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Purpose

To detail the minimum requirements necessary to identify, assess and control risks related to potential sources of energy at a Company workplace.

1 Planning for isolation

Isolation is the physical act of preventing the uncontrolled release of energy, which may cause injury to people or damage to plant and equipment, if that energy is not adequately contained.

This Protocol applies to the isolation of all energy sources (excluding high voltage energy) which may be deemed hazardous to people or equipment.

This Protocol does not apply to minor tool changes, adjustments and servicing activities which meet the following criteria:

- They take place during normal production operations but do not require the removal and/or bypass of a guard or the placement of a body part into an area where danger exists.
- They are routine, repetitive and integral to the use of equipment.
- Work is performed using alternative measures that provide effective protection such as presence-sensing safety systems (e.g. interlocked gates, light curtains, motion detection devices).
- Inspection, cleaning and minor service activities (e.g. greasing nipples) of vehicles and mobile plant

Activities meeting the above criteria should be documented in an approved Standard Operating Procedure (SOP) accompanied by a risk assessment.

1.1 Planning

Isolation planning is undertaken to determine the category of isolation and the lockout method to apply to particular works. The isolation category is determined based on basic and complex isolation criteria.

A Operations and/or Site Manager or delegate may select an isolation category and application which they considered relevant based on specific circumstances of the work on any given day. This may include escalating works previously carried out with a basic isolation to a complex isolation.

The lockout method is determined following identification of the isolation category by having consideration to the following:

- competency of the workers
- size of the work group
- number of isolations required
- distance of isolations from the work front.

1.2 Identifying hazards and assessing the risk

Each site must provide sufficient information to enable relevant people to determine the potential energy sources that are to be de-energised and isolated before work can commence. This information must be comprehensive and should cross reference all other items of energised equipment that must be considered when planning isolations. The information may be in the form of a matrix, SWMS, SOP,

Isolation List (IL) or other format appropriate to the category of isolation, complexity of the equipment and magnitude of the risk.

Forms of energy which may require isolation include:

- electrical (motors/drives, live electrical components)
- hydraulic (fluid pressure)
- pneumatic (compressed air/gas/steam pressure)
- thermal (heat/cold)
- chemical (corrosive, flammable, oxidising, radioactive, harmful or toxic substances etc.)
- stored energy (e.g. springs, gearbox wind up, eccentric shafts, air or hydraulic energy stored within their operating system, electrical capacitance, magnetic etc.)
- gravity (e.g. gravity take up units on conveyors, suspended loads/equipment etc.).

Note: Jammed equipment will often hold stored energy that must be released before removing the material that has created the jam.

1.3 Isolation lists

A written isolation list (IL) using the **Isolation List** template is required for any complex isolations or when a group lock box is used. Isolation Lists document the details of individual isolations required to be implemented. The minimum standard Isolation List should detail the following:

- the scope of isolation
- the Isolation List issue date and document identification (for document controlled Isolation Lists)
- the type of isolation
- the location of each isolation point
- the isolation point unique identifier
- the isolation verification step
- the Isolation Officer's signature against each isolation
- whether a second Isolation Officer is required to check the isolations
- the checking Isolation Officer's signature against each isolation
- the names and signatures of the Isolation Designer, Isolation Coordinator and person authorising the Isolation List.

For Personal or Protected Lockout, the Isolation List, detailing the isolations in place, must remain under the control of the Isolation Officer in control of the isolations or retained by the Authorised Plant Controller (APC) when a suspension of Personal or Protected Lockout has occurred.

When Group Lockout is applied, the completed Isolation List must be secured to the Lock box or Lockout Control Board (LCB) and be visible along with other task related documents (e.g. Authority to Work (ATW), Risk Assessment, Work Order). When group lockout is under suspension, the Isolation List must remain under control of the current on shift Isolation Coordinator. Completed Isolation Lists (all isolations removed and signed off) must be forwarded to the person in control of the work place for archiving.

1.4 Isolation list development

Isolation Lists must be designed and developed by an Isolation Designer and checked by an Isolation Coordinator and authorised for use by the Site Manager or delegate. A minimum of two people must be involved in the development of Isolation Lists with the Isolation Designer and Isolation Coordinator not being the same person. However one of these parties may also be the Site/Operations Manager or their delegate. This enables sites with minimal personnel resources to comply with this requirement.

Key points to consider when designing and developing each Isolation list include:

- field research i.e. a visit to the intended work site and review of energy sources

- reference to Plant and Information Diagrams (P&ID's)
- consultation with other isolation related personnel
- consultation with energy specific or plant experts
- potential for the proposed isolations to impact on other work or production
- whether isolation points are correctly and physically identifiable
- particular hazards associated with performing the isolation
- the scope of work the Isolation List is being developed for
- specialised tools required to perform isolations

Where there is the requirement to perform positive isolations such as spool removal or insertion of spade, an ATW or additional isolations may be required to control this as a separate scope of work. Where a pre-existing approved Isolation List exists, the Isolation Coordinator can approve its use when deemed appropriate for the proposed scope of work(s) .

2 Isolation categories

There are two categories of isolation:

- Basic isolation
- Complex isolation

Over and above the predetermined criteria, an Operations Manager, Site or delegate may select a particular category and isolation application based on the specific circumstances of the work on any given day. This may include escalating any work that may have previously been determined as basic to complex.

2.1 Basic isolation

Basic isolation is determined as:

- isolation involving a maximum of three points, and/or
- a maximum of two energy types
- requiring a SOP or SWMS

Note: Where a SOP or SWMS does not exist for infrequent or newly identified tasks, basic isolations may proceed provided the energy types and isolations are detailed on the Take 5 as long as the task is risk assessed as low. All frequently conducted tasks (e.g. once a month or more) should be documented on a SOP/SWMS.

2.2 Complex isolation

Complex isolation is determined as:

- isolation involving four or more isolation points, and/or
- three or more energy types
- requiring an Isolation List detailing specific isolation requirements

3 Lockout methods

There are three methods of lockout which may be applied to isolations:

1. Personal lockout
2. Protected lockout
3. Group lockout

Before commencing work, the appropriate lockout method must be determined.

3.1 Personal lockout

Personal lockout involves the application of an Isolation Officer's red personal lock directly to the equipment's isolation point/s. Note that Workers / Work Group Members can only place their red

personal lock(s) onto a hasp that has been set up as part of a Protected Isolation - see section 3.2 or to a Lock Box or Isolation Control Board as part of a Group Isolation – see section 3.3.

Personal lockout may be applied to both basic and complex isolations where:

- an approved SOP/SWMS/Isolation List detailing isolation requirements is in place
- one person is performing the isolation and work
- the person performing the work is an Isolation Officer and has been assessed as competent against the SOP/SWMS to isolate for the particular task.

Note: Where a SOP/SWMS does not exist for infrequent or newly identified tasks requiring basic isolation, the personal lockout can be applied provided the isolations and energy types are detailed on a Take 5 as long as the task is risk assessed as low. All frequently conducted tasks (e.g. once a month or more) should be documented on a SOP/SWMS.

3.2 Protected lockout

Protected lockout involves the application of a multi-lock hasp directly to a verified equipment isolation point by an Isolation Officer. The multi-lock hasp is secured by the Isolation Officer with a yellow equipment lock and appropriately identified – eg: with an out of service tag. Once secured, work group members may apply their red personal lock/s directly to the multi-lock hasp/s.

The key/s to yellow equipment lock/s are retained by the Isolation Officer.

Protected lockout may be applied where:

- an approved SOP/SWMS detailing isolations requirements is in place
- more than one person is performing the work
- work group members have not been deemed competent to undertake personal lockout
- deemed necessary by an Authority To Work (ATW) or by a Site/Operations Manager.

Protected lockout securing basic isolations may be performed and verified by one Isolation Officer.

Protected lockout securing complex isolations must be performed by one Isolation Officer and may require verification by a second Isolation Officer (as defined on the Isolation List or SWMS).

Note: Where a SOP/SWMS does not exist for infrequent or newly identified tasks requiring basic isolation, the protected lockout can be applied provided the isolations and energy types are detailed on a Take 5 as long as the task is risk assessed as low. All frequently conducted tasks (e.g. once a month or more) should be documented on a SOP/SWMS.

3.3 Group lockout

Group lockout involves the application of yellow equipment lock/s to verified equipment isolation points via a multi-lock hasp by an Isolation Officer with a completed out of service tag.

Yellow equipment lock keys and any spare locks (left over from a lockset) are placed into a lock box or Lockout Control Board (LCB) and secured by an Isolation Coordinator with a green lock box lock. Work group members attach their red personal lock directly to the lock box or LCB.

Group lockout is managed and controlled by Isolation Coordinators and must only be authorised or closed by Isolation Coordinators applying or removing a green lock box lock.

Group lockout may be applied where:

- work group members have not been deemed competent to undertake personal lockout
- the distance of isolation points from the workplace is impractical for protected lockout
- the number of work group members makes it impractical to safely to apply protected lockout
- complex isolation is required
- works are deemed to be high risk
- deemed necessary by an ATW or by a Site/Operations Manager.

Group lockout must be performed by one Isolation Officer and, as required, checked by a second Isolation Officer.

An approved IL should be used when applying the group lockout. Where an approved IL is not available, an IL should be developed by an Isolation Designer using the site approved isolation list template. This must be checked by an Isolation Coordinator and approved by a Site/Operations Manager or delegate prior to commencing work.

4 Lockout equipment

4.1 Locks

Three locks are used in the Company isolation system:

1. Red personal locks
2. Yellow equipment locks
3. Green lock box locks

There must be no duplicate keys for any locks or lock sets.

Abandoned locks may only be forcibly removed once all efforts to locate the person who applied the lock have failed. Forcible lock removal must be authorised by a Site/Operations Manager (or their delegate) using the **Removal of Abandoned Lock/Tag Checklist**.

4.1.1 Personal locks (red)

Red personal locks are applied by Isolation Officers to secure isolation points under personal lockout and by work group members to secure isolation points under protected or group lockout. Attaching red personal locks gives a worker direct control over the isolated energy sources of equipment being worked on.



Red personal locks are:

- red in colour
- uniquely keyed individual locks or keyed alike sets of three locks
- marked, engraved or tagged with the lock owner name, contact number and company so as to identify the owner of the lock.

Red personal locks are applied to:

- an isolation point for personal lockout
- a multi-lock hasp for protected lockout
- a lock box or lockout control board (LCB) for group lockout

Red personal locks must only be placed and removed by the lock owner. Locks should only be removed once the work is complete and workplace is deemed safe to return to service or when leaving the work site (e.g. end of shift or change in work priority).

Red personal locks not marked or engraved with the lock owner details must be used in conjunction with personal danger tags. The lock owner is responsible for ensuring the key is secured and under their control at all times while in use.

Each site must ensure sufficient quantities of red personal locks are available for all workers. Red personal locks should be made available to work group members through site isolation lockout/tagout equipment stations or issued to workers who perform isolations frequently.

4.1.2 Equipment locks (yellow)

Yellow equipment locks are applied by Isolation Officers to secure verified isolation points via a multi-lock hasp under the protected or group lockout process. This process supports the attachment of multiple locks (e.g. red personal locks for protected lockout or yellow equipment locks for group lockout activities requiring the same isolation point).



The presence of a yellow equipment lock attached via a multi-lock hasp and out of service tag indicates that a verification of effective isolation has taken place.

Yellow equipment locks are:

- yellow in colour
- uniquely keyed individual yellow locks or keyed alike sets
- marked, engraved or tagged with a unique identifier such as the workers name, date, isolation point ID, the purpose of the isolation and Group Isolation list ref (where required)

Yellow equipment locks must be applied in conjunction with an out of service tag to:

- secure verified isolation points via a multi-lock hasp when applying protected or group lockout
- suspend a personal lockout
- identify faulty or inoperable equipment.

Keys to yellow equipment locks should be:

- secured by the Isolation Officer for the duration of the task under the protected lockout.
- secured in a lock box or Lockout Control Board (along with any spare locks left over from a lockset) by the Isolation Coordinator attaching a green lock box lock under group lockout.

4.1.3 Lock box locks (green)



Green lock box locks are applied by Isolation Coordinators to secure the keys to yellow equipment locks (along with any spare locks left over from a lockset) inside a lock box or LCB under group lockout.

Green lock box locks are:

- green in colour
- uniquely keyed individual locks
- marked, engraved or tagged with a unique identifier including the workers name, date, isolation point ID, the purpose of the isolation and Group Isolation list ref (where required). Lock keys may also be marked or engraved.

Green lock box locks are used in conjunction with out of service tags and must only be placed and removed by Isolation Coordinators. Green lock box locks should be the first lock applied to a lock box or LCB and the last removed for each job when using the group lockout.

Keys to green lock box locks should be secured by the Isolation Coordinator for the duration of the task.

4.2 Tags

4.2.1 Personal danger tags



Where Personal Danger Tags are used to identify the owner of a red personal lock that is secured to an isolation point, multi-lock hasp, lock box or lockout control board. A Personal Danger Tag is not required where the red lock has alternate identification including the owners name, company and phone number.

Personal danger tags are attached to red personal locks and should be completed with following minimum information:

- the name of the person who placed the red personal lock
- the reason the lock was placed
- the date the lock was placed.

Only the owner of the red personal lock to which the tag is attached can apply or remove it.

Personal danger tags are not required where red personal locks are marked or engraved with the lock owner's details – ie: owners name, company and phone number.

4.2.2 Out of service tags

Out of service tags are used to identify:

- secured, verified isolation points when attached via a multi-lock hasp and yellow equipment lock for protected or group lockout
- that a lock box or lockout control board has been secured when attached to green lock box lock for group lockout
- that works covered by personal lockout have been suspended when attached to a yellow isolation lock to the isolation point/s
- faulty or inoperable equipment.



Out of service tags when attached using yellow equipment locks must only be placed by an Isolation Officer and must be completed with a minimum of:

- the name of the person who placed the lock
- the reason the lock was placed
- the date the lock was placed
- the isolation point identification details for protected lockout
- the isolation point identification details and IL reference for group lockout

Out of service tags can be applied by anyone to indicate faulty or inoperable equipment. When applied with yellow equipment locks out of service tags should only be applied by Isolation Officers.

Out of service tags must only ever be removed by authorised, competent personnel.

4.3 Multi-lock hasps



Multi-lock hasps are devices used to allow the attachment of multiple locks to an isolation point, lock box or lockout control board.

A multi-lock hasp must always be used to secure verified isolation points for protected or group lockout (to allow for additional locks to be applied later if required).

Multi-lock hasps come in different forms and should only be placed and removed by Isolation Officers when applying protected or group lockout. All multi-lock hasps should only ever be applied with a yellow equipment lock



Scissor type multi-lock hasps can become loose or flexible with excessive use and, in that state, can sometimes be removed from an isolator without removing the lock. The integrity of the multi-lock hasps should therefore be checked before, during and after use.

4.4 Lock box

Lock boxes and lockout control boards are used to secure the keys to yellow equipment locks used in group lockout.

Lock boxes must be:

- sufficiently robust so as to ensure total security of the yellow equipment lock keys (along with any spare locks left over from a lockset) inside
- impossible to access when any one lock is applied in the nominated locations.



Lock boxes must be secured by an Isolation Coordinator with a green lock box lock prior to work party members placing their red personal lock.

Approved and completed isolation lists and applicable ATWs/permits must be attached to the lock box until the isolations are removed.

4.5 Lockout control board (LCB)

Lockout Control Boards function in the same way as lock boxes but allow the clear display of isolation information and materials.

Lockout Control Boards must:

- have the Isolation List attached to the lock box or next to the lock box on the same lockout control board
- enable the Isolation List to be clearly visible when attached.

Lockout Control Boards should be clear fronted so the key/s to the yellow equipment locks along with any spare locks left over from a lockset are clearly visible.



5 Isolation points

Isolation points are locations which enable an energy source to be isolated. All isolation points must be:

- lockable, as per section 5.3, in one safe 'off' position.
- clearly, permanently and uniquely labelled in accordance with the local plant identification system and drawings, to identify the circuit or system over which they have direct control.

5.1 Electrical isolators

Compliant electrical isolation points must:

- provide a total and positive de-energisation of energy source
- be a full current isolator.

When performing electrical isolations or de-isolations arc flash management practices must be followed in accordance with Electrical Safety standards.

5.2 Non-electrical isolators

Non-electrical isolation points should physically block the flow of energy by:

Positive isolation – an absolute separation is provided between the energy source and people, regardless of plant conditions. Positive isolation is the highest level of isolation. Examples of positive isolation include:

- spools removed
- blanks inserted
- blinds attached.

Proven isolations – all energy, through observation and/or testing, have been demonstrated to have been removed. Examples of proven isolation include:

- closed valves
- depressurised systems; or
- drains bled until dry.

5.3 Isolator locking

New or replacement isolators installed should be directly lockable where possible. Isolation points which are not directly lockable will require provision of an attachment or device so that they can be locked.

Valves used to isolate equipment must be lockable in the relevant position (e.g. vent lines or bleed valves may need to be locked open). Valve isolator locking may be achieved through:

- direct locking handles
- lockable chains, tabs or brackets.

5.4 Non-compliant isolators

Where an isolation point has been determined as non-compliant, the isolation point must be labelled/tagged "Not for Isolation Purposes".

Where non-compliant isolation points are identified, the site must determine an alternative and safe means of isolation, typically an upstream, higher level compliant isolation point. Arrangements will then be made to replace the non-compliant isolation point/s with compliant ones.

6 Isolation process

Any person requesting work that requires the application of isolations is to ensure that the SOP, SWMS or Isolation List detailing the required isolations is authorised by an Isolation Coordinator before the work begins to ensure appropriate isolation category and lockout method are established.

Isolation, irrespective of the energy type, involves the following common steps, although the means of achieving each step may vary according to the equipment and energy source involved.

The common steps in the isolation process are:

1. Shut down plant
2. Isolate energy sources
3. De-energise stored energy sources
4. Verify isolations
5. Lock and tag

6.1 Shut down plant

All energy sources to or from an isolation point should be stopped using the normal plant operation controls for shutting down that item of plant.

6.2 Isolate energy sources

All energy source isolations must be proven or positively isolated typically by a physical act of operating a switch or circuit-breaker, closing a valve and opening a drain, inserting a spade or blank, etc.

Equipment with mechanical potential energy (i.e. gravity) may be lowered to a resting position or a mechanical restraint device may be used to introduce a mechanical obstacle (e.g. wedge, spindle, strut, chain, locking pin, chock etc.) which, by virtue of its own strength, can prevent any hazardous movement (e.g. the fall of a ram due to the failure of the normal retaining system).

When performing electrical isolations or de-isolations arc flash management practices must be followed in accordance with the **Electrical Safety** Standard.

6.3 De-energise stored energy sources

Residual or stored energy may be removed by a number of means including:

- air lines and receivers bled
- hydraulic accumulators drained
- process pipe purged, flushed and drained
- electrical discharging by means of earthing
- negative pressure equalised to avoid hazardous fluids being released into a work area should the vacuum break while work is being undertaken
- batteries terminals disconnected
- weight suspended by gravity secured (e.g. remove material on a belt, gravity take up securing devices etc.)
- stored energy released (e.g. pressurised equipment, spring tension, equipment that has been jammed etc.).

6.4 Verify isolations

Isolated energy sources should be tested (as defined in the SOP/SWMS) and the plant attempted to be activated, where possible, before works commence. Examples of test methods include:

- use of approved test equipment to prove zero electrical energy
- opening a drain valve in the lowest part of a pipeline to prove zero flow, residual pressure or head pressure.
- Attempting to start the equipment

If an isolation cannot be achieved or drainage, flushing or isolation cannot be proven, the isolation process must be stopped and referred back to the Isolation Coordinator for further action.

Complex isolation may be required to be cross-checked by a second Isolation Officer, who signs the Isolation List to indicate this has occurred. The requirement of a second Isolation Officer will be determined by the Isolation Designer and Isolation Coordinator during the Isolation List design or selection phase and approved by the Site/Operations Manager.

6.5 Lock and tag

All verified isolation points should be directly secured by:

- applying red personal lock/s when personal lockout is required
- applying a yellow equipment lock/s, out of service tag/s and multi-lock hasp when protected or group lockout is required .

If the integrity of the isolation changes, work should cease and be referred to the Isolation Coordinator for further action.

7 Isolation of safety critical equipment

Safety critical equipment is equipment which is critical to safety or site operations. Examples of safety critical equipment include:

- fire detection, warning and fighting services
- pressure relief valves
- high or low level alarms
- environmental protection devices
- amenity impacting services such as water, sewerage, electricity, ventilation
- telephone and information technology services.

The isolation and/or removal of safety critical equipment from service requires increased levels of control and authorisation from the Site/Operations Manager or their delegate prior to the isolation occurring.

8 Inching, barring, testing (IBT) and partial re-energising

Temporary removal and reinstatement of isolations may be undertaken for activities involving inching, barring and testing.

Prior to commencing these activities, the following requirements must be met:

- An approved SOP/SWMS covering the activity should be in place and hazard control measures implemented.
- Confined spaces affected should be vacated and controlled during the Inching, Barring, Testing (IBT) activities.
- Work group members should remove their red personal lock/s from the isolation point, lock box or Lockout Control Board.
- Yellow equipment locks should only be removed by an Isolation Officer when required to re-energise the nominated equipment.
- Inching, Barring, Testing should only be undertaken by trained and competent personnel in accordance with the approved SOP/SWMS.

Upon completion of Inching, Barring, Testing the following must occur:

- Isolation points should be re-isolated and verified by an Isolation Officer. Complex isolations as defined on the Isolation List may be required to be cross-checked by a second Isolation Officer.
- Yellow equipment lock key/s that were removed should be returned to the lock box or Lockout Control Board (along with any spare locks from the lockset) and secured by the Isolation Coordinator with a green lock box key for Group Isolation or secured by the Isolation Officer for protected lockout.
- Work group members should reapply their red personal lock/s to the isolation point, lock box or Lockout Control Board.

Note: When conducting activities under Inching Barring, Testing (IBT), the use of an ATW may be required. This will be determined by the Operations and/or Site Manager or their delegate.

Where Inching Barring, Testing (IBT) activities are to be undertaken by another work group (e.g. due to shift change), a face to face handover must be undertaken covering:

- a site inspection and identification of the affected equipment isolations points
- details of equipment undergoing Inching Barring, Testing (IBT)
- details of work groups members involved in the work
- any other information deemed required by the Site/Operations Manager or their delegate.

9 Suspension or transfer of isolations

A formal handover of responsibilities should occur during change of shifts or when the Isolation Officer changes within shifts and should cover the status of the work and any safety issues.

Where a work activity involving lockout cannot be completed during a single shift or directly handed over (face to face interaction) to another work group, the lockout should be suspended.

9.1 Suspension/transfer of personal lockout

Where a personal lockout is to be suspended or transferred without a face to face handover, the worker should undertake the following:

- Remove their red personal lock/s.
- Attach yellow equipment lock/s and out of service tag/s to each isolation point detailing their name, the date and the reason for the suspension/transfer (e.g. end of shift, awaiting parts, work priorities changing).
- Ensure key/s to the yellow equipment lock/s are secured and details of the job status and key location provided to the duty Authorised Plant Controller until the job can re-commence or the lockout is escalated to a protected or group lockout.

9.2 Suspension/transfer of protected lockout

Where protected lockout is to be suspended or transferred without a face to face handover, the following should occur:

- Work group members should remove their red personal lock/s from the multi-lock hasp/s.
- The Isolation Officer should ensure the key/s to the yellow equipment lock/s are secured and details of the job status and key location is provided to the duty Authorised Plant Controller (APC) until the job can re-commence or the lockout is escalated to a group lockout.
- The Authorised Plant Controller (APC) should provide details of the suspended isolations and location of the key/s to the oncoming Isolation Officer.
- The oncoming Isolation Officer must exchange each of the current out of service tag/s from each isolation point with new ones detailing their name, the reason for the isolation, the date and isolation point identification.

- The oncoming work group members must apply their red personal lock/s to the multi-lock hasp/s only after discussing the task with the Isolation Officer and/or the Authorised Work Controller (AWC).

9.3 Suspension/transfer of group lockout

Where group lockout is to be suspended or transferred without a face to face handover between Isolation Coordinators, the following must occur:

- Work group members should remove their red personal locks from the lock box or Lockout Control Board.
- A formal documented process will be in place to transfer ownership and document the details of the transfer between Isolation Coordinators

Where group lockout is to be transferred with a face to face handover between Isolation Coordinators, the out-going Isolation Coordinator must ensure the on-coming Isolation Coordinator is provided with a thorough update of the status of the isolations. The task is then signed over using an Isolation Handover Sheet and hand over the green lock box key.

Work group members can continue to work during this handover process as long as there is an Authorised Work Controller (AWC) in control of the work while the out of service tag attached to the green lock box lock is exchanged.

The transfer of jobs under the group lockout is managed by Authorised Work Controller (AWC's) under the supervision of the Authorised Plant Controller (APC).

10 Completion of works

At completion of works, equipment and processes must be returned to service in a safe and correctly functioning state.

Before de-isolation of work covered by Personal or Protected Lockout the Isolation Officer in control of the isolations must ensure that:

- All scopes of work covered by the isolations in place been satisfactorily completed.
- Implications on adjacent work and operations if de-isolation is to occur.
- All equipment guarding, interlocking devices and any OHS related equipment/ requirements been correctly reinstated to the normal operating position.
- Specific personnel, tools or procedures required for de-isolation, re-commissioning and return to service steps been accounted for.
- All IBT steps required to be performed prior to returning the equipment to service have been completed.
- All personnel working under the isolations have removed their red personal lock.

Where de-isolation is required for work covered by Group Lockout, the actions detailed above must be performed by the Isolation Coordinator.

Prior to de-isolation and return to service, consultation should be undertaken with the APC and any other relevant personnel regarding the implications of the return to service of equipment.

10.1 Completion of personal lockout works

At the completion of works under a personal lockout, the worker must:

- Ensure the equipment and work area is in a safe state prior to removing their red personal lock/s.
- Notify the Authorised Plant Controller (APC) that the equipment is ready to de-isolate and return to service.
- De-isolate and return the equipment to service as required.

10.2 Completion of protected lockout works

At the completion of works under protected lockout, the following must occur:

- Work group members should ensure the equipment and work area is in a safe state prior to removing their red personal lock/s.
- Work party members should notify the Isolation Officer that works are complete.
- Isolation Officer should notify the Authorised Plant Controller (APC) that the equipment is ready to de-isolate and return to service.
- Isolation Officer should remove the yellow equipment lock/s and out of service tag/s, de-isolate and return the equipment to service.

10.3 Completing of group lockout works

At the completion of works under group lockout, the following must occur:

- Work group members should remove their red personal lock/s from the lock box or Lockout Control Board.
- Isolation Coordinator should sign off the isolations as closed along with the duty Authorised Plant Controller (APC) using the designated section on the ATW form.
- Isolation Coordinator should, after ensuring that the equipment and area is in a safe state, remove the green lock box lock.
- Isolation Officer should retrieve the yellow equipment lock key/s, remove the yellow equipment locks and, in conjunction with the Authorised Plant Controller (APC), prepare the equipment for de-isolation and subsequent return to service.

Note: Active group lockout is identified by a lock box or lockout control board secured by a green lock box lock. An Isolation List showing completed and verified isolations will also be present. Inactive group lockouts are identified by an unlocked lock box or lockout control board.

11 Out of service equipment

Equipment identified as unsafe should be removed from service and an out of service tag attached to it until repairs or alterations are made or the equipment is deemed safe for use.

- Out of service tags can be applied by anyone to indicate faulty or inoperable equipment, but when applied with yellow equipment locks should only be applied by Isolation Officers.
- Out of service tags should be placed in obvious locations such as start-up controls and energy sources.

Where the state of the equipment poses a high risk, an Isolation Officer must isolate the equipment in accordance with the group lockout requirements. Yellow equipment lock/s and out of service tag/s should be applied and the key/s (along with any spare locks from a lockset) secured by an Isolation Coordinator in a lock box or lockout control board with a green lock box lock. In these circumstances, an Isolation Officer becomes the owner and controller of the equipment. Before repairs or alterations are made, the Isolation Officer must ensure that the repairer applies a red personal lock to the lock box or lockout control board to secure the isolation of the equipment. Out of service equipment should be verified by a competent person as safe to return to service after repair or alteration.

12 Managing non-conformances

Non-conformances to the isolation process must be reported immediately to the Site/Operations Manager or their delegate. Where the isolation system is breached, all tasks under the isolation should be stopped immediately until the matter can be resolved by the Site/Operations Manager.

All breaches of the isolation system requirements and rules must be recorded as a near miss incident in SEQUENCE. The Supervisor or Site Manager should investigate the breach and should preserve the scene of the incident (e.g. barricade the area and take photographs).

Note: Breaches of the isolation system may result in disciplinary action.

12.1 Failure to remove a red personal lock

Workers who have left the work area or site and failed to remove their red personal lock/s should be contacted and requested to return and remove their lock. Where the person cannot be contacted or is unable to return to site, a Site/Operations Manager from the area must:

- Establish beyond all reasonable doubt that the person is no longer on site and is unable to return to site.
- Complete the **Removal of Abandoned Lock/Tag Checklist**.
- Oversee the removal of the red personal lock/s or delegate the task to their appointed nominee.
- Remove the red personal lock/s with bolt cutters only (no spare keys are permitted under any circumstances).
- Report and investigate the incident using the incident reporting system and contact the absent person before they begin work on their next rostered shift.

13 Training requirements

Isolation training and competency must meet the following requirements:

- All employees performing isolations should be trained in the Company isolation procedure and authorised to conduct personal, protected or group lockouts as appropriate.
- Competency should be reassessed at least once every two years.
- Contractors should be made aware of this procedure during the contractor induction process and must be able to demonstrate compliance with this procedure.

Isolation training and competency needs are identified as part of the site training needs analysis.

Any person required to conduct electrical work or work associated with radiation must be competent and licensed according to legislative requirements.

Employees or contractors that are required to isolate the battery isolator on vehicles and mobile plant are not required to complete Isolations training provided they are performing their activities under an approved method (e.g. SWMS, SOP, One Point Lesson etc).

13.1 Isolation training path

Role	Training Requirement
Work Group Member (WGM)	Site Induction Red Personal Lock Use
Isolation Officer (IO)	Site Induction Red Personal Lock Use – Theory Personal, Protected and Group Lockout – Theory Assessment Personal, Protected and Group Lockout – Practical Assessment Isolation Application – Practical Assessment

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Isolation Coordinator (IC)	Site Induction Red Personal Lock Use – Theory Personal, Protected and Group Lockout – Theory Assessment Personal, Protected and Group Lockout – Practical Assessment Isolation Application – Practical Assessment Isolation Designer/ Isolation Coordinator – Theory Assessment Isolation Coordinator – Practical Assessment
Isolation Designer (ID)	Site Induction Red Personal Lock use– Theory Personal, Protected and Group Lockout – Theory Assessment Personal, Protected and Group Lockout – Practical Assessment Isolation Application – Practical Assessment Isolation Designer/Isolation Coordinator – Theory Assessment Isolation Designer – Practical Assessment

Roles and responsibilities

Role	Responsibility
Site/Operations Manager	Approving the isolation of safety critical equipment Ensuring appropriate training is conducted in the application of isolation practices Ensuring comprehensive records of training are appropriately maintained Approving isolation lists for use Authorising forced lock removal as required Ensuring all non-conformances are investigated
Supervisor	Investigating non-conformances Ensuring only authorised personnel perform the specific roles within the isolation process Ensuring that adequate time is provided for the training of individuals within the isolation system Reviewing in advance scopes of work that require isolation Providing adequate time and resources for the purpose of performing isolations
Authorised Plant Controller (APC)	Reviewing and approving scopes of work with the Isolation Coordinator Documenting the details on the status of a task when work covered by personal or protected lockout is suspended
Isolation Coordinator (IC)	Reviewing and approving scopes of work with the Authorised Plant Controller Checking new isolation lists after they have been designed Selecting isolation lists appropriate for the scope of work Applies the green lock box lock to the lock box/LCB after ensuring all keys associated to the isolation are in the lock box/LCB Removes the green lock box lock from the lock box only after all red personal locks have been removed Managing group lockout when transferring across shifts or between workgroups
Isolation Designer (ID)	Developing isolation lists (for all equipment on site that requires isolation) appropriate for the scope of work and ensuring that the integrity of the isolation systems are maintained.
Isolation Officer (IO)	Conducting and verifying isolations Cross-checking isolations as required after they have been applied by a previous Isolation Officer De-isolating equipment as required

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Work Group Member	Applying and removing their own red personal lock/s as directed Performing work as required conforming to all requirements of an ATW or SWMS
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HSEQ document definitions

Refer to HSEQ terms and definitions library on the HSE intranet site.

HSEQ Document Version History

This table documents the five most recent key HSEQ Document updates.

No.	Date of issue	Comments / Key changes	Next review
3.0	July 2015	Replaces GRP-OHS-026 Isolation	
4.0	July 2019	Reformatting in conjunction with Global harmonisation of minimum standards	
4.1	March 2022	Rebrand and update document numbers to align with new HSEQ MS	
5.0	June 2024	Rebrand to align with Policy and Procedure Hub and update to Section 1 and 13	June 2026