Major Hazard Theme

Jan - Feb 2024 – Electrical Safety

INTRODUCTION

Did you know that mines are considered the most dangerous place for using electrical power? In fact the electrical fatality rate in the mining industry is 8-12 times higher than in other industries. As you know, electricity is an integral part of modern mining and is identified as a major hazard here at Ok Tedi Operations.

Electrical HAZARDS include:

- Damaged electrical power lines
- Working near power lines
- Damaged cables and equipment in wet or dusty conditions or close to metal ladders, etc
- Unsafe, untested or non-compliant electrical installations
- Generated heat from overloaded electrical equipment
- Faulty or damaged earthing conductors associated with electrical installations.

Electricity RISKS includes:

- Injury / death
- Arc flash / fire / explosion
- Equipment / environment damage
- Shutdown and loss of production.

REMEMBER these 10 Electrical Safety Rules

- Prevent electrical equipment from contacting wet areas
- Ensure safe use when unplugging
- Install properly and tidy electrical cords
- Understand your switchboard
- Look out for electrical lines
- Childproof your outlets
- Investigate Flickering Lights
- Install warning signs
- Don't DIY
- Call for help

Be the CONTROL not the HAZARD

Only approved portable electrical equipment is permitted to be used on site. Equipment must be tested and tagged by an authorised person before use.

Portable electrical equipment may be protected by a site approved residual current device (RCD).

Inspect equipment before use and isolate and tag out damaged or faulty equipment.

Know how to deal with an electrical incident and how to raise an emergency response. Know the location and use of rescue kits and appropriate fire extinguishers.

All personnel receiving or suspected to electrical shock needs to advise their work supervisor and report to the medical centre.

Electrical Installations

All electrical installations must be appropriately signed and protected to prevent unauthorised access.

Work in an electrical installation must only be undertaken by a competent and authorised electrician.

Electrical equipment must be isolated by an authorised electrical worker.

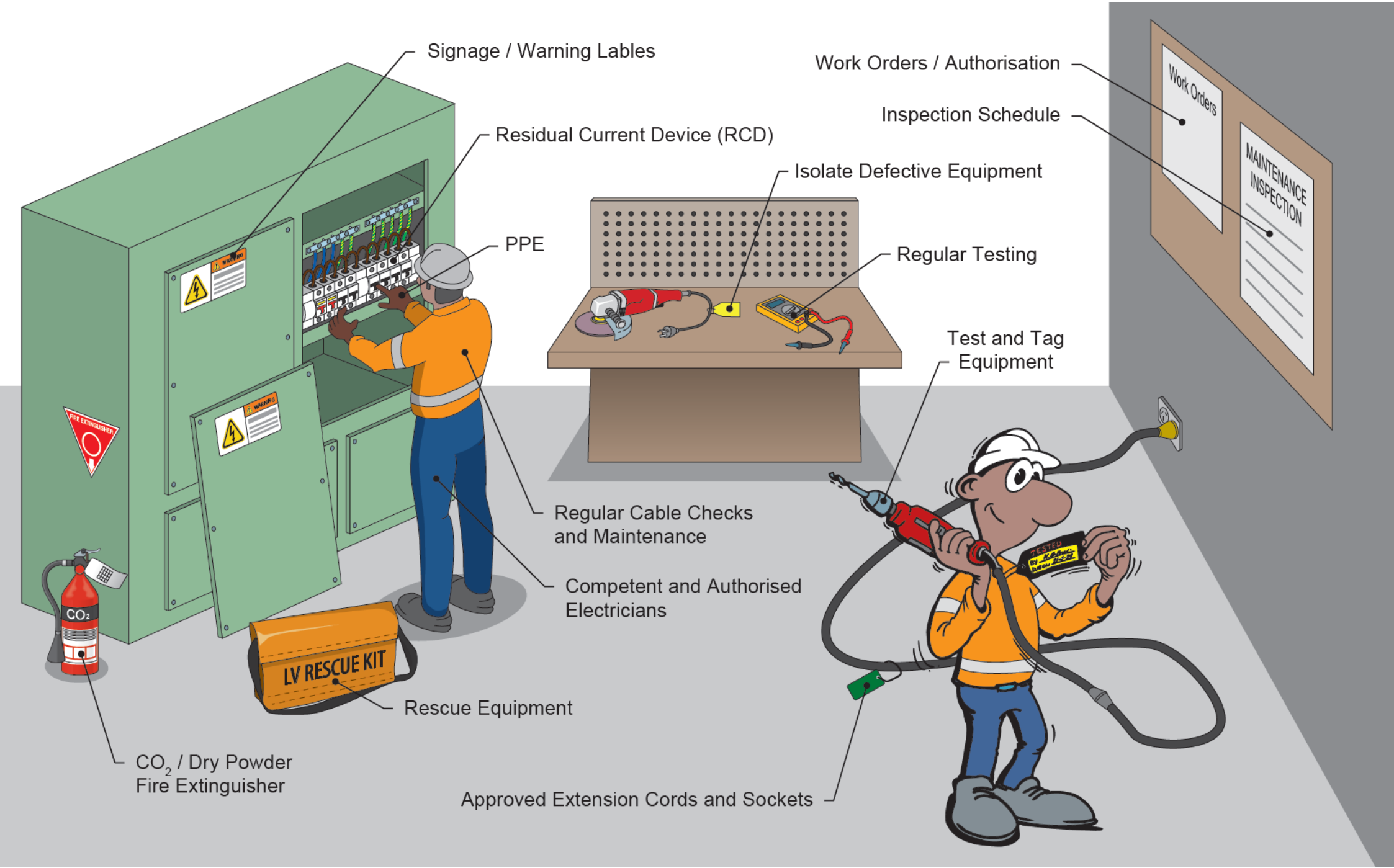
Wear the correct flash arc rated PPE if working in an electrical installation.

Audit and Inspections

All electrical equipment, systems and installations must be regularly inspected and monitored by an authorised person.

Managers must conduct a 274 Inspection in accordance with PNG Mining Safety Act 1977.

All electrical equipment and systems must be installed, tested, repaired and maintained by competent authorised personnel to OTML Electrical Engineering Site Specifications and relevant Australian Standards.


Signage / Warning Lables
Residual Current Device (RCD)
PPE
Isolate Defective Equipment
Regular Testing
Work Orders / Authorisation
Inspection Schedule
Work Orders
MAINTENANCE INSPECTION
Test and Tag Equipment
Regular Cable Checks and Maintenance
Competent and Authorised Electricians
LV RESCUE KIT
Rescue Equipment
CO_2 / Dry Powder Fire Extinguisher
Approved Extension Cords and Sockets

KEY CONTROLS

Operators / Employees

- Am I trained and competent and authorised to use the portable electrical equipment?
- Have I performed a pre-operational inspection of portable electrical equipment?
- Have I checked that all portable electrical equipment undergone regular testing and tagging?
- Is all portable electrical equipment protected by residual current devices (RCD's)?
- Have I tagged out any defective portable electrical equipment?
- Am I aware of how to deal with an electrical incident and how to raise an emergency response. Know the location and use of rescue kits and appropriate fire extinguishers?
- Are all extension leads / cords and sockets approved for the work area?
- Am I competent and authorised to enter or access the electrical installations or perform any electrical work?
- When performing work in electrical installations I have and wear the correct flash arc rated PPE?
- Is a low voltage rescue kit available for all works that involve low voltage works or fault finding?
- Have I received authorisation prior to performing any live electrical work?
- Is intrinsically safe electrical equipment available for use in explosive atmosphere's e.g. confined space?

Supervisors / Superintendents

- Are all personnel trained and competent in the use of portable electrical equipment and associated electrical safety?
- Are pre-start checks performed on portable electrical equipment?
- Is all portable electrical equipment undergone regular testing and tagging?
- Is all portable electrical equipment protected by residual current devices (RCD's)?
- Is defective electrical equipment correctly tagged and presented for repair by authorised person prior to re-use?
- Are all personnel aware and trained how to deal with an electrical incident and how to raise an emergency response. Know the location and use of rescue kits and appropriate fire extinguishers?
- Are all extension leads / cords and sockets approved for the work area?
- Are all personnel competent and authorised to enter or access the electrical installations or perform any electrical work?
- Are all personnel performing work in electrical installations wearing the correct flash arc rated PPE?
- Are all electrical installations appropriately signed and protected to prevent unauthorised access?
- Is there a low voltage rescue kit available for all works that involve low voltage works or fault finding?
- Are all personnel authorised prior to performing any live electrical work?
- Is intrinsically safe electrical equipment available for use in explosive atmosphere's e.g. confined space?

Managers / General Managers

- Are training systems in place to ensure competencies and capabilities are achieved and maintained?
- Are pre-operational checklists developed and available for use for portable electrical equipment at site?
- Is there a schedule in place to ensure all residual current devices and earth leakage relays are regularly inspected and tagged?
- Is a register established for all high-risk electrical safety plans?
- Are procedures in place and followed for specific high-risk activities associated with electrical safety?
- Is there an inspection, testing and maintenance procedure in place to electrical apparatus is safe for use?
- Are all electrical systems installed, repaired, and maintained by competent and authorised person?
- Is there an Electrical Safety Management System/Plan (ESMS/P) by which the safe operation of an electrical system is functional throughout its lifecycle?
- Is there an Arch Flash Risk Management in place and implemented efficiently?
- Is the Electrical Maintenance for High Voltage & Low Voltage implemented?
- Is there a register for Registered Mines Electrician approved by MRA in place?
- Is there a guide for electrical PPE in place?
- Is there an Isolation Schedule for High Voltage System (3.3KV, 11KV, 22KV & 132KV) in place?
- Is there an Electrical Asset Management Standard in place and used?