Fatal Risk Procedure

Energy Isolation Procedure

(HSE)

Document Number: A4065912

Excellence Honesty Accountability Courage Caring

Approved: 9 July 2021 Review due: July 2024

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1 Objective

This Procedure gives effect to Safety and Wellbeing Policy.

The purpose of this document is to describe how plant and equipment must be isolated within Goulburn-Murray Water (GMW) to reduce the risk of hazardous energy being released.

2. Scope

This procedure applies to all GMW employees and contractors on and around GMW controlled workplaces and assets. Contractors are to adhere to the requirements of this procedure whilst working on or around GMW owned, controlled or operated assets.

All Principal Contractors must have and adhere to the requirements of their (Contractors) Safety Management System concerning energy isolation.

3. Procedure

Workers can suffer serious injuries or die when stored energy such as water, electricity, gas (pressure) plant, hydraulic and pneumatic energy sources are or released.

To help keep workers safe, employers must isolate, de-energise, lockout and tagout plant before work, maintenance or repairs.

GMW's Energy Isolation also known as LOTO (lockout tagout) procedure is a set of steps that must be followed to ensure assets, equipment, plant and its components are de energized and all residual or stored energy is released to prevent any uncontrolled release of energy which may harm or cause injury to a person.

The effectiveness of this energy isolation procedure relies on the following:

- Having the isolation procedure documented and accessible to the relevant people in the workplace
- Providing information, instruction and training to workers involved with the assets, equipment, plant and its components
- Ensuring a Permit Authoriser & Permit Holder are aware of their roles and responsibilities so that the working group follows and implements the isolation procedures and process

3.1 Hierarchy of Controls and Compliance

The following completed documents must be submitted to the Asset Owner for approval prior to working on any live asset (when in the line of fire):

- Risk Assessment
- Isolation Plan
- Permit

3.1.1 Risk Assessment

Lockout and/or tagout of assets, equipment, plant and its components for routine inspections, repairs, maintenance, assessments, adjustments or cleaning should not be undertaken until a risk assessment is completed by the team.

A documented risk assessment must be completed to determine:

- What energy sources are present (gas, electricity, hydraulics etc.)
- What risks are associated with known hazards or energy sources
- What controls are implemented to remove all harmful sources of energy to make it safe
- Identify the isolation points required for the task/job to be undertaken safety

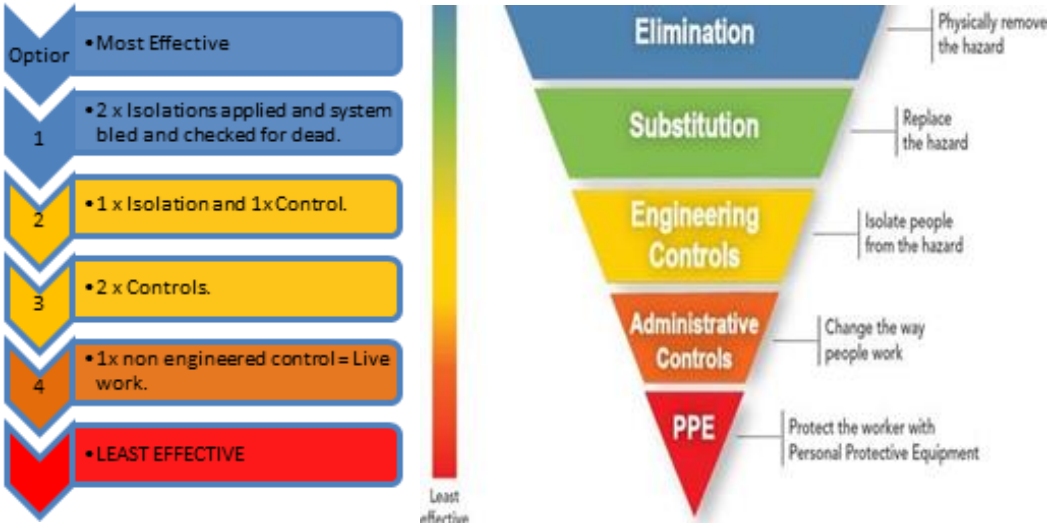
When the risk assessment identifies energy sources, the Hierarchy of Control must be used in conjunction with GMW Hierarchy of Isolation to ensure the task/job can be undertaken safely:

3.1.1.1 Hierarchy of Control

The hierarchy of control is a system for controlling risks in the workplace:

- Elimination – Highest level of protection and most effective control
  - Eliminating the hazard and the risk it creates is the most effective control measure
- Substitution
  - Substitute the risks with lesser risks
- Isolation
  - Isolate people from the risks
- Engineering
  - Reduce the risks through engineering changes or changes to systems of work
- Administration
  - Administrative controls / actions to minimise exposure to hazards and to reduce the level of harm
- Personal Protective equipment (PPE)
  - Personal protective equipment (PPE) to protect people from harm

GMW Hierarchy of Isolation **Hierarchy of Control**



3.1.1.2 GMW Hierarchy of Isolation

GMW's preferred isolation method is Double Isolation and test for dead. Where this cannot be achieved, the below GMW Hierarchy of Isolation must be adopted.

All isolation and controls must be deemed appropriate and effective and tested for dead prior to work commencing

- Double Isolation
  - 2 x Isolations applied and system tested for dead
  - Permit application will include an Isolation Plan
- 1 x Isolation and 1x Control
  - 1 x Isolation applied and system tested for dead
  - Permit application will include an Isolation Plan
- 2 x Controls
  - Permit application will include an Isolation Plan
- 1 x Control = Live work
  - Permit application will include an Isolation plan, risk assessment, emergency rescue plan and requires sign off by the Executive Leader (EL)

Where only one control can be achieved, the work is to be considered "**Live work**".

Note: No ***live work*** *will be conducted without the written permission of the General Manager of the work division conducting the works*

3.1.1.2.1 Live Work

Prior to any live work being conducted the permits should be accompanied by:

- A risk assessment of the live work activity in consultation with any HSRs or contractors who will be undertaking the “Live Work”
- A copy of any emergency or rescue plans
- Confirmation that training, information and supervision has / will be provided to all workers either conducting or are exposed to the live work prior to the live works being conducted
- Safe work instructions relevant to the activities relating to live work have been reviewed
- Documented signature from the General Manager or Principle Risk Owner responsible for those doing the live work recommending the activitiy proceed

Any live work required for maintainance purposes such as for testing or commissioning must only be conducted by a suitably qualified person and have as a minmimum a safe work instruction and risk assessment for the activitiy

3.1.2 Isolation Plan

An isolation plan is a set of steps to be followed to keep plant and its components from being set in motion or to prevent the release of stored energy, including electricity, heat, steam and fluids.

When developing plant isolation plans, employers should consult with health and safety representatives (HSRs), plant operators and people who adjust, clean, maintain, repair or inspect the plant. If possible, plant manufacturers, suppliers and people who designed and installed the plant should also help develop the plan. If a workplace does not have the expertise to develop plans, the employer should engage qualified people to do so.

The effectiveness of isolation plans relies on:

- Having the isolation plan documented and accessible to the relevant people in the workplace
- Providing information, instruction and training to workers involved with the plant
- Appointing a person as a supervisor (Permit holder) to make sure the workplace strictly follows isolation plan

GMW documented isolation plans should contain:

- All process steps required to prepare the equipment for removal from service/operation
- All isolation steps required to safely remove the asset, equipment or plant from service
- Any hold points where work should pause and be assessed by all relevant parties. E.g. Long Term Projects

Plans should be:

- Be peer reviewed before being carried out
- Communicated with all relevant parties involved

3.1.3 Permit

The permit process ensures that GMW's isolations meet the 'Principles of Isolation' which are as follows:

- Shut down the assets, equipment, plant and its components
- Identify all energy sources
- Identify all isolation points; and/or
- Documented controls

Where energy sources are identified, all works must have a corresponding permit application and include an Isolation Plan.

- Isolate all energy sources
- De-energise all stored energies (Test for dead)
  - Lock and Tag all isolation points
  - One person one lock (anyone in the line of fire)
  - One lock one key
- Multiple Isolations (More than one energy source)
- Tagging
- Testing of Isolation Procedures
- Re-energizing and re-instating

Where control(s) are used within the Isolation Plan, they must also be:

- Inspected for implementation
- Regularly inspected for effectiveness during works
- Removed / checked before re-energizing and re-instating

Where only one control can be achieved, the work is to be considered "Live work".

An isolation permit will expire 30 calendar days after the permit issue date; after which, a new permit will be required

3.1.3.1 Locking Single & Multiple Isolation Points for One Isolation Permit

Step	Who	Action
1	Permit Holder	Selects required isolation equipment required to satisfy the Isolation Permit; this may include: • Lock Box • Hasps • A number of personal locks
2	Permit Holder and Permit Authoriser	Applies Isolation Point Lock(s) and 'Danger – Do Not Operate' tag(s) to each Isolation Point
3	Permit Authoriser & Permit Holder	Inspect all the isolation points with locks and verify isolations are effective
4	Permit Authoriser	Permit Authoriser retains any key(s) to the noted Isolation(s)
5	Permit Holder	Places the Isolation Point Lock key(s) (Permit Holder's) in the Lock Box and closes box
6	Permit Holder	Attaches a Permit Holder Lock to the Lock Box and retains the key
7	Permit Holder	Shows the Work Party Members all of the isolation points with locks
8	Work Party Members	Signs on to the Isolation Permit and attaches their Personal Safety Lock to the Lock Box
9	Permit Holder & Work Party Members	Lock on and lock off daily or when moving to another job

3.1.3.2 Locking Isolation Points Shared Across Isolation Permits

Step	Who	Action
1	Permit Holder	Identifies the primary Isolation Permit and associated Lock Box which contains the isolation points required for the secondary Isolation Permit
2	Permit Holder	Selects required isolation equipment required to satisfy the Isolation Permit; this may include: • Lock Box • Hasps • A number of personal locks
3	Permit Holder and Permit Authoriser	Applies Isolation Point Lock(s) and 'Danger – Do Not Operate' tag(s) to each Isolation Point
4	Permit Authoriser & Permit Holder	Inspect all the isolation points with locks and verify isolations are effective
5	Permit Authoriser	Permit Authoriser retains any key(s) to the noted Isolation(s)
6	Permit Holder	Locks Cascade Lock onto the primary Isolation Permit Lock Box and places the key into the Lock Box for the secondary Isolation Permit along with Isolation Point Lock key(s) (Permit Holder's) in the Lock Box and closes box
7	Permit Holder	Attaches a Permit Holder Lock to the Lock Box and retains the key
8	Permit Holder	Shows the Work Party Members all of the isolation points with locks
9	Work Party Members	Signs on to the Isolation Permit and attaches their Personal Safety Lock to the secondary Lock Box
10	Permit Holder & Work Party Members	Lock on and lock off daily or when moving to another job

3.2 Locks and Tags

*Note: Personal Energy Isolation Locks must never be keyed alike

3.2.1 Red Locks - Personal Safety Lock (PSL)	**Personal Safety Locks (PSLs) Personal Safety** Locks are **RED** and: • Are individually keyed • Must be installed/removed to point of isolation by the Permit Holder (your lock your life) • Any person in the line of fire should have in place their own personal red lock and tag • Locks and white tags are to be removed when leaving the work site every day **Changing of Tags** • During the work shift a "Do not Operate" tag must be placed on the personal isolation Red / Supervisors lock • At the end of the work shift, the "Do not Operate" tag must be replaced with an "Out of Service" tag		Tag used while Workers are in the line of Fire  Tag used when isolations are in place but no workers are in the line of fire 
3.2.2 Black Locks - Permit Authoriser (Asset Owner)	**Asset Isolation** Locks are **BLACK** and: • The first and last lock to be added to or removed to prevent inadvertently returning an asset, equipment, plant and its components to service		
3.2.3 Yellow Locks - Maintenance Lock	**Maintenance** Locks are **YELLOW** and: • Locked onto isolation points such as valves, electrical isolators, etc. to keep equipment in an isolated state when it is under maintenance		
3.2.4 Supervisors Lock	**Supervisors** Lock cannot be Red, Yellow or **Black** and: • The color & purpose of lock must be documented on permit • Can be used by the Supervisor in replacement of the Red Lock • Can remain in place over the course of the permit or as an overnight lock • One lock, one key • Must be installed / removed by permit holder • Is used with white & yellow tags **Changing of Tags** • During the work shift a "Do not Operate" tag must be placed on the personal isolation Red / Supervisors lock • At the end of the work shift, the "Do not Operate" tag must be replaced with an "Out of Service" tag		Tag used while Workers are in the line of Fire  Tag used when isolations are in place but no workers are in the line of fire 

Examples of use:

Red Lock - Personal Safety Locks (PSLs)

The red lock is Personal Safety Locks (PSLs) Personal Safety Lock

- You are working in the channel and your supervisor has isolated a regulator up stream (using their red lock)
- Everyone working in the channel should apply their own Personal Safety Lock (Red lock) to the isolation (Asset, Hasp or lock box)

Visual Que

- A red lock on an asset indicates someone is working on / in the asset and is in the line of fire. A single red lock, indicates there may not be a permit in place

Black Lock – Permit Authoriser / Asset Owner

The black lock is the Asset owners lock and applied to the isolation process by the Asset owner anytime they need to isolate their asset

- If the asset owner needs to isolate their asset for operational reasons they should apply a black lock

Visual Que

- A single black lock identifies the asset has been isolated due to operational needs; or
- The asset owner has approved an isolation permit. The permit holder has placed a red lock on the asset. The asset owner applies the Asset owners black lock as well

Visual Que

- A red lock combined with a black lock indicates the asset is isolated (Asset owner and Site Works Supervisor), and there are workers in the line of fire and the asset owner has approved the permit and / or is aware of the condition of the asset

Yellow Lock - Maintenance Lock

The yellow lock is used to isolate an asset that is under maintenance

- A regulator is being serviced or changed out
- The person conducting the maintenance isolates the energy sources and uses a yellow lock to lock the isolation out

Visual Que

- When using the yellow lock it is not necessary to have an asset owners lock (black) applied.
- The person conducting the maintenance must advise the asset owner, that they are working on the asset but may / may not need a permit.
- This will be dependent on the nature of the work and the risk as agreed by the maintainer & the asset owner

Supervisors Lock

Each site supervisor can apply their personal supervisors lock to an isolation in place of the red lock. The Supervisors lock can remain on the isolation for the duration of the permit or be used as an overnight lock.

The “Do not operate” and “Out of service” tag must be changed daily as detailed above

The supervisors lock shall:

- Be one lock, one key
- Only the supervisor who places the lock on can remove the lock
- The colour and purpose of the lock must be on the permit
- The tag only can be changed over at the end & beginning of each shift by the permit holder
- The Supervisors lock cannot be: Red, Yellow or Black

Visual Que

- A coloured supervisor’s lock combined with a Black lock indicates there is an approved permit in place but workers may or may not be in the line of fire; or
- A coloured supervisors lock on its own indicates works may have begun but their may not be a permit in place

3.2.5 Synthetic / Nylon Isolation locks

Nylon or synthetic isolation locks and hasps should be used when working on high voltage or electrical switchboards or when an isolation plan identifies an electrical risk may be present. The colors of these locks must be in line with this procedure

3.3 Verification of Isolations / Controls

After plant and equipment has been isolated, all energy sources shall be tested in an approved manner by a qualified person to determine that the plant and equipment has been de-energized from all sources of energy.

No work on the plant and equipment shall be undertaken until the isolation has been verified by checking the correct equipment has been isolated. Verification steps must include but are not limited to the following:

- Confirm no identification errors were made (correct isolation point)
- Confirm the isolation point is in the safe position
- Ensure all energy is dissipated or restrained
- Observe a change in state of energy when isolating
- Test for dead

In the event of a test demonstrating that the isolation has not been achieved the isolation shall not proceed. The Permit Holder and the Asset Owner shall be contacted to investigate and approve a new isolation.

The persons completing the isolation (Permit Holder) is responsible for ensuring isolation verifications are successfully completed prior to commencing shift and during the course of the work day. These checks are to be documented and available for inspection when called upon

3.4 Removal of Isolation / Re-energisation

To remove the isolation from the plant and equipment these steps shall be followed:

1. Check to ensure no one is at risk if the plant or equipment is re-instated (no one is in the line of fire)
2. Ensure plant or equipment is safe to operate any maintenance or construction works are completed

3a. Remove your red personal lock and lockout tag, NEVER remove anyone else's; or

3b Remove your yellow lock (maintenance personal) and re-energise the isolation point

4. Notify the Asset owner of the works completion

Note: Re-energisation of a site both Personal Locks and Asset owner locks should be removed at the same time where possible

3.5 Locks Left on / Abandoned Locks

In situations where a person has left a job and failed to remove their lock (red personal lock, yellow maintenance lock, black asset lock) the Senior Team Lead or authorised representative, may only make the decision to have that lock removed provided these steps have been followed:

- All practical efforts have been made to contact the person to return and remove their lock
- A risk assessment has been conducted identifying the risks associated with removing the lock
- A confirmation that all workers have been cleared from the line of fire
- The General Manager of the team concerned has been contacted
- The Asset Owner has been contacted
- Ensure that competent and suitably qualified people have checked that the equipment is safe to operate
- The GM, Asset Owner and Permit Holder have signed and agreed it is safe to remove the lock

The person shall be advised as soon as practicable that their lock has been removed and their isolation is no longer in place.

An incident report in IRIS must be raised and an investigation by the permit *holder (or contractor's specific investigation method)* is conducted to determine why the lock was left on / abandon and presented to that area's General Manager for review.

3.6 Document Management

All permits are to be registered in Objective and held in folders relevant to the Division authorising the permit

3.7 Visual Representations of Processes / Principles / Responsibilities

Process flowcharts and high level principles can be found as follows:

- Appendix B – GMW Energy Isolation Process Flow Chart
- Appendex C - Water Efficiency Project (WEP) Process Flow Chart
- Appendix D - High Level Principles / Responsibilities

4. Responsibilities

Responsibility	Who
Approval	General Manager, People Culture and Safety
Ownership and implementation	Manager, Safety Wellbeing and Environment

4.1 Manager

- Establish a training plan to ensure that all relevant employees are trained in theory and practical components of LOTO activities
- Ensure that records are maintained of training activities
- Equipment used is in accordance with regulations and service records are maintained
- Ensure that time and budgets are made available for appropriate training and LOTO equipment
- Ensure the implementation of this procedure in their area of control and that supervision of persons in the workplace is in place to provide compliance

4.2 Supervisor

- Conduct workplace inspections on a frequent basis to ensure compliance and adequacy of LOTO practices in their area of control
- Ensure that when LOTO has not been able to be applied and the issue is escalated to the Manager
- Conduct a regular review of the safety controls on work sites
- Ensure that resources are available to support the implementation of this procedure
- Ensure regular Occupational Health & Safety local inspections are conducted

4.3 Worker

- Monitor and ensure that the requirements listed in this procedure are being adhered to while carrying out their work activities
- Report hazards or incidents to the Supervisor
- Where LOTO has not been able to be applied for a work activity requiring LOTO, do not undertake the work activity until the issue is escalated to the Supervisor
- Participate in activities and investigations designed to improve safety

4.4 Permit Holder

- Is responsible for ensuring the isolation plan and permit conditions are in place over the duration of the permit
- Verifies and approves the method of isolation documented on the Isolation Permit (and Plan) for the isolation of equipment
- Attaches his or her personal lock and danger tag to a group lock box(or hasp) to control an isolation
- Has consulted with the person in charge of the equipment in relation to the isolation required
- Arranges for the handover of control of the isolation to another Permit Holder or to the person in control of the equipment

4.5 HSE Team

- Conduct regular reviews of this SOP to ensure currency
- Provide technical oversight of the LOTO process
- Support GMW in implementing these requirements

5. Definitions

GMW	Goulburn-Murray Water
LOTO	Lock Out Tag Out
PPE	Personal Protective Equipment
HSR	Health & Safety Representative
PSL	Personnal Safety Lock
SOP	Standard Operational Procedure

6. Document history

Doc #	Date approved	Approved by	Approval #
A4065912	9 July 2021	Glenda Smith, GM People, Culture & Safety	A4072091
A3812876	17 November 2020	Glenda Smith, GM People, Culture & Safety	A3849732

7. Associated documents

Document name	#
GMW Tag Out Regulator workflow	A3213731
GMW SWI – Isolation of Regulators	A3068587
GMW Lock Out Tag Out Isolation Plan and Permit	A3820166
Safety and Wellbeing Policy	A3928597

8. Appendices

Appendix A - Procedural Overview / Toolbox

This Appendix is designed to provide an overview of the requirements of this procedure – it is to be used as an aid/refresher to the procedure, and is not to be used in isolation without prior training of the procedure. Section 4 – Responsibilities has not been included within this Appendix (Please see Procedure for respective details)

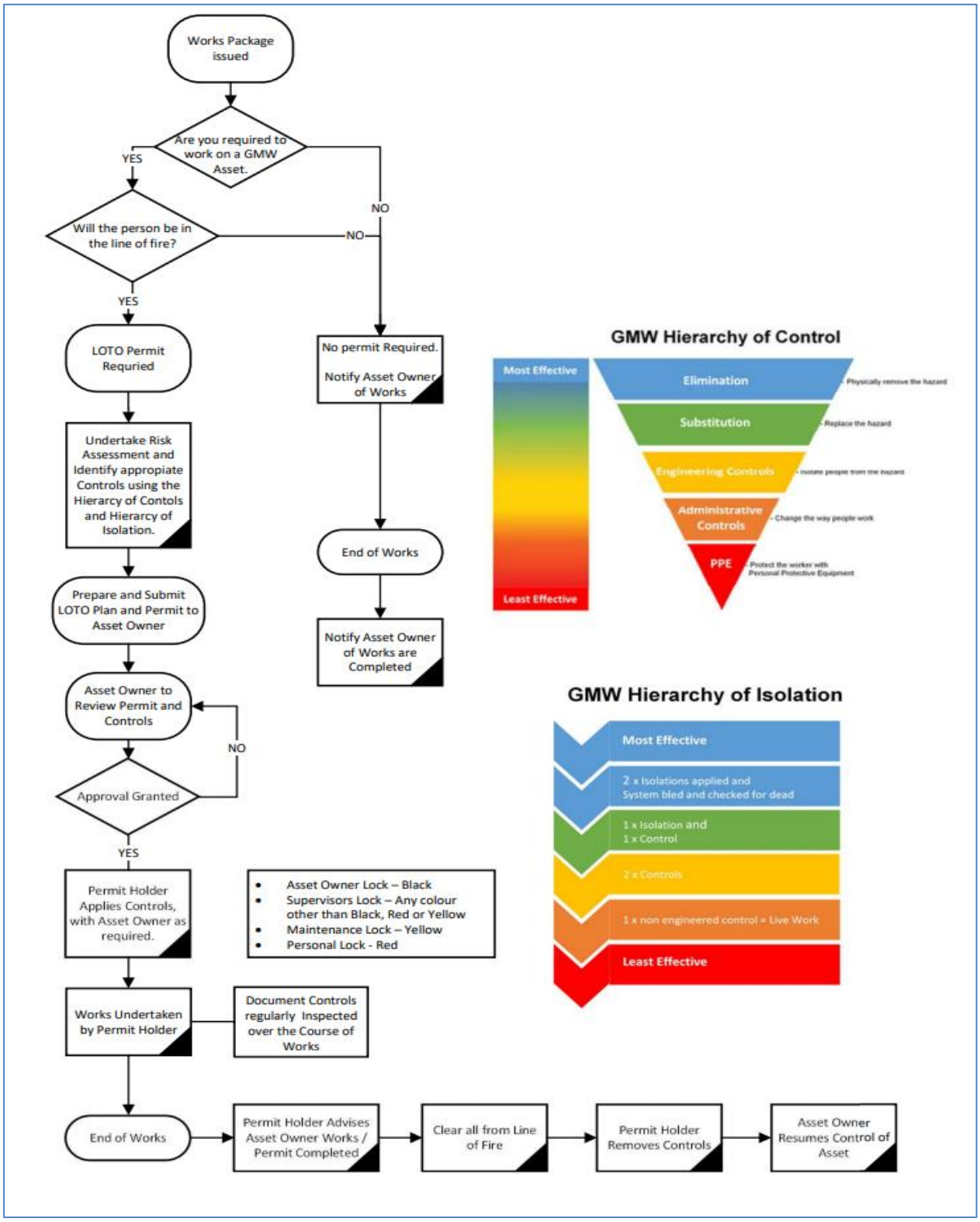
The purpose of this document is to describe how plant and equipment must be isolated within Goulburn-Murray Water (GMW) to reduce the risk of hazardous energy being released

Sect.	Requirement
3 Procedure	• Workers can suffer serious injuries or die when stored energy such as water, electricity, gas (pressure) plant, hydraulic and pneumatic energy sources are or released • To help keep workers safe, employers must isolate, de-energise, lockout and tagout plant before work, maintenance or repairs • GMW's Energy Isolation also known as LOTO (lockout tagout) procedure is a set of steps that must be followed to ensure assets, equipment, plant and its components are de energized and all residual or stored energy is released to prevent any uncontrolled release of energy which may harm or cause injury to a person
3.1 Hierarchy of Controls and Compliance	• 3.1.1 Risk Assessment - A documented risk assessment must be completed to determine: ▪ What energy sources are present (gas, electricity, hydraulics etc.) ▪ What risks are associated with known hazards or energy sources ▪ What controls are implemented to remove all harmful sources of energy to make it safe ▪ Identify the isolation points required for the task/job to be undertaken safety - When the risk assessment identifies energy sources, the Hierarchy of Control must be used in conjunction with GMW Hierarchy of Isolation to ensure the task/job can be undertaken safely: ▪ 3.1.1.1 Hierarchy of Control ▪ 3.1.1.2 GMW Hierarchy of Isolation ○ Where only one control can be achieved, the work is to be considered "Live work" • 3.1.1.2.1 Live Work • 3.1.2 Isolation Plan - An isolation plan is a set of steps to be followed to keep plant and its components from being set in motion or to prevent the release of stored energy, including electricity, heat, steam and fluids • 3.1.3 Permit - The permit process ensures that GMW's isolations meet the 'Principles of Isolation' which are as follows: ▪ Shut down the assets, equipment, plant and its components ▪ Identify all energy sources ▪ Identify all isolation points; and/or ▪ Documented controls - Where energy sources are identified, all works must have a corresponding permit application and include an Isolation Plan ▪ Where control(s) are used within the Isolation Plan, they must also be: ○ Inspected for implementation ○ Regularly inspected for effectiveness during works ○ Removed / checked before re-energizing and re-instating

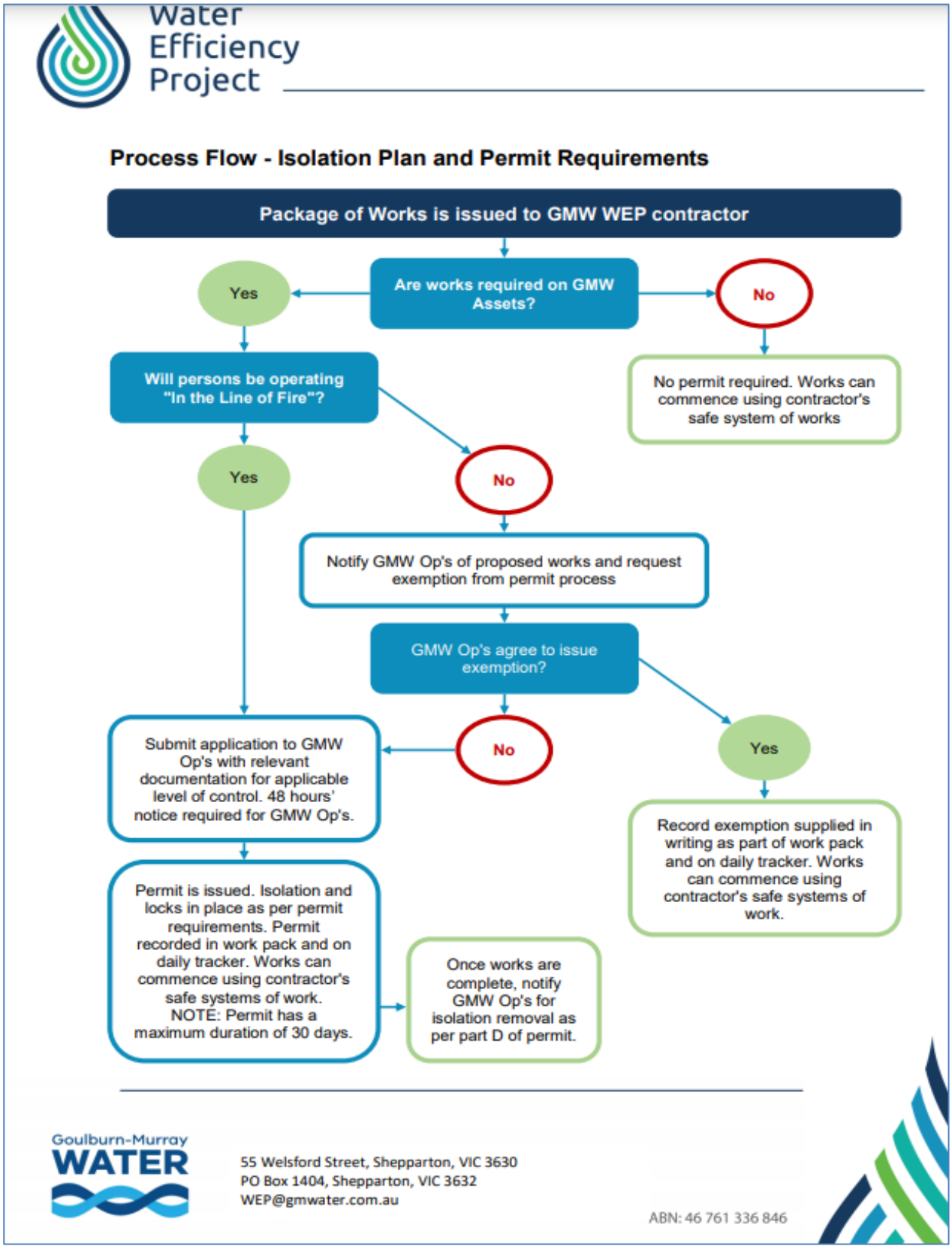
Sect.	Requirement
3.1 Hierarchy of Controls and Compliance cont.	• 3.1.3 Permit cont. - An isolation permit will expire 30 calendar days after the permit issue date; after which, a new permit will be required - 3.1.3.1 Locking Single & Multiple Isolation Points for One Isolation Permit - 3.1.3.2 Locking Isolation Points Shared Across Isolation Permits
3.2 Locks and Tags	• 3.2.1 Red Locks - Personal Safety Lock (PSL) - Personal Safety Locks (PSLs) Personal Safety Locks are RED and: ▪ Are individually keyed ▪ Must be installed/removed to point of isolation by the Permit Holder (your lock your life) ▪ Any person in the line of fire should have in place their own personal red lock and tag ▪ Locks and white tags are to be removed when leaving the work site every day - Changing of Tags ▪ During the work shift a “Do not Operate” tag must be placed on the personal isolation Red / Supervisors lock ▪ At the end of the work shift, the “Do not Operate” tag must be replaced with an “Out of Service” tag • 3.2.2 Black Locks - Permit Authoriser (Asset Owner) - Asset Isolation Locks are BLACK and: ▪ The first and last lock to be added to or removed to prevent inadvertently returning an asset, equipment, plant and its components to service • 3.2.3 Yellow Locks - Maintenance Lock - Maintenance Locks are YELLOW and: ▪ Locked onto isolation points such as valves, electrical isolators, etc. to keep equipment in an isolated state when it is under maintenance • 3.2.4 Supervisors Lock - Supervisors Lock cannot be Red, Yellow or Black and: ▪ The color & purpose of lock must be documented on permit ▪ Can be used by the Supervisor in replacement of the Red Lock ▪ Can remain in place over the course of the permit or as an overnight lock ▪ One lock, one key ▪ Must be installed / removed by permit holder ▪ Is used with white & yellow tags - Changing of Tags ▪ During the work shift a “Do not Operate” tag must be placed on the personal isolation Red / Supervisors lock ▪ At the end of the work shift, the “Do not Operate” tag must be replaced with an “Out of Service” tag • 3.2.5 Synthetic / Nylon Isolation locks - Nylon or synthetic isolation locks and hasps should be used when working on high voltage or electrical switchboards or when an isolation plan identifies an electrical risk may be present - The colors of these locks must be in line with this procedure
3.3 Verification of Isolations / Controls	• No work on the plant and equipment shall be undertaken until the isolation has been verified by checking the correct equipment has been isolated. • Verification steps must include but are not limited to the following: - Confirm no identification errors were made (correct isolation point) - Confirm the isolation point is in the safe position - Ensure all energy is dissipated or restrained - Observe a change in state of energy when isolating - Test for dead

Sect.	Requirement
3.3 Verification of Isolations / Controls cont.	• In the event of a test demonstrating that the isolation has not been achieved the isolation shall not proceed - The Permit Holder and the Asset Owner shall be contacted to investigate and approve a new isolation • The persons completing the isolation (Permit Holder) is responsible for ensuring isolation verifications are successfully completed prior to commencing shift and during the course of the work day - These checks are to be documented and available for inspection when called upon
3.4 Removal of Isolation / Re-energisation	• To remove the isolation from the plant and equipment these steps shall be followed: - Check to ensure no one is at risk if the plant or equipment is re-instated (no one is in the line of fire) - Ensure plant or equipment is safe to operate any maintenance or construction works are completed - Remove your red personal lock and lockout tag, NEVER remove anyone else's; or - Remove your yellow lock (maintenance personal) and re-energise the isolation point - Notify the Asset owner of the works completion • Re-energisation of a site both Personal Locks and Asset owner locks should be removed at the same time where possible
3.5 Locks Left on / Abandoned Locks	• In situations where a person has left a job and failed to remove their lock (red personal lock, yellow maintenance lock, black asset lock) the Senior Team Lead or authorised representative, may only make the decision to have that lock removed provided these steps have been followed - All practical efforts have been made to contact the person to return and remove their lock - A risk assessment has been conducted identifying the risks associated with removing the lock - A confirmation that all workers have been cleared from the line of fire - The General Manager of the team concerned has been contacted - The Asset Owner has been contacted - Ensure that competent and suitably qualified people have checked that the equipment is safe to operate - The GM, Asset Owner and Permit Holder have signed and agreed it is safe to remove the lock • The person shall be advised as soon as practicable that their lock has been removed and their isolation is no longer in place • An incident report in IRIS must be raised and an investigation by the permit holder (or contractor's specific investigation method) is conducted to determine why the lock was left on / abandon and presented to that area's General Manager for review
3.6 Document Management	• All permits are to be registered in Objective and held in folders relevant to the Division authorising the permit
3.7 Visual Representations of Processes / Principles / Responsibilities	• Process flowcharts and high level principles can be found as follows: - Appendix B – GMW Energy Isolation Process Flow Chart - Appendex C - Water Efficiency Project (WEP) Process Flow Chart - Appendix D - High Level Principles / Responsibilities

Appendix B – GMW Energy Isolation Process Flowchart



Appendix C – Water Efficiency Project (WEP) Process Flow Chart



Goulburn-Murray WATER

Approved: 9 July 2021 Review due: July 2024

Appendix D – High Level Principles / Responsibilities

High Level Principles

4 Lock System

Red Locks – Personal Locks *(Each person operating in the Line of Fire Must apply Lock)*

Black Locks – Asset Owners Lock

Yellow Locks - Equipment Isolation

Multi Coloured - Supervisors Lock

Note:
An isolation ideally should have 2 locks & Tags:

- The LOTO Officer (Supervisor in charge of the isolation – Red Lock / supervisors lock
- The Asset Owner - Black Lock

(unless for some maintenance tasks – Yellow Locks - where the worker is not in the line of fire)

Keeping people out of Line of Fire

Identification of Energy Sources

- Electrical
- Water
- Gas (Pressure)
- Plant

Asset Owner Obligation

Permits to Isolate an Asset need to be signed off / approved by the Asset owner

(Some maintenance works may not need Asset owners sign off and may conduct some live works without GM approval)

Person conducting Work (In line of Fire)

- Identify Energy sources
- Prevent energy sources from effecting those in the line of fire
- Seek approval (*Permit*) from asset owner to interrupt their asset / network

2 methods of controlling Energy Sources

Isolation – Highest Control

- Remove energy sources which will prevent the asset / equipment from operating either remotely or Manually
- Test for Dead

Control Energy Sources
Lowest Control

- Establish controls to prevent energy from touching anyone in the line of fire

Live Work

- Where the above cannot be done, the work is to be classified as "Live Work" and sign off from GM required

Hierarchy of Isolation

2 x Isolations
1 x Isolation, 1 x Control
2 x Controls
1 x Control - (*Considered Live Work)*
0 x Control / Isolations - Live Work

Permits

At the end of the works, the permit holder MUST contact the asset owner and advised works have concluded

All permits will expire after 30 calendar days; after which, a new permit will be required

Isolation Tags

A "Do not Operate" tag MUST be attached to the personal isolation (red) / Supervisors lock for the duration of the shift or while workers are in the line of fire

At the end of the shift the "Do not Operate" tag must be replaced with an "Out of Service" tag

At the commencement of the new shift the "Out of Service" tag must be replaced with a "Do not Operate" tag prior to workers entering the line of fire

Excellence Honesty Accountability Courage Caring

OFFICIAL

High Level Principles / Responsibilities (cont'd)

Locks

1 Key, 1 Lock
1 Lock, 1 Tag

Each person in the line of fire applies a lock

Asset applies lock

Locks cannot be removed by anyone other then the Lock owner
(*A process is in place for emergencies)*

Keeping people out of Line of Fire

Energy Isolation only applies to those exposed to the energy source

(*plant operations (desilting) LOTO would not be needed)*

Contractors working in the Line of Fire must follow GMW's isolation protocols and apply personal isolation locks

Visitors to the site are not required to apply personal locks to the isolation but must be under direct supervision at all times

Asset Owner Obligation

Must be aware of the condition of their network at all times

Does not own the LOTO process but must ensure it is in place

Person conducting Work (In line of Fire)

- Must own the LOTO process
- Must notify Asset Owner the network will be interrupted
- Must ensure locks & tags are applied
- Work with Asset owner to ensure asset is isolated

Regular Inspections of Isolations

The permit holder must conduct regular checks of all isolations & controls to ensure they are still in place and effective

These checks are to be documented

2 methods of controlling Energy Sources

Isolation – Highest Control

- Must always test for dead and remove stored energy

Control Energy Sources Lowest Control

- Must have in place a process to ensure controls are still effective over the course of the work

Live Work – Last Resort

- Should not be done unless absolutely necessary

(Excludes approved "Live" testing)

Re Energisation

Cannot occur until all are clear of the Line of Fire and confirmed by those in charge of the isolation

Permit must be completed and the Asset owner notified that the network is back on line