

## ISOLATION AND LOCKOUT PROCEDURES

### 1. PURPOSE

This SOP focuses on isolation of plant & equipment and the steps which **must** be taken to avoid the possibility of injury to employees/contractors when working on, testing, or inspecting EGW assets, whether it be hydraulic, mechanical or electrical. This procedure also extends to vehicles, Mobile plant and hand tools. Isolation of water, sewage, chemicals, fluids and gases **shall** also be applied to ensure safety from the system.

### 2. APPROVAL

Managing Director.

### 3. SAFETY

The Safety of all personnel, plant and equipment **must** be addressed prior to any work to be performed on EGW assets. This includes but is not limited to electrical/mechanical equipment or equipment containing hazards associated with stored energy (such as fluids/air under pressure or equipment under tension). Isolation of equipment **must be carried out**.

Prior to working in or on any EGW asset, employees / contractors **must** complete a Field Work Hazard Identification Checklist (Form 048) or equivalent. If controls cannot be met in the form/Field GO 048, a Safe Work Method Statement (Form 086) should be completed. This process will determine/record whether isolation of valves, sewers, water mains, tanks, switches, circuit breakers is required.

Subject to the assessment confirming that isolation is required, such isolation **must** be in place and where practicable a Lock, Danger Tags or Out of Service tags are to be applied.

#### 3.1 DEFINITIONS

- **EGW Employee:** Personnel who have completed specific induction & training and are authorised to operate, inspect, and or repair EGW assets.
- **EGW Assets:** Items of equipment that are owned, hired or lease for our core business but are not limited to; Building, Lagoons, Pipes, Pumps, Machinery, Electrical, Programs. Treatment plants, dosing units, vehicles, plant and equipment.
- **Isolation:** A means of making safe by a form of control, Lock out Tag out, Physical barrier or a break, Releasing of stored energy. Flush, Clean, Purge systems.
- **Shall, Must, :** An action that is **mandatory**
- **Danger Tag:** Is a Red tag that is part of an isolation process to perform work safety on EGW assets, The red tag indicates that someone is working in, on or around an EGW asset and the changing of or tampering with the tagged isolation could place personnel in danger.
- **Out of Service Tag:** Is a Yellow & Black tag that forms part of a process to control identified items that are deemed faulty/defective and **must** not be energised. No attempt to operate asset until the required repairs have been completed.

- **Padlock & Chain:** Physical means of securing an isolation point in the open or closed position to enable safe work on an EGW asset.
- **SCADA:** A computer data base & program that monitors and controls EGW operating assets automatically.

## 4. PROCEDURE

### 4.1 Initial conditions

EGW assets that require isolation **must** be clearly identified with the corresponding isolations and documented in a Permit to Work/Form 048/SWMMs or via Field Mobility Solutions. There are occasions where isolations of assets is not clear, e.g. switchboard may not isolate all equipment in vicinity and some plant, actuators etc. may require multiple isolating in different locations.

All isolations that provided safety from the system **must** be identified, recorded and where practicable tagged.

It is the responsibility of personnel who are conducting the work or who manage the EGW asset to identify and apply the appropriate isolation and controls to ensure safety from the system. This may be in the form of locks, tags, chains, purging, physical barrier or a multiple of all. As a minimum where practicable a tag **must** be attached to the isolation.

Equipment required/necessary to carry out isolations **shall** be made available and sourced from store at the applicable depot (Locks, Tags Chains).

Where the works / isolations to an asset may impact on the normal operational of that asset the appropriate personnel /owner **must** be notified with the relevant information eg: date, duration, task, potential effects and the expected return to normal operation.

If an isolation is to be in place for an extended period of time (greater than 48hrs), the work group supervisor & asset owner **must** be notified of the extended isolation.

### 4.2 SCADA automated computer control system.

A majority of EGW assets are controlled automatically, it may be necessary to isolate the item from SCADA this can be achieved by using Form 117 or

- Contacting SCADA/IT at Bairnsdale office requesting isolation.

**Red Danger Tags.** These are used to identify an isolation point and indicate the “**lock out & tag out**” of plant, equipment and/or machinery. The tag is a visual control preventing the operation of or energisation of the assets that is being worked on.

The changing, modify or removal of the danger tag **must** only be performed by the person who has applied the tag or by an authorised person who has written confirmation by the initiating person that it is safe to do so. This can be achieved by a signature from the initiating person on the tear of section on the bottom of tag or by the means of a traceable electronic message (e-mail/SMS). All relevant information **must** be clearly written on the danger tag (Name of person/s work on plant, Item of plant, Date, Contact phone number).

Any attempt to tamper with or removal of a danger tag/isolation without permission will result in disciplinary action.

On completion of the work all locks or tags are too be removed and isolations returned to normal position.

**Out of service tags.** (yellow and black) are also visual tags fitted to EGW assets to indicate faulty or defective. No attempt is to be made to operate or use asset until the identified repairs are completed or the item is made safe.

The changing, modify or removal of the tag **must** only be performed by the person who has applied the tag or by an authorised person who has written confirmation by the initiating person that it is safe to do so. This can be achieved by a signature on the tear of section on the bottom of tag or by the means of a traceable electronic message (e-mail/SMS).

Any attempt to tamper with or the removal of a danger tag/ isolation will result in disciplinary action.

**Danger Tags:**

**Out of Service Tags**



**Locks & Chains.** can be used to provide a physical / permeant means of isolating on an EGW asset. Some cubicles have built in locking systems with removable keys. Chains can be applied to valves or used to hold or restrain tension. Where a chain is to hold or restrain an item it **must** be rated greater than the force required. In all cases when this form of control is used the relevant tag **must** also be attached (Danger or Out of Service).

**4.3 Electrical equipment.** The Isolation / Resetting of electrical equipment shall be carried out by the following methods.

**4.3.1 Re-Set of Circuit Breakers, RCD and Thermal Overloads – in and outside escutcheon board range of works**

EGW personnel can re-set equipment that is positioned on the front of cubical back boards. Personnel **should** only re-set TWICE, if the re-set continues to fault a licenced electrician **must** be notified.

**If the only means of accessing the re-set switch/buttons is behind the back board a licenced electrician should be sourced.**

If a licenced electrician is not available or it is not practicable, only authorised EGW personnel with reconnect/disconnect licence can access these areas for re-set only.

To prevent the ongoing exposure re-set switches/buttons **shall** be identified and where practicable **shall** be upgraded to eliminate the requirement for access behind back board in cubicles.

Future applications/cubicles **shall** be designed to eliminate the need for the re-set to be behind/inside electrical cabinets via:

- Auto re-set of equipment
- Re-set switch/buttons on the item (RCD built into GPO).
- Design cubicles with re-set switch/buttons as not to expose personnel to live conductor (Outside / front of back board).
- Shield exposed live electrical conductor/equipment
- Only licenced personnel to access behind escutcheon doors (the panel)

#### 4.3.1 Non- electrical disconnection:

- turn off controlling switch/Isolation where practicable, attach a lock or tag
- if circuit breakers are accessible from the backing plate, only in cabinets lock or tag them in the open / off position. It may be not be practicable to lock out circuit breaker but as a minimum a tag **must** be attached.
- if removable and fuses are the only form of electrical isolation, only an authorised/licenced electrician can remove the relevant fuse/cartridge/ wedge.
- all control switches, fuses or circuit breakers, **must** be included in information on *danger tags* indicating by whom, date and reason for isolation.
- All isolations **must** be captured in a form 048/Field Mobility Solutions via the SWMS or Permit to Work.
- Personnel who carry out the isolations and install *danger tags* are to ensure the system is safe to work on by the means of test for non-start. On completion of the work all locks & tags are to be removed and isolations returned to normal position.

#### 4.3.2 Electrical disconnection and reconnection of equipment:

- disconnection/connection of electrical equipment **shall** only be carried out by an appropriately electrically licensed person
- Authorised electrical personnel **must** apply test before you touch process.
- Fuse elements or cartridges **shall** only be removed by an authorised electrical person.
- Switches, fuses or circuit breakers, used for the purpose of an isolation and maintaining safety from the system, where practicable, **shall** be locked or tagged. As a minimum a danger tag **must** be attached with the relevant information -Tag attached by whom, date and reason for isolation/disconnection and a contact phone number.
- All exposed electrical tails/connections **shall** be adequately protected/taped up to prevent accidental contact.

- All isolations **must** be captured in a form 048/Field Mobility or a Permit to Work 101/117.
- Personnel who carry out the isolations and install *danger tags* are to ensure the system is safe to work on by the means of test for non-start. On completion of the work all locks & tags are to be removed and isolations returned to normal position.
- Where practicable plant /item should be tested for normal operation.

#### 4.3.3 Fault finding live electrical works.

- Only licenced electrical employees are authorised to conduct fault finding with a standby person where practicable with a minimum of CPR training.
- All electrical test equipment **must** be fit for purpose and in good condition.
- All tools **must** be compatible to the installation and where required calibrated.
- All appropriate PPE **must** be worn/used.

#### 4.4 Plant and Equipment, Hydraulic (oil or water) / Air and Gas isolation

Employees/Staff/Contractors servicing plant and equipment **shall** also use *danger tags* on isolation points to avoid the possibility of it being energised inadvertently.

- Where practicable all stored energy **shall** be released via grounding hydraulic plant equipment or hydraulic plant attachments, purging, bleeding, venting, blanking, isolation of valves and plugging with expandable stoppers.
- Where fitted a lock & tag **shall** be placed on the battery isolator, or on a prominent/visible location on the vehicle (eg: steering wheel). Where practicable Locks or tags **shall** be applied to identify the isolation point's valves, blanks, plugs.
- *In some circumstances the use of valve key & the positioning of valve cover is recognised as a form of isolation control.*
- Ignition keys of mobile plant **shall** be removed and held by the person servicing the equipment or conducting the task.  
On completion of task all locks & tags **shall** be removed and isolation returned to the normal position.

***Defective/un-finished plant and equipment shall be tagged with an out of service tag, then the appropriate personnel notified.***

### 5. KEY RESPONSIBILITIES

**5.1** Managers and supervisors are responsible for the implementation of this SOP within their area of responsibility, including the implementation of any corrective actions arising from workplace inspections, audits or risk assessments.

**5.2** Employees are required to co-operate with management with regard to the implementation of this SOP, particularly with regard to informing Superintendents/supervisors of the use of lock

out, *danger* or *out of service* tags, and ensuring that tags are not removed without the appropriate authorisation.

## 6. REFERENCES

The main legislation and references relevant to this SOP include:

- Occupational Health and Safety Act 2004 and subordinate regulations
- Occupational Health and Safety Regulations 2007, Part 3.5
- WorkSafe Victoria Code of Practice for Plant
- WorkSafe Guidance Note – Lock out and tagging of plant: November 2003
- Australian/New Zealand Standards
- EGW SOP 103 - OHS Hazard Management
- Work Instruction Electrical Isolation Procedure DOC/12/31077\*

## 7. REFERENCED FORMS

- Field Mobility Solutions Field Work Hazard Identification Checklist (Form 048)
- Safe Work Method Statement (paper based form 086)
- Permit to Work (Form 101)
- Field Mobility Solutions computer program/data base.

## 8. RISK MANAGEMENT

This SOP forms an integral part of East Gippsland Water's Risk Management Program.

## 9. REVIEW

This SOP will be reviewed every 3 years.