HASLIN

Energisation and Commissioning Procedure

SEQ-PR-082

Document Approval History

Document History			
Revision	Description of Amendments	Reviewed By	Date
1	New Document	Iain Johnston	06/08/2024
2	Changes to align with SEQ-PR-014 Electrical Safety	Iain Johnston	25/01/2025

Document Approval			
Revision	Approved By	Signature	Date
1	Tim Kelly	Tim Kelly	06/08/2024
2	Tim Kelly	Tim Kelly	

Review Panel	
Name	Position
Tim Kelly	Business Development Manager
Kate Pollock	QLD Safety Manager
Matt Francesconi	General Manager Construction
Jelmer Sanders	Senior Safety Coordinator
Steve Clarke	Operations Manager
Lachlan Holmes	Senior Project Engineer

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1 Purpose

The purpose of this Procedure is to ensure adequate controls are implemented to eliminate risks to persons or equipment during the energisation, testing and commissioning of equipment.

NOTE: This Procedure details the energisation of equipment and services. For isolation of plant and equipment for safety, maintenance, and modification purposes, refer to SEQ-PR-018 Isolation, Lock Out Tag Out Procedure.

For detailed commissioning processes, refer to the relevant project Commissioning Management Plan, or Commissioning Event Plan as applicable.

2 Application

This Procedure applies to all Haslin Construction sites undertaking testing and commissioning activities on plant, equipment, and devices utilising potentially hazardous sources of energy.

3 Definitions

Term	Definition
Authorised Delegate	A person who is sufficiently competent through education, training, and experience, to oversee and direct other persons in the safe undertaking of testing and commissioning activities in place of the Commissioning Manager should they be unavailable
Authorised Person	A person authorised by the Responsible Manager/Supervisor, who is sufficiently competent through education, training, or experience, to issue permits for the purposes of testing, commissioning, or modifying equipment, a service, or machinery
Commissioning Engineer	A person who is sufficiently competent through education, training, and experience, to conduct the safe undertaking of testing and commissioning activities under direction of the Commissioning Manager
Commissioning Manager	A person who is sufficiently competent through education, training, and experience, to oversee and direct other persons in the safe undertaking of testing and commissioning activities
Energy Sources	Any force provided through a service, with the capacity to activate equipment or devices, or enable action from a device, including electricity, water under pressure, hydraulic oil etc
Energisation Procedure	The methodical execution of a defined set of steps to introduce an energy source to equipment, a service, or machinery, to enable it to work as intended
Isolation	A means to prevent an energy source from entering equipment, a service, or machinery in such a way as to prevent the possibility of accidental or unplanned energisation of the whole, or a specific section of the equipment, service or machinery
Isolation Procedure	A set of predetermined steps that must be followed to ensure that equipment, services, machinery, and their related hazards, cannot jeopardise the safety of those working on or near the energy source – see SEQ-PR-018 Lock Out Tag Out Procedure

Lock Out Device	A device, such as a lock, used to hold an isolating switch or valve in the off position to prevent plant/services from becoming energised.
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 or energy may cause injury to a person
Notice of Energisation	A document detailing what equipment or services are going to be energised, on what date, their exact location, by whom and what associated services will be affected. All Notices of Energisation must be accompanied by detailed drawings clearly showing the equipment and associated services being energised.
Restricted Person	A person not involved with, but observing the works
Tag Out	The process of affixing a 'Do Not Operate' tag to an isolated piece of equipment, service, or machinery to alert another person that the equipment, service, or machinery should not be used

*See **Appendix A** for examples of lock out devices and tags.

4 References

- WHS Act 2011
- WHS Regulation 2011 QLD
- WHS Regulation 2025 NSW
- NSW Electricity Safety Act 1945
- NSW Electricity Safety Regulation 1998
- QLD Electrical Safety Act 2002
- QLD Electrical Safety Regulation 2013
- AS/NZS 3000:2018
- AS/NZS3500:2021

5 Legal Requirements

Legislative obligations require all persons to adhere to:

- NSW Work Health and Safety Regulation 2025;
- Queensland Work Health and Safety Regulation 2011;
- Electrical Safety Act 2005 (NSW)
- NSW Electricity Safety Regulation 1998
- Electrical Safety Act 2002 (QLD)
- QLD Electrical Safety Regulation 2013

6 Procedure

6.1 General

Before energising and testing & commissioning equipment of any type following construction activities, all relevant and applicable safety measures must be implemented to prevent injury to persons or damage to equipment, so far as is reasonably practicable. A comprehensive risk assessment and safe work method statement must be developed to identify all hazards, risks and controls specific to the testing, commissioning, and energisation activities.

For commissioning activities, Commissioning Management Plan (CMP) should be developed to detail the specific commissioning activities, to assign roles and responsibilities to nominated persons conducting the activities, and nominate the documentation that will be used to record the activities.

6.2 Pre-energisation of Equipment and Machinery

Before any equipment or machinery is energised or charged with an electrical energy source, the requirements detailed in the following Sections must first be met.

6.2.1 Electrical Safety Controls

The following safety controls must be in place before any electrical pre-commissioning activities take place:

- A documented risk assessment (Safe Work Method Statement) for the works is developed by the work group and approved by the Project Manager;
- A low voltage emergency rescue plan is to be developed and approved by the Project Manager;
- A compliant low voltage rescue kit is easily accessible at the place of the work if required;
- The qualifications of those persons performing the testing and commissioning activities have been verified as appropriate for their role in the work;
- The qualifications of those persons on safety observation, isolation, and LV rescue duties have been verified as appropriate for their role in the work;
- A prestart meeting specific to the works has been conducted;
- Consultation with, and approval from, the low voltage asset owner;
- A work location inspection is completed to confirm:
    - All covers and guards around moving and rotating parts are securely attached
    - All covers, access panels, and doors are securely attached or locked preventing unauthorised access to live electrical parts
    - The area being worked in is clear of obstructions for entry and exit
    - Isolation points for electrical plant and equipment are freely accessible, clearly labelled, and able to be operated quickly
    - Appropriate barricading is in place to prevent access to the commissioning locations by unauthorised personnel.

6.2.2 Pre-commissioning Steps for Electrical Equipment

Before electrical equipment is energised or tested and commissioned, the following steps must be completed, and associated verification documentation collected and validated by the Commissioning Manager:

1. All construction phase Inspection & Test Plans and associated Inspection & Test Checklists are to be reviewed and verified for completeness
2. All equipment and associated fixtures and devices have been inspected for damage or defects and are verified to be fit for commissioning and entry into service
3. All ‘dead testing’, point to point, and other pre-commissioning tests have been completed and documented. Any issues arising from failed tests have been rectified ensuring the equipment is fit for purpose and ready to commission
4. Notices of Energisation (SEQ-FM-109) have been distributed to relevant parties, advising of the intention to energise
5. Prestart meetings advise project personnel of energisation activity details, locations and dates, safety requirements and precautions, exclusion areas etc
6. All switchboards and distribution boards are clearly marked with labelling indicating the equipment will be energised
7. Entry points to rooms or buildings containing electrical equipment being energised are delineated with bollards, blue and white commissioning tape, and warning signage
8. All equipment, circuits, and subcircuits that are to be energised are locked out of service using the appropriate permit/group isolation lock, or equipment isolation lock as applicable (refer to Appendix A for approved locking device types and their application)
9. The Authorised Person (permit issuer) has verified all permit/group locks or equipment locking devices are affixed and all services are isolated, including the primary source of energy for the system
10. The Authorised Person has issued the Energisation Permit (SEQ-FM-111) applicable to the equipment or service being energised

6.2.3 Mechanical Safety Controls

The following safety controls must be in place before any mechanical pre-commissioning activities take place:

- A documented risk assessment (Safe Work Method Statement) for the works is developed by the work group and approved by the Project Manager;
- A rescue plan is to be developed and approved by the Project Manager;
- The qualifications of those persons performing the testing and commissioning activities have been verified as appropriate for their role in the work;
- The qualifications of those persons on safety observation, isolation, and rescue duties have been verified as appropriate for their role in the work;
- A prestart meeting specific to the works has been conducted;
- Consultation with, and approval from, the mechanical asset owner;
- A work location inspection is completed to confirm:
    - All covers and guards around moving and rotating parts are securely attached
    - All covers, access panels, and doors are securely attached or locked preventing unauthorised access to live electrical parts
    - The area being worked in is clear of obstructions for entry and exit
    - Isolation points for mechanical plant and equipment are freely accessible, clearly labelled, and able to be operated quickly
    - Appropriate barricading is in place to prevent access to the commissioning locations by unauthorised personnel.

6.2.4 Pre-commissioning Steps for Mechanical and Hydraulic Equipment

Before mechanical or hydraulic equipment is energised or tested and commissioned, the following steps must be completed, and associated verification documentation collected and validated by the Commissioning Manager:

1. All construction phase Inspection & Test Plans and associated Inspection & Test Checklists are to be reviewed and verified for completeness
2. All equipment and associated fixtures and devices have been inspected for damage or defects and are verified to be fit for commissioning and entry into service
3. All electrical services or circuits providing electricity to mechanical and hydraulic equipment or devices have been tested as fit to do so
4. Pre-commissioning equipment checks and relevant pressure tests on mechanical and hydraulic equipment have been completed and documented. Any issues arising from failed tests have been rectified ensuring the equipment and service is fit for purpose and ready to commission
5. Notices of Energisation (SEQ-FM-109) have been distributed to relevant parties, advising of the intention to energise
6. Prestart meetings advise project personnel of energisation activity details, locations and dates, safety requirements and precautions, exclusion areas etc
7. All mechanical and hydraulic equipment is clearly marked with labelling indicating the equipment will be energised
8. Entry points to rooms or buildings containing mechanical and hydraulic equipment being energised are delineated with bollards, blue and white commissioning tape, and warning signage
9. All mechanical and hydraulic equipment, and related subsystems and services to be energised, are locked out of service using the appropriate permit/group isolation locks or equipment isolation locking devices (refer to Appendix A for approved locking device types and their application)
10. The Authorised Person (permit issuer) has verified all relevant permit/group isolation locks or locking devices are affixed and all services are isolated, including the primary source of energy for the system
11. The Authorised Person has issued the Energisation Permit (SEQ-FM-111) applicable to the equipment or service being energised

NOTE: 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. Isolation of electrical, mechanical, and hydraulic equipment must be completed using an approved locking device.

6.3 Energisation and Commissioning of Equipment and Devices

A prerequisite to the energisation of any equipment is the completion of all steps as listed in Section 6.2.1 and 6.2.2, or 6.2.3 and 6.2.4 as applicable to the service type.

1. The Commissioning Manager and Authorised Person are to verify any person not directly involved with energisation and commissioning activities is outside of exclusion zones or barricading
2. The Commissioning Manager and Authorised Person are to verify all persons involved with commissioning activities have read, understood the conditions of, and have signed onto, the Energisation Permit (SEQ-FM-111) relevant to the service/s being energised
3. The Authorised Person is to remove the Authorised Person lock and permit lock, and verify all personal isolation locks have been removed from the applicable scissor lock or lock box
4. The Authorised Person removes the locking device from the primary energy source supplying downstream equipment and machinery
5. The Commissioning Manager, or authorised delegate, will activate the main isolating switch or valve to the 'on' or 'open' position to energise the primary energy source
6. Inspections are to be conducted on the primary energy source service to ensure there are no faults or service leaks present: if faults or leaks are detected, the primary energy source is to be isolated immediately and faults or leaks repaired and tested before re-energisation
7. The Commissioning Manager, or authorised delegate, will activate secondary isolators, one by one, to energise secondary energy sources and complete applicable inspections to ensure no faults or leaks are detected: if faults or leaks are detected, the applicable secondary energy source is to be isolated immediately and faults or leaks repaired and tested before re-energisation
8. If applicable, the Commissioning Manager, or authorised delegate, will activate tertiary isolators one by one to energise subcircuits and perform applicable inspections to ensure there are no faults or leaks detected: if faults or leaks are detected, the applicable tertiary energy source is to be isolated immediately and faults or leaks repaired and tested before re-energisation
9. The Commissioning Manager, or authorised delegate, shall perform commissioning performance tests on downstream equipment, machinery, or fixtures, in accordance with the relevant manufacturer's manuals, recommendations, and guidelines
10. A nominated commissioning team member shall record pass, fail, or readings, in the applicable commissioning inspection and test checklists or commissioning report and submit to the Client, via Procore, for their review and records

6.4 Responsibilities

6.4.1 Project Manager and Site Manager

- Ensure this energisation procedure, and SEQ-PR-018 Isolation Lock Out Tag Out Procedure as applicable, are followed
- Apply a personal lock to a locking device when observing or witnessing commissioning activities
- Comply with all directions given by the Commissioning Manager and Authorised Person
- Participate in commissioning hazard workshops where required
- Attend commissioning briefings or pre-start meetings where required

6.4.2 Commissioning Manager and Authorised Delegate

The following responsibilities shall apply to Commissioning Managers and their authorised delegates (as applicable):

- Ensure this Procedure, and SEQ-PR-018 Isolation Lock Out Tag Out Procedure as applicable, are followed
- Ensure Safe Work Method Statements applicable to the commissioning activity are approved, read and understood, and signed on to, by all persons involved or witnessing commissioning activities, before any works commence
- Facilitate commissioning hazard workshops
- Authorise Commissioning Management Plans, and Commissioning Event Plans as applicable;
- Deliver commissioning briefings or pre-start meetings
- Direct commissioning activities and manage the commissioning team to achieve desired results as required of Project requirements
- Ensure all commissioning activities are conducted in a manner that does not introduce unmanageable risk to people or property
- Remove personal lock before leaving site

- Authorise commissioning test results and commissioning reports before their distribution to the Client

6.4.3 Authorised Person

- Ensure this Procedure, and SEQ-PR-018 Isolation Lock Out Tag Out Procedure as applicable, are adhered to
- Participate in commissioning hazard workshops
- Participate in commissioning briefings or pre-start meetings
- Authorise and issue isolation and energisation permits
- Revoke energisation permits in instances of non-compliance with this Procedure or unsafe work practices
- Safeguard permit locks ensuring they are not made available to persons not authorised to remove locking devices
- Apply lock out locks or devices for isolation purposes, and remove those same locks or devices for energisation purposes
- Reapply lock out locks or devices where test failures require service or equipment repair
- Ensure an Authorised Person lock is only removed by an Authorised Person
- Ensure no person who has applied a personal lock to a locking device such as a scissor lock or lock box, does not leave site without first removing that lock
- Close out lock out and energisation permits

NOTE: An Authorised Person is the only person authorised to apply and remove permit locks and Authorised Person locks.

6.4.4 Commissioning Engineer

- Ensure this energisation procedure, and SEQ-PR-018 Isolation Lock Out Tag Out Procedure as applicable, is followed
- Apply a personal lock to a locking device when observing or witnessing commissioning activities
- Comply with all directions given by the Commissioning Manager and Authorised Person
- Participate in commissioning hazard workshops where required
- Attend commissioning briefings or pre-start meetings where required
- Conduct commissioning activities under direction of the Commissioning Manager to achieve desired results as required of Project requirements
- Ensure all commissioning activities are conducted in a manner that does not introduce unmanageable risk to people or property
- Remove personal lock before leaving site

6.4.5 All Employees (involved in commissioning activities)

- Ensure this energisation procedure, and SEQ-PR-018 Isolation Lock Out Tag Out Procedure as applicable, is followed
- Apply a personal lock to a locking device when observing or witnessing commissioning activities
- Comply with all directions given by the Commissioning Manager and Authorised Person
- Participate in commissioning hazard workshops where required
- Attend commissioning briefings or pre-start meetings where required
- Direct commissioning activities and manage the commissioning team to achieve desired results as required of Project requirements
- Ensure all commissioning activities are conducted in a manner that does not introduce unmanageable risk to people or property
- Remove personal lock before leaving site

6.4.6 Restricted Persons

Visitors and Restricted Persons are prohibited from being directly involved in any commissioning activities or fault repair work and may observe only. Visitors and Restricted Persons are to be supervised by a commissioning engineer, the Commissioning Manager or Authorised Person at all times.

- Comply with all directions given by the Commissioning Manager and Authorised Person.

6.4.7 All Other Persons

All other persons are to remain outside of exclusion zones and areas where energisation and commissioning is taking place.

6.5 Isolation Tools

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

6.5.1 Locks

1. **Personal Locks (Red)**
   Applied to a device, scissor clip, or lock box to ensure a service cannot be energised whilst the lock is affixed
2. **Permit Locks (Yellow)**
   Applied to a scissor clip, lock box, or valve box by an Authorised Person, after all applicable personal locks have been attached to the scissor clip or lock box, affixing the isolation permit bag to the scissor clip or lock box
3. **Authorised Person Locks (Blue)**
   The final lock to be attached to the scissor clip or lock box, affixing the isolation permit bag to the scissor clip or lock box for an isolation, and the final lock to be removed by an Authorised Person after an isolation permit has been closed, and an energisation permit has been authorised, and all personal locks and the permit lock have been removed by the relevant parties

6.5.2 Locking Devices

Examples of locking devices are shown in Appendix A.

1. **Circuit Breaker isolator**
   Used to isolate an individual circuit within an electrical switchboard or distribution board to enable work to be safely performed on that circuit or a device supplied by that circuit. A personal lock is attached to the circuit breaker lock by the person performing the work
2. **Scissor clip**
   Used for small group isolations of up to 5 persons to isolate equipment where more than one person is required to perform work on a service
3. **Lock box**
   Used for large group isolations of up to 30 persons to isolate equipment where more than 5 persons are required to perform work on a service
4. **Valve box**
   Used to lock out main hydraulic service isolators to isolate a complete system, or individual hydraulic isolator where work is required to be performed on a service
5. **Lockable Permit Bag**
   Used to attach to equipment or service isolator using a permit lock and an Authorised Person's lock to hold the isolation permit applicable to the service r equipment being isolated.

6.5.3 Tags

1. **Do Not Operate tag** – to be attached to a personal lock applied to an individual service isolation to identify the person who applied the lock, the service that is isolated, and the reason for the isolation
2. **Commissioning information tag** – to identify that a piece of equipment has been successfully commissioned - not to be used in place of a locking device

6.5.4 Permits:

1. **General Isolation Permit** – used with individual and group isolations.
2. **Energisation Permit** – authorising a service or service group to be charged with an energy source.

7 Training

Specific isolation, energisation and commissioning training is completed on the job through pre-start and pre-commissioning meetings, relevant to the task.

8 Relevant Templates, Forms and Checklists

SEQ-FM-045	Isolation and Lockout Permit
SEQ-FM-111	Energisation Permit
SEQ-PR-014	Electrical Safety Procedure
SEQ-TP-071	Testing and Commissioning Plan Template

9 Appendix A: Isolation Device Types

Personal Isolation Lock

Permit or Group Isolation Lock

Scissor Lock

Lockable Permit Bag

Authorised person Lock

(for Lock Box Group Isolations)

Do Not Operate Tag

Valve Box

Commissioning Information Tag

Circuit Breaker Lock