which high voltage supply is converted, or transformed or switched.

**Switch**

Means electrical apparatus designed to make or break normal load current and make fault current.

**Switching Operator**

Means a person authorised to carry out switching operations within their limits of authority on networks and generating plant and equipment.

**Vicinity**

Means work near electrical apparatus.

**Work Permit**

Means any form of authorisation, which allows access to, work on or near, or testing of electrical and mechanical apparatus.

**Working Earth**

Means approved earthing and short circuiting equipment applied to electrical apparatus, following the issue of a work permit.

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### 3 GENERAL REQUIREMENTS

#### 3.1 Basic Safety Principles

- 3.1.1 All HV electrical apparatus shall be regarded as live until Isolated, proved to be de-energised, earthed and short-circuited, and a work permit issued according to the procedures approved by Horizon Power.
- 3.1.2 All LV electrical apparatus shall be regarded as live until isolated, proved to be de-energised and short-circuited in accordance with the procedures approved by Horizon Power.
- 3.1.3 Rescue equipment must be positioned for use when working on or close to bare live or de-energised electrical apparatus.
- 3.1.4 Personnel who work on or near live or de-energised electrical apparatus and their direct assistant(s) must be trained in the use of rescue equipment and resuscitation.

#### 3.2 Hazard Identification and Risk Assessment

- 3.2.1 Hazards shall be identified and the associated risks assessed and controlled prior to working on or near any electrical apparatus.
- 3.2.2 The risk assessment process shall be regularly audited to ensure compliance

#### 3.3 Reporting Hazards

- 3.3.1 Any Horizon Power authorised person, whether on or off duty, who finds or is advised of a hazard to public safety caused by Horizon Power's electrical apparatus shall:
  - a) Take immediate steps to protect the public;
  - b) If possible arrange for an instructed person to stand by to warn the public while the authorised person seeks assistance. This instructed person should be required to stand by until the return of the authorised person or until other assistance arrives; and
  - c) Notify Horizon Power.

**All electrical apparatus shall be treated as LIVE unless proved otherwise.**

#### 3.4 Reporting Of Electrical Incidents

- 3.4.1 All electrical incidents where there is an electrical discharge, which has or could have caused injury or damage to property shall be reported to the 'person in charge' and Horizon Power.

### **3.5 Safe Approach Distances**

- 3.5.1 Safe approach distances are defined as an area around electrical apparatus into which no part of the person, mobile plant, equipment or object (other than approved insulated objects) may encroach.
- 3.5.2 These safe approach distances shall be adopted in conjunction with the appropriate training and workplace job risk assessment.
- 3.5.3 The safe approach distances to electrical apparatus for persons, vehicles and plant shall be adhered to at all times.
- 3.5.4 All persons who work near live electrical apparatus shall understand the hazards and the limits of their movements.
- 3.5.5 A safety observer shall be appointed when persons are working on or mobile plant is operated near live electrical apparatus.
- 3.5.6 Mobile plant (such as cranes and E.W.P's) operated near live electrical apparatus shall be earthed in an approved manner where there is a reasonable possibility of, either directly or through any conducting medium, coming within the relevant safe approach distance.

### **3.6 First Aid**

- 3.6.1 In the event of injury, any Employee who work in Operational Areas or undertake operational work must be trained in First Aid and appropriate first aid kits shall be readily available for use at all worksites.

### **3.7 Elevated Work Platforms**

- 3.7.1 All elevated work platforms used near live electrical apparatus must be insulated to a voltage equal to or greater than the operating voltage of the apparatus.

### **3.8 Tools And Equipment**

- 3.8.1 Only Horizon Power approved tools and equipment shall be used unless otherwise authorised as part of approved development.
- 3.8.2 Any defects or hazards with tools or equipment shall be tagged out of service, segregated from further use, and reported to the 'person in charge' as soon as possible.
- 3.8.3 Tools and equipment shall be periodically inspected and / or tested to ensure their safety for use.



### **3.9 Ladders and Scaffold**

- 3.9.1 Ladders and scaffold used when working on or near live electrical apparatus shall be approved for electrical work.
- 3.9.2 Ladders and scaffold accessible to the public shall not be left unattended in the working position.
- 3.9.3 Ladders and scaffold shall be periodically inspected and/or tested to ensure their safety for use.

### **3.10 Personal Protective Clothing and Equipment**

- 3.10.1 All Horizon Power employees and contractors who work on or near Horizon Power 's electrical network shall wear approved personal protective clothing and equipment.
- 3.10.2 Approved personal protective equipment (PPE) specified for the task or work area shall be worn.
- 3.10.3 Before undertaking any work each person shall check and ensure that all personal protective clothing and equipment is in good order and appropriate for the task or work being undertaken.
- 3.10.4 All defective personal protective clothing and equipment must be removed from use / service.

### **3.11 Permission To Work**

- 3.11.1 A work permit shall be issued before approved work starts on or near any electrical apparatus.
- 3.11.2 A person working under the authority of a work permit shall be responsible to carry out that work under the conditions contained in the work permit. The person shall also be satisfied that the required safety precautions have been taken. Each section of the Work Permit shall be filled out by the relevant person determined in the Work Permit.
- 3.11.3 A person who permanently leaves the work site shall sign off the work permit.
- 3.11.4 A person who temporarily leaves the work site shall sign off the work permit and on return before starting work check with the Recipient in Charge that the conditions of the work permit have not changed before re-signing on the work permit.

### **3.12 Handover Certificates**

- 3.12.1 All work permit issued for electrical apparatus shall be cancelled before the electrical apparatus is handed over from one Operating Authority to another.
- 3.12.2 All persons working on electrical apparatus at the time of handover shall sign on the Handover Certificate. This is to acknowledge that they understand the change in responsibility for control of that electrical apparatus.
- 3.12.3 On completion of the handover to the Operating Authority, the electrical apparatus may be connected to Horizon Power's electrical network and energised.
- 3.12.4 A Handover Certificate from the Operating Authority to the Construction Authority shall be used to retire or take electrical apparatus out of service.

### **3.13 Safety Observers**

- 3.13.1 The function of a Safety Observer, when appointed, shall be to warn all persons on that work site against unsafe approach to live electrical apparatus or other unsafe conditions.
- 3.13.2 The Person in Charge shall specifically instruct any Safety Observer in his duties on each occasion he is posted.

### **3.14 Entry To Substations**

- 3.14.1 Only inducted and authorised persons shall enter substations, switchyards or relay/control rooms.
- 3.14.2 The Control Authority shall be informed when any person enters or departs from a Substation, switchyard or relay/control room. This may not be required in the case of distribution Substations.

### **3.15 Energising Electrical Apparatus**

- 3.15.1 Before energising electrical apparatus the Person in Charge of the work shall ensure that all persons and relevant equipment are clear of that electrical apparatus.

## 4 WORK PERMITS

### 4.1 General

- 4.1.1 A work permit provides authority for access to electrical apparatus for the purpose of work:
- a) On; or
  - b) Near; or
  - c) Testing.
- 4.1.2 Primary electrical apparatus such as Circuit Breakers, Isolators, and Power Transformers etc may remain in service while work is carried out on the control and protection circuits as long as there is adequate electrical protection coverage for the electrical apparatus.
- 4.1.3 When work is carried out on the control circuit of primary electrical apparatus; it shall be made incapable of operating this equipment. The exceptions are when the Person in Charge authorises otherwise or where noted on the work permit.
- 4.1.4 Each work permit shall have its own isolation tags and they shall be fitted and removed by the Switching Operator or Isolating Officer.
- 4.1.5 The Recipient in Charge and all competent persons shall sign on to the work permit prior to the start of work
- 4.1.6 The Recipient in Charge and all competent persons shall sign off the work permit before the Work Permit can be cancelled.

### 4.2 Dead Access

- 4.2.1 Electrical apparatus shall be made dead.
- 4.2.2 The Recipient in Charge shall advise all competent persons of the isolation and program earth locations
- 4.2.3 The Recipient in Charge may remove or install working earth's and shall advise all competent persons
- 4.2.4 Multiple Permits may exist on single electrical apparatus
- 4.2.5 Program Earths may be temporarily removed during work ONLY for the purpose of doing a test and only after:**
- a) All persons working under the work permit are notified;
  - b) The Issuing Officer has granted permission.
- 4.2.6 Work shall not restart until the test is complete and earths reapplied.

### 4.3 Vicinity or Live Access

- 4.3.1 The Recipient in Charge shall advise all persons of the live electrical apparatus and safe approach distance.
- 4.3.2 Multiple work permits may exist on single electrical apparatus.

### 4.4 Testing

- 4.4.1 The Recipient in Charge shall advise all competent persons of the points of isolation, safe work area, live electrical apparatus and safe approach distance.
- 4.4.2 Multiple work permits cannot exist on single electrical apparatus.
- 4.4.3 A work permit to test may be issued for work on the control and protection circuits of a primary electrical apparatus even though a separate work permit has been issued for primary access. Adequate secondary isolations shall be made.
- 4.4.4 The Recipient in Charge may remove or install earths and shall advise all competent persons.

The Recipient in Charge may energise any electrical apparatus for the purpose of testing, provided all persons of the work party have been notified beforehand.

### 4.5 Electrical Apparatus Declared Out of Use

- 4.5.1 The Control Authority may declare electrical apparatus out of use by removing from each source of electrical supply a permanent length of conductor: -
  - a) For High Voltage the length of conductor shall be at least equal to the minimum safe approach distance for the voltage concerned; and
  - b) For Low Voltage the length of conductor need not be removed but a minimum gap of 150mm is required.

**Note:** Fuses, Links, Switches or Isolators shall not be regarded as a permanent length of conductor.

- 4.5.2 Electrical apparatus declared out of use may be worked on without a work permit.
- 4.5.3 Even though electrical apparatus is declared out of use, consideration shall be given to the possibility of induction, lightning strikes, static charges etc. earths should be applied as required.

## 5 HIGH VOLTAGE

### 5.1 General

- 5.1.1 The description and location of the electrical apparatus to be worked on and the safety measures to be taken shall be clearly understood by all persons intending to work on that electrical apparatus.
- 5.1.2 A person shall not touch any insulator that is in direct contact with a Live Conductor. Insulators are defined as Pin, Disc strings, Post and Polymer types.

**Note:** This does not apply to Authorised HV Live glove and barrier work.

### 5.2 Remote or Automatically Controlled Electrical Apparatus

- 5.2.1 Prior to the issue of a work permit to work on or near live electrical apparatus, the remote or automatic function shall be made inoperative.

### 5.3 Approach to Cables

- 5.3.1 Cables energised at high voltage shall not be moved unless permission has first been given by the Control Authority, and then only under direct instruction from an authorised person.
- 5.3.2 No work shall commence on accessing conductors of high voltage cables until after:
- a) All appropriate identification and spiking procedures have been carried out (spiking does not apply to terminations); and
  - b) A work permit has been issued.

### 5.4 Live High Voltage Work

- 5.4.1 Live high voltage work shall only be carried out by authorised and competent persons and in accordance with the provisions of the HV Live Work Manual.
- 5.4.2 Permission to work shall be in the form of a work permit.

### 5.5 High Voltage Switching and Earthing

#### 5.5.1 General

- 5.5.1.1 Switching shall only be carried out by Authorised Switching Operators and within the limits of the switching authority issued.

**Note:** If a serious risk to a person or property exists a person unauthorized to switch may switch under the direction of an Authorised Switching Operator. The person under direction shall be competent and wear appropriate PPE.

5.5.1.2 For work continuing for any length of time, before work commences each day the Person in Charge shall inspect earthing equipment to make sure the earthing equipment in use is still correctly installed.

### **5.5.2 Placing Earths**

5.5.2.1 Prior to installing earths persons shall make sure approved tests have been completed to confirm that the electrical apparatus is De-energised.

5.5.2.2 Where a permanently installed earth point is available it shall be used.

5.5.2.3 Where there is no installed earth point an approved metal earthing stake shall be driven into the ground. Care shall be taken to avoid driving this stake into other underground services (Power cables, Water pipes, Telephone cables etc).

5.5.2.4 When placing earth leads the connection at the earth point shall be made first and all persons should keep clear of the earth leads.

5.5.2.5 When removing earth leads the connection at the earth point shall be removed last.

5.5.2.6 The neutral conductor of the low voltage system shall not be used as a high voltage earth.

### **5.5.3 Location of Earths**

5.5.3.1 Where physically possible earths shall be placed on all sides of the work site.

5.5.3.2 Earths should be placed so as to remain effective even if the electrical apparatus covered by the work permit is disconnected.

### **5.5.4 Capacitors and Cables**

5.5.4.1 Before any person touches de-energised Capacitors, all conductors, including neutral conductors shall be discharged and earthed.

5.5.4.2 The same precautions shall be taken with Capacitors, which are part of any electrical apparatus.

5.5.4.3 Before any person touches de-energised cables, all conductors, including screen conductors shall be discharged and earthed.

### **5.5.5 Induced Voltages (Induction)**

5.5.5.1 Where it is considered necessary to protect from induced voltages (induction), additional earthing equipment shall be used.

5.5.5.2 The Recipient in Charge is responsible to make sure all additional earthing equipment is recorded on the work permit.

### **5.5.6 Locking**

5.5.6.1 Where earthing points have locking facilities, they shall be used.

## **5.6 Dead High Voltage Work**

### **5.6.1 General**

- 5.6.1.1 High Voltage electrical apparatus shall be isolated from all sources of supply.
- 5.6.1.2 The electrical apparatus shall be proved De-energised by performing the approved test or tests.
- 5.6.1.3 The electrical apparatus shall be earthed by approved methods.
- 5.6.1.4 Approved danger or other labels shall be fitted and where practical, approved barriers and/or ropes shall be erected.

### **5.6.2 Work On Dead High Voltage**

- 5.6.2.1 No person shall touch any High Voltage electrical apparatus until:
  - a) They have signed onto a work permit; or
  - b) The electrical apparatus has been declared out of use.

### **5.6.3 Special High Voltage Isolation Requirements**

- 5.6.3.1 Some High Voltage electrical apparatus will require special isolation to be regarded as dead. This requirement could be as a result of:
  - a) The compact or complex assembly of the electrical apparatus;
  - b) The ease of inadvertent entry into adjacent live spaces;
  - c) The higher risk of inadvertent energisation from the primary system or control systems while the electrical apparatus is being accessed; or
  - d) No access to direct earth.
- 5.6.3.2 Both the Recipient in Charge and the Issuing Officer shall agree that the extra precautions such as, barriers, locking, Tagging, isolation and testing make the work area safe for the duration of the work.
- 5.6.3.3 Where the isolation and earthing points have locking facilities they shall be used.

### **5.6.4 Double Circuit Lines**

- 5.6.4.1 Where work is carried out on a High Voltage double circuit line, the electrical apparatus to be worked on shall be clearly and continuously identified in the approved manner to all persons covered by the work permit.

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## 6 LOW VOLTAGE

### 6.1 General

- 6.1.1 The description and location of the Low Voltage electrical apparatus to be worked on and the safety measures to be taken shall be clearly understood by all persons intending to work on that electrical apparatus.
- 6.1.2 The Person in Charge shall give adequate instruction to competent persons before work commences on or near Low Voltage electrical apparatus.

### 6.2 Live Low Voltage Work

- 6.2.1 Only competent persons using approved work methods shall carry out work on uninsulated live Low Voltage electrical apparatus.
- 6.2.2 Do not allow different parts of the body to make contact with separate uninsulated live Low Voltage electrical apparatus and conducting surfaces of different voltages at the same time.
- 6.2.3 Approved gloves shall be worn when working on or near live Low Voltage electrical apparatus except where approved methods permit otherwise.
- 6.2.4 Tools used for work on any live Low Voltage electrical apparatus shall be approved for the task concerned.
- 6.2.5 Approved safety equipment shall be used to prevent inadvertent contact with live Low Voltage electrical apparatus.
- 6.2.6 When handling any tools or equipment, care shall be taken to avoid contact with adjacent live Low Voltage electrical apparatus and conducting surfaces of different voltages at the same time.
- 6.2.7 Approved insulating covers shall be used to prevent inadvertent contact with live Low Voltage electrical apparatus or conducting surfaces of different voltages except where approved methods permit otherwise.
- 6.2.8 A competent assistant shall be present when work is being carried out on live Low Voltage electrical apparatus except for the following tasks:
  - a) Testing, removal and installation of meters;
  - b) Inspection and replacement of fuses;
  - c) Maintenance of control circuits; or
  - d) Work carried out with Operating Sticks.

### **6.2.9 De-Energised / Isolated Low Voltage Work**

6.2.10 Low voltage electrical apparatus must be Isolated in such a way the circuit cannot be inadvertently energised.

6.2.11 Where the Low Voltage electrical apparatus cannot be made Dead (short circuited) then the electrical apparatus shall be treated as LIVE.

### **6.3 Dead Low Voltage Work**

#### **6.3.1 General**

6.3.2 Low Voltage electrical apparatus shall be Isolated from all sources of supply.

6.3.3 The Low Voltage electrical apparatus shall be proved de energised by an approved test.

6.3.4 Low Voltage overhead electrical apparatus shall be short-circuited using approved equipment.

6.3.5 All control and isolation points shall be danger labelled and barriered off or locked out except where a section of conductor etc has been removed to create an isolation point. At these isolation points a danger label will only be required.

#### **6.3.6 Work On Dead Low Voltage**

6.3.7 No person shall commence work on any dead Low Voltage electrical apparatus until:

- a) They have signed onto a work permit; or
- b) The Low Voltage electrical apparatus has been declared Out of Use.