Electrical Isolation Procedure

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Purpose

This Electrical Isolation Procedure sets out the minimum requirements for safely isolating, locking out, tagging and testing electrical equipment and circuits at [Company Name]. It is designed to eliminate or minimise the risk of electric shock, arc flash, fire, unplanned energisation and related hazards during installation, commissioning, maintenance, fault-finding, modification and decommissioning activities.

This procedure applies to all electrical work undertaken by [Company Name] workers and contractors in the following sectors:

- Electrical and solar installations, maintenance and upgrades
- Air conditioning and refrigeration systems, including chillers and plant rooms
- Manufacturing and production facilities, including automated plant and machinery
- Mining and resources operations, including fixed and mobile plant and high-voltage (HV) systems

Scope

This procedure applies to:

- All electrical equipment, circuits and systems operating at low voltage (LV), extra-low voltage (ELV) and high voltage (HV)
- Fixed and portable equipment, switchboards, distribution boards and control panels
- Solar PV systems, battery energy storage systems (BESS) and associated inverters and control gear
- HVAC and refrigeration plant, including compressors, condensers, evaporators and associated control systems
- Manufacturing and mining plant, including conveyors, pumps, crushers, processing lines, robotic cells and motor control centres (MCCs)

This procedure covers:

- Planning and preparation for isolation
- Identification of energy sources
- Isolation, lockout and tagging
- Proving de-energised (test-before-touch)
- Working on or near de-energised equipment
- Temporary re-energisation for testing
- Restoring to service and removal of isolation

It does not cover:

- Live electrical work (which is prohibited except in strictly controlled circumstances under a separate Live Work Procedure)
- Non-electrical energy sources such as hydraulic, pneumatic or mechanical systems, except where they are interlocked or controlled electrically (these are addressed in the Lockout Tagout (LOTO) Procedure)

Definitions

Key Terms

- **Authorised Person** – A competent person formally authorised by [Company Name] to perform electrical isolation, locking and tagging.
- **Competent Person** – A person who has acquired, through training, qualification or experience, the knowledge and skills to carry out the task safely.
- **De-energised** – Free from any electrical connection to a source of potential difference and not charged with electricity. Includes discharged capacitors and isolated generators.
- **Isolation** – The process of disconnecting and securing an energy source so that re-energisation is prevented.
- **Lockout** – The use of a lockout device and personal lock to secure an isolator in the OFF or safe position so it cannot be operated.
- **Tagout** – The use of a danger tag and/or out-of-service tag to indicate that equipment must not be operated.
- **Test-before-touch** – The mandatory process of verifying that equipment is de-energised using an approved test instrument immediately before work commences.
- **High Voltage (HV)** – Nominal voltage exceeding 1,000 V a.c. or 1,500 V d.c.
- **Low Voltage (LV)** – Nominal voltage exceeding 50 V a.c. or 120 V d.c. but not exceeding 1,000 V a.c. or 1,500 V d.c.
- **Extra-Low Voltage (ELV)** – Nominal voltage not exceeding 50 V a.c. or 120 V d.c.
- **Principal Contractor/PCBU** – The person conducting a business or undertaking with primary responsibility under WHS legislation.

Legislative and Standards References

This procedure has been developed with reference to, and should be read in conjunction with:

- Work Health and Safety Act and Regulation (relevant Australian jurisdiction)
- Electrical Safety Act and Regulation (where applicable)
- AS/NZS 3000: Electrical Installations (Wiring Rules)

- AS/NZS 4836: Safe Working on or Near Low-Voltage Electrical Installations and Equipment
- AS/NZS 3017: Electrical Installations – Verification Guidelines
- AS 2067: Substations and High Voltage Installations (where relevant to mining and resources)
- Codes of Practice relating to Electrical Risks in the Workplace and Managing the Risk of Plant in the Workplace

Roles and Responsibilities

Officers and Senior Management

- Ensure adequate resources are provided to implement this procedure, including isolation devices, locks, tags and test instruments.
- Ensure competent and licensed persons are engaged for electrical work.
- Verify that isolation and lockout requirements are integrated into project planning, procurement and contractor management.

Supervisors and Project Managers

- Ensure this procedure is communicated to all workers and contractors before work starts.
- Confirm that isolation points are identified in risk assessments, Safe Work Method Statements (SWMS) and Job Safety Analyses (JSAs).
- Ensure only authorised persons perform isolation, lockout and testing.
- Verify isolations are in place before work starts, particularly during shutdowns or when multiple trades are involved (e.g. on mine sites or in production plants).

Electricians and Electrical Workers

- Comply with this procedure and relevant legislation and standards at all times.
- Refuse to work if isolation cannot be achieved or maintained safely.
- Perform test-before-touch on all electrical parts that may reasonably be energised.
- Maintain personal locks, tags and test instruments in good condition.

Other Workers (Fitters, Refrigeration Mechanics, Operators, Production Staff)

- Do not operate any isolator, switch or control device that has a lock or tag fitted.
- Participate in pre-starts and toolbox talks to understand isolation arrangements.