

- 4.6 There must be an assessment of overhead and underground power lines and a system in place to mitigate the hazards associated with working in close proximity to prevent contact by personnel or equipment.

## 5 Revision history

Version no.	Effective date	Prepared by	Authorised by	
1	Jan 2001	CEO Safety Adviser	ExCo	
Version no.	Revision date	Revised by	Authorised by	Reason for change
2	December 2008	Paul Dewar; Adrian van Tonder	Rob Davies	Incorporation of suggested changes from operations and alignment with HSEQ management system.

## C2 - Electrical safety

### 1 Scope

This standard is applicable to all Rio Tinto business units and managed operations, including new acquisitions, admin/corporate offices and research facilities located off site; during exploration, through all development phases and construction, operation to closure and - where applicable - for post closure management.

- 1.1 This standard applies to all electrical work above 110 volts DC or 50 volts AC.

### 2 Competency standards and safe work procedures

- 2.1 There shall be demonstrated job and equipment-specific electrical competency standards and safe work procedures for all electrical work, ie construction, decommissioning and demolition of electrical equipment.
- 2.2 The competency standards shall specify the frequency for re-certification, which shall be no less than every two years and address job and equipment-specific safe work procedures.

- 2.3 All electrical work must be conducted by competent personnel in accordance with governing regulation, code, design criteria and safe work procedures.
- 2.4 There shall be an arc flash protection program in place to determine incident energies and define the appropriate PPE and associated procedures to mitigate the hazard.

## **3 Electrical equipment**

- 3.1 Electrical safety devices such as earth leakage and overload protection shall be installed on all final distribution circuits and the settings established by qualified personnel.
- 3.2 Electrical equipment, grounding continuity and electrical safety devices shall be inspected and/or tested on a suitable schedule and the findings recorded.
- 3.3 There must be a system for removing electrical equipment unfit or unsafe for purpose.
- 3.4 There must be a system for maintaining an up-to-date set of single line diagrams, with supporting documentation showing: system fault calculations; equipment details; electrical protection discrimination curves; and cable ratings.

## 4 Isolation and access

- 4.1 Equipment shall be isolated in accordance with the site Isolation procedure (see Rio Tinto standard C1 Isolation). All energised electrical work will require a safe work procedure and, with the exception of voltage testing and where no tools are used, will require an Energised Electrical Work Permit.
- 4.2 Electrical panels, enclosures, control centres, substations and equipment shall be appropriately guarded, labelled, and made inaccessible (except for emergency shut off mechanisms) to unauthorised personnel. Areas containing such equipment are 'controlled areas'.
- 4.3 Where it is necessary for untrained personnel (eg visitors) to enter controlled areas there shall be a system for communicating the hazards and for escorting them with appropriately trained personnel. Contractors must have a permit to work in controlled areas.
- 4.4 Access to an electrical cabinet or other enclosure with exposed energised terminals in excess of 1,000 volts is prohibited.
- 4.5 Employees and contractors exposed to electrical hazards shall receive electrical hazard training at the commencement of their employment and thereafter on an annual basis. The training shall address the equipment and conditions specific to the work area of the personnel and be documented.