HASLIN

Lock Out-Tag Out (LOTO) Procedure

SEQ-PR-018

Document Approval History

Document History			
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4	Update to Haslin's new branding	Jeremy Wallis	01/09/2016
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6	Additional clarification of commissioning activities, voltages, and definitions added	Iain Johnston	28/10/2024
7	Updates to describe working around energised plant or equipment	Iain Johnston	22/01/2025

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Revision	Approved By	Signature	Date
4	Jeremy Wallis	Jeremy Wallis	01/09/2016
5	Clare English	Clare English	22/12/2022
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Table of Contents:

1 Purpose

The purpose of this Procedure is to ensure adequate controls are implemented to eliminate risks associated with potential release of energy during servicing, commissioning, repairing or modification works on plant and equipment.

2 Application

This Procedure applies to all Haslin Construction sites.

3 Definitions

Term	Definition
Authorised Person	A person authorised by the Responsible Manager/Supervisor, who is sufficiently competent to lock out, tag out and isolate installations or plant for the purposes of cleaning, servicing, repairing, modification, or commissioning.
Electrical Licence	For the purposes of this Procedure, any of the following types of electrical licence issued by the applicable State or Territory electrical licencing board; • Tradesperson certificate (electrical mechanic)
Energy Sources	Anything with the capacity for doing work and includes springs under tension or compression, accumulators, capacitors and other energy storing devices.
Extra Low Voltage (ELV)	AS/NZS 3000 Wiring Rules defines Extra Low Voltage as: *Not exceeding 50VAC or 120VDC*
High Voltage (HV)	AS/NZS 3000 Wiring Rules defines High Voltage as: *Exceeding low voltage, meaning any voltage above 1000VAC or 1500VDC*
Isolation	A means to prevent energy entering the plant/service and de-energising of plant/services, in such a way as to prevent the possibility of accidental or unplanned energisation of the whole, or a specific section of the plant/service.
Isolation Procedure	A set of predetermined steps that must be followed to ensure that plant and related hazards cannot jeopardise the safety of those working on the plant.
Licenced Electrician	A person who has successfully completed a Certificate III in Electrotechnology Electrician (UEE30820-current, or UEE30806 or UEE30807 or UEE30811) and have all of the following: • A certificate of proficiency as an electrician or an electrical mechanic • At least 12 months relevant electrical wiring work experience using knowledge and understanding of the wiring rules AS/NZS 3000:2018. This experience must be in the residential, commercial and/or industrial areas • Holds an electrical licence
Lock Out Device	A device, such as a lock, used to hold an isolating device in the safe position and prevent plant/services from becoming energised. A personal lock is a lockout device applied by an authorised person, who is in control of the key.

Lock Out	When a physical lock is placed on any moving part, switch or valve, to prevent that part, switch or valve being inadvertently moved to an active or open position where a force may cause injury to a person.
Low Voltage (LV)	AS/NZS 3000 Wiring Rules defines low voltage as: *Exceeding extra-low voltage, but not exceeding 1000VAC or 1500VDC*
Restricted Person	A person not involved with, but observing the works
Tag Out	The process of affixing an Out of Service tag to a faulty piece of plant or equipment to alert another person that the plant or equipment should not be used
Visitor	A person not involved with, but observing the works

*See Appendix A for examples of locks and tags.

4 References

- WHS Act 2011
- NSW WHS Regulation 2017
- QLD WHS Act 2011
- QLD WHS Regulation 2011
- NSW Electricity (Consumer Safety) Act 2004
- NSW Electricity (Consumer Safety) Regulation 2015
- QLD Electrical Safety Act 2002
- QLD Electrical Safety Regulation 2013
- AS/NZS 3000:2018 Wiring Rules
- AS/NZS 3012 Electrical installations – construction and demolition sites
- AS/NZS 4024.1:2019 Safety of Machinery

5 Legal Requirements

Legislative obligations and requirements of Australian Standard 4024 Safeguarding of Machinery and Equipment, is that all Haslin personnel are to comply with Clause 14.3.

Isolation and Energy Dissipation – Isolation and energy dissipation consist of the four following inseparable actions:

a. Isolating (disconnecting, separating) the machine (or a defined part of the machine) from all power supplies;
b. Locking (or otherwise securing) all the isolating units in the 'isolating' position;
c. Dissipating, restraining, or containing any stored energy which may give rise to a hazard;
   Note: Energy may be stored in:

   I. Mechanical parts continuing to move through momentum;
   II. Mechanical parts liable to move by gravity;
   III. Capacitors, accumulators;
   IV. Pressurised fluid; or
   V. Springs.

d. Verifying by a safe working procedure the effect of the measures taken previously.

6 Lock-out and Tag-out Responsibilities

6.1 General

Safety locks, tags, and isolation procedures are required where plant:

- Is in a dangerous condition;

- Is being maintained;
- Has not been completely installed or commissioned;
- Is out of service for repair or alteration.

Before commencing any isolation, lock out, or tag out activities:

- Ensure an approved Safe Work Method Statement that clearly defines all activities required to be performed when conducting this type of work;
- Ensure unauthorised persons, and those not involved in the work are prevented from entering the work area by erecting physical barriers where necessary; and
- Ensure task appropriate Personal Protective Equipment is worn by all persons.

It is important to note that a tag is NOT in itself an effective isolation device. A tag acts only as a means of providing information to others at the workplace. When practicable, a lock must be used in preference to a tag as an isolation device.

6.2 Project Manager

Ensure Lock-out tag-out procedures are followed.

6.3 Site Managers and Supervisors

The following responsibilities shall apply to Site Managers and Supervisors:

- Ensure Lock-out Tag-out procedures are used. The application of lock-out devices is the responsibility of the maintenance, testing or commissioning manager, or equipment operator;
- Ensure written isolation procedures that conform to the Standard, are available for all equipment, as applicable;
- Key(s) to lock-out devices are to be retained in the possession of the Authorised Person (for multiple isolations on the same service, or person (for singular isolations) who applied the lock-out device, until the work has been completed;
- Prior to a device being unlocked, the supervisor must personally check and ensure that all employees are in a safe position and that all work has ceased.

6.4 Authorised Person

The following responsibilities apply to Authorised Persons:

a) Identify all relevant items or services associated to the plant/equipment and all hazards associated with each item;
b) Identify energy sources for each item of plant/equipment, including multiple energy sources such as electrical energy, fluids or gases under pressure, fuels, etc;
c) Authorise one or more employees (e.g. plant operator, supervisor, maintenance person, commissioning engineer) who must:
   - Stop the plant, before the above work is carried out;
   - Ensure risks associated with identified hazards are reduced to acceptable levels; and
   - Ensure the procedure for isolation/lock-out tag-out is followed.

Authorised Persons are required to reduce the risk of exposure to dangerous parts of plant and exposure to possible sources of stored energy during operation/maintenance/servicing/commissioning.

6.5 All Employees:

- Ensure their personal isolation lock is applied to the scissor lock on isolated plant or equipment;
- Ensure that equipment is isolated and locked-out prior to commencing any repairs, maintenance, or commissioning;
- Follow instructions from an Authorised Person;
- Follow Lock-out procedures in situations where the operation of an item of equipment may result in personal injury.

6.6 Visitors and Restricted Persons

Visitors and Restricted Persons are prohibited from undertaking any works on isolated plant or equipment and may observe only. Visitors and Restricted Persons are to be supervised by an Authorised Person at all times.

6.7 Isolation and tag out

Issue Permit; Isolation and Tag out form SEQ-FM-045, or Electrical Permit SEQ-FM-046.

All energy sources which are potentially hazardous to personnel shall be isolated, verified as safe and locked out before any work is undertaken on a piece of equipment. It is not permitted to override or tamper with an isolator with any lock and/or multi-lock device attached.

Any variation from this Procedure and the listed exceptions needs to be risk assessed and authorised by the Haslin Safety Manager.

6.8 Isolation & Lock-out Tag-out Procedure

The following 12 Step Isolation Procedure is to be followed for all types of isolation where exposure to energies creates an unacceptable risk.

1. Identify Energy Sources
2. Advise Relevant Parties
3. Isolate & Secure Energy
4. Test Isolation
5. Issue Permits and Place Locks
6. Commence Work
7. Complete Work
8. Check Work
9. Clear Area
10. Remove Lock and Close Permits
11. Restore Energy
12. Check Operation

The 12 steps are described below:

1. Identify all Plant or equipment and their energy sources that require isolation:

- Identify all primary energy sources and confirm that the isolation point e.g. switches, circuit breakers, valves etc. to be isolated are the correct ones for the Plant or equipment being isolated;
- Determine the type of isolation you will require e.g. individual, group etc. and raise the necessary permits;
- Consider any secondary sources of energy that will require securing or isolation i.e. hydraulic pressure, stored electrical energy, gravitational energy (an excavator bucket in the air) etc. which will need to be considered;
- Plant/equipment manuals are to be referenced for any specific energy and isolation requirements;
- Check schematics, isolation guidelines etc. to ensure that the isolation will ensure complete protection against reenergisation.

2. Advise relevant parties:

- Notify all people who will be affected by the isolation to ensure that no safety hazards or operational issues are created;
- Where applicable, advise operators of Plant that the Plant or equipment is to be isolated to allow for the plant to be left in a safe location.

3. Isolate and secure energy sources (completed by appropriately qualified personnel):

- Isolate the primary isolator in an approved manner;
- Isolate and secure all secondary energy sources. These may include: bleeding off stored hydraulic or pneumatic pressure and shedding electrical loads. Other secondary energy sources include springs, accumulators, elevated equipment, pressure vessels, material hung up in buckets or truck bodies, unplanned movements (chocks) etc;

- Do not use auxiliary devices as isolation, such as: control circuit devices, push buttons, emergency stop buttons etc.

4. Test the effectiveness of the isolation (completed by appropriately qualified personnel):

- All isolations must be verified;
- Ensure test equipment is in good operating condition and within calibration date;
- Check the operation of test equipment before and after isolation;
- Test the isolation has been effective i.e.:
  - Checking the presence of voltage for electrical isolations;
  - Attempting to start the plant or equipment;
  - Ensure all secondary energy sources have been drained or secured i.e. chocking, bleed pressure, lowering implements, emptying truck tub, barricading etc;
  - Any other checks appropriate to the equipment.

5. Apply equipment lock and/or personal locks or tags:

- A personal lock (red) is to be placed on the appropriate isolation point(s) by an Authorised Person appointed for that Plant or equipment;
- If more than one person is involved with the job or the job will extend over the current or subsequent shifts the following is to apply:
  - An equipment lock (black) must be placed on the isolation point by an Authorised Person for that plant before any personal locks (red) are placed;
  - An Out of Service tag must be filled out and attached to the equipment lock;
- The first Authorised Person must also attach an 'Authorised Person's Identification Tag' to their Personal Lock (red);
- In the case of a permit:
  - A permit lock (yellow) is to be placed on the relevant isolation point(s) by an Authorised Person after the Permit Holder has raised the appropriate permit;
  - The permit lock key is returned to the associated lock-out station;
  - The permit holder places the Permit Holders Lock (blue) on the lock-out station;
  - All members of the work party shall attach their personal lock (red) on the outside perimeter of the appropriate lock-out station after the Permit Holders Lock (Blue) has been attached;
  - Visitors or Restricted Persons do not apply locks or tags and are to be under the direct supervision of an Authorised Person.

Note: *under certain circumstances it may be necessary to reverse steps 4 & 5.*

6. Commence Work:

- Carry out the required tasks;
- Monitor the work area for introduced hazards.

7. Complete Work:

- Ensure that all tasks have been completed and that plant/equipment is safe to be re-commissioned.

8. Check Work:

- Review all work has been carried out and ensure the worksite has been left in a safe condition i.e. all machine guards and covers are back in position and secure;
- Where work has not been completed the equipment lock and Out of Service tag must remain on the isolation point.

9. Clear Area:

- Ensure area associated with restoring energy has been cleared i.e. remove work debris from internal spaces, store or remove spare or replaced parts, remove all equipment and tools used for the task etc.

10. Remove Personal Locks and/or Equipment Locks, or Permit Locks and Permit Holder Locks.

- Remove personal locks (red) associated with the work being done. Each person is to only remove their own personal lock;

- Remove equipment locks (black). These locks can only be removed by an Authorised Person for that piece of equipment after all personal locks have been removed and the work has been completed;
- In the case of a permit:
  - The Permit Holder removes the Permit Holders lock (blue);
  - The Permit Holder and Authorised Person removes all permit locks (yellow) and places them back in the lockout station;
  - The Permit Holder cancels the permit;
  - Communicate details of work undertaken to all relevant parties.

11. Restore Energy:

- Advise all relevant or affected parties of your intentions to restore energy;
- Check area and ensure persons are clear of affected plant/equipment;
- Complete de-isolation and restore energy to plant/equipment;
- In the case of a permit, energy can only be restored after the permit holder has cancelled the permit.

12. Check Operation:

- Test-run the plant/equipment to ensure that the work carried out has been successful and that the plant or equipment is operating normally;
- Attach an Out of Service tag to the plant/equipment isolation point if it is not safe or ready for service or is unable to be test run;
- Attach an information tag if required, provided the plant/equipment is safe to use or operate.

6.9 Isolation Types

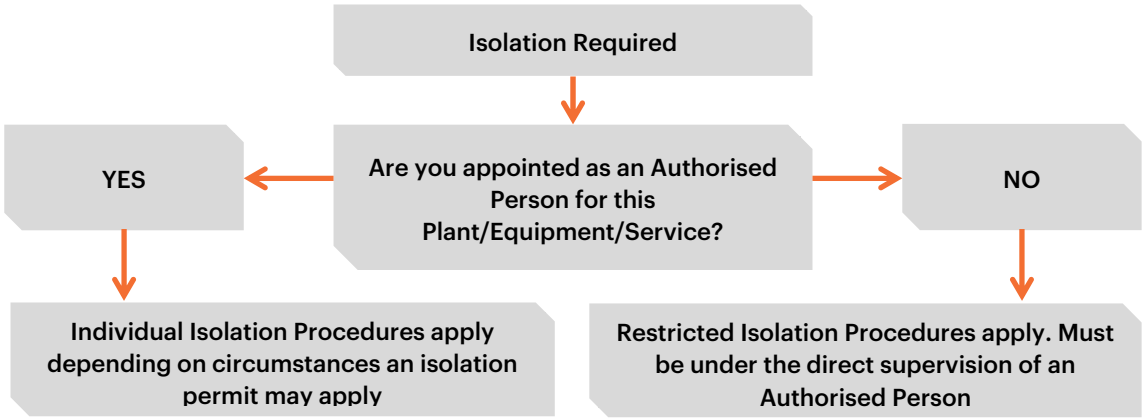
Each type of isolation requires different locks and permits.

The types of isolations are:

- Individual
- Group

Individual isolations use a personal isolation lock to lock out one service, device, or piece of plant as applicable.

Scissor clips shall be used for all types of isolation as a means for attaching multiple personal locks, equipment locks and permit locks. Scissor clips are not required when placing locks directly onto a lock-out station unless there is a need due to a shortage of holes.



6.9.1 Individual Isolations

Refers to a situation requiring isolation of energy where:

- Five or less people are involved in the work being conducted; and
- There are no more than five isolation points; and
- The work does not involve High Voltage work (above 1000VAC or 1500VDC).

Personnel undertaking Individual Isolations must follow this Procedure and will use the following lock-out devices:

- Personal lock (red)
- Equipment locks (black) when necessary
- Scissor clips

The following tags may also be used:

- Authorised Person Identification Tag (red)
- Out of Service Tag (yellow)
- Information Tags (blue)

6.9.2 Group Isolations

Refers to a situation which requires isolation of energy where:

- More than five people are involved in the work; or
- There are more than five isolation points; or
- Where the risk assessment process has identified that the risk and complexity involved in the work make it necessary to undertake a Group Isolation; or
- The job involves working near or on High Voltage services or equipment, where Haslin personnel are attaching personal locks onto the High Voltage authority or asset owners group isolation station or box.

Persons undertaking group isolations must follow the isolation procedure described in Section 6.8 (with the exception of High Voltage service or equipment work – see Section 6.9.3) and will use the following lock-out devices and permits:

- A general isolation permit (blue)
- Lock-out station or box
- Personal locks (red) – attached by the work party to the outside perimeter of the lock-out station or box
- Permit lock (yellow) – attached to the appropriate isolation points by the Authorised Person
- Permit holders lock (blue) – attached to the outside perimeter of the lock out station or box by the permit holder, prior to the attachment of personal locks (red) by the work party.

The following tags may also be used:

- Out of Service tags (yellow) – only for advising that a piece of plant or equipment is not to be operated;
- Information tags (blue) – to advise on the status of a service, or piece of plant or equipment.

6.9.3 High Voltage Isolations

No Haslin person is to undertake High Voltage isolation activities.

Any High Voltage isolation required to allow Haslin personnel to perform necessary work must be undertaken by either the relevant electrical authority or the High Voltage asset owner, as applicable.

Haslin personnel are to work under the electrical authority or asset owner's High Voltage and isolation safety procedures.

6.10 Isolation Devices

Isolation tools include the following types of locks, tags, scissor clips, and permits.

Locks

1. Personal Locks (Red)
2. Authorised Person Locks (Blue)
3. Permit Locks (Yellow)
4. Equipment Locks (Black)

Tags

1. Authorised Person Tag (Red)

2. Out of Service Tag (Yellow)
3. Information Tag (Blue)

Permits:

1. SEQ-FM-045 Isolation and Lockout Permit

6.11 Working Near Energised Plant or Equipment

For project activities that require personnel to perform work near energised electrical plant, equipment, or overhead power lines, refer to the safety control measures detailed in Section 6.8, 6.9 and 6.10 of SEQ-PR-014 Electrical Safety Procedure.

6.11.1 Live Electrical Work

Live electrical work on Haslin sites may only be carried out by appropriately qualified and licenced electrical contractors when low voltage electrical services are required to be energised for testing and commissioning purposes only. No live electrical work on high voltage equipment or services is to be performed.

6.11.2 Commissioning of Restored Energy Plant and Equipment Items

The restoration of energy to repaired or maintained items of plant or equipment is to be completed by appropriately qualified and experienced persons in accordance with the manufacturers operation manual. The re-energisation of electrical services is to be completed in accordance with SEQ-PR-082 Energisation and Commissioning Procedure.

6.11.3 Emergency Rescue Plans

Before working near energised plant or equipment, emergency rescue plans must be developed and approved in accordance with Sections 6.8, 6.9 and 6.10 of SEQ-PR-014 Electrical Safety Procedure.

7 Training

Specific Isolation and Lockout / Tag-out training is completed on the job relevant to the task.

8 Relevant Templates, Forms and Checklists

SEQ-FM-045	Isolation and lockout permit
SEQ-PR-014	Electrical Safety Procedure
SEQ-PR-082	Energisation and Commissioning Procedure

Appendix A: Isolation Device Examples

Scissor Lock

Valve Lock

Personal Isolation Lock

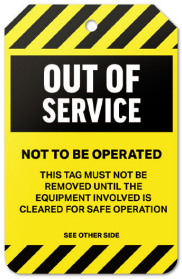
Authorised person Lock

Permit Lock

Equipment Lock

Authorised Person Tag

Out of Service Tag



Information Tag