WC-OSH 109 Tagging & Isolation

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1. INTRODUCTION

This Corporate Procedure has been developed to ensure the Water Corporation meets its duty of care obligations to do all that is reasonably practicable to eliminate or minimise the risk to safety and health caused by the uncontrolled release of energy.

This Document describes:

a) A common system for Plant Isolation and identification to ensure a safe working environment for personnel and prevention of inadvertent damage to Plant.

b) The methods to be utilised to identify and communicate the work being carried out on Plant that is Isolated or Tagged.

2. SCOPE

This Procedure applies where work is to be carried out on Plant and in so doing, personnel may be at risk, or where the operation of Plant may place personnel at risk where either:

- the Plant is owned or controlled by the Water Corporation, **or**
- to Plant is owned or controlled by contractors or others, where the Plant is located on premises operated by the Corporation (so that foreign tags are not on site, and to have commonality of tagging and isolation systems on Corporation premises).

The requirements stipulated in this document are minimum requirements. Other activities may require additional control measures. Such measures shall be additional to, and not in place of the requirements stipulated in this document.

This Procedure does **not** apply to:

- the 'shutdown' (shutting off) of Plant for operational reasons (where there is not risk to personnel), other than to ensure the proper use of tags that may also be used for operational purposes ('Out of Service' and 'Information' Tags)
- task specific uses of tags as defined in "HIGH VOLTAGE SWITCHING PRACTICE – ME2"

3. REFERENCES

This document has been developed in accordance with the requirements of:

- Occupational Safety and Health Regulations (1996)
- Office of Energy - Electrical Requirements
- Wiring Rules – AS/NZS 3000:2000
- Safety Signs for the Occupational Environment - AS 1319
- Water Corporation Corporate OSH Manual

4. DEFINITIONS

Active Tag Register

This register is used to record the details of any tags that are active for more than one shift of the person affixing the tag.

Air Gap

"Air Gap" means a deliberate physical break in a circuit or system that has been created by the disconnection or removal of Plant components or equipment.

Examples are removal of electrical wiring, fuses, piping or valves, but not the operation of a switch or valve.

Authorised Person

A person appointed to ensure the asset operator's responsibilities under this Procedure are fulfilled. This includes making the asset safe to work on or near (so far as practicable).

The "Authorised Person" must be a person in charge of the day-to-day operation of the asset, or their nominee. They will normally be a Water Corporation operations person, but may be an employee of an Alliance Contractor where the Alliance Contractor has day-to-day control of the asset.

This Procedure also applies to Plant owned or controlled by an 'external' contractor, where the Plant is on the Corporation's premises. In these circumstances, the "Authorised Person" may be an employee of the "external" Contractor. (Note: responsibility for the day-to-day operation of the Plant is not transferred to an "external" contractor through a Clearance to Work Permit. Section 7.1(f) of this Procedure requires all Contractors, with exception of Operations & Maintenance Alliance Contractors, to have written authorisation from the Corporation to carry out Isolation on behalf of the Corporation).

Barrier

"Barrier" means an item of equipment installed such that it forms a complete physical obstruction to the flow of energy within a circuit or system.

Break

"Break" means the same as Air Gap.

Capping

"Capping" is the temporary installation of a cap over the spindle of a valve. The capping device does not have provision for positive locking to prevent a change of state and relies on respecting the associated tag.

Competent Person

A "Competent Person" is a person who has, through a combination of training, education and experience, acquired knowledge and skills enabling that person to perform correctly a specified task.

For specific types of Plant, the Competent Person shall be authorised in accordance

with the applicable statutory regulations.

Complex Isolation

'Complex Isolations' are those judged to involve –

- Numerous Isolation Points, or
- An unclear, or potentially unclear scope of work, or
- Three or more parties (such as the Corporation requesting an Alliance Contractor to carry out isolations for another contractor – a Third Party), or
- Geographically Distributed, Unsecured Systems' **involving a hand-over** (i.e. *where the isolations and the work on the isolated asset will not be carried out by the same limited group of persons)*

Specific processes apply to 'Complex Isolations' (refer to section 8).

Contractor

An individual, company, group or organisation engaged under a contract to perform work or supply goods, and their sub-contractors. This includes the Corporation's Alliance Contractors and their subcontractors.

Control Point

A "Control Point" is a physical location designated by the Responsible Person where Isolation Control Documentation is kept for the duration of the work being carried out.

Examples are:
Isolation Hand-over Form, Isolation Control Form, Confined Space Entry Permit and all associated attachments.

Controlled Access Cabinet

A "Controlled Access Cabinet" is a cabinet or cubicle that has access restricted by means of a locking device. Access to keys for the locking device shall be restricted to personnel authorised by the Water Corporation.

Dead

"Dead" means Plant, equipment and apparatus which has been isolated from its energy source AND a second means of Isolation installed in addition to the primary means of isolation to protect personnel in case the primary isolation fails.

- For electrical systems "Dead" means:
  disconnected from any live system, conductors connected to earth and tested to ensure that the potential between active, return conductor and earth is at zero.
- For Fluid and Gas systems "Dead" means:
  valves closed, dead-plates installed and pressure relieved. Where fluids or gasses present in the Isolated section constitute a hazard, the Isolated section of the system shall be cleaned and purged utilising appropriate cleaning and purging procedures, and left open to atmosphere.

Designated Person

A "Designated Person" for the Water Corporation will be the relevant Section Leader whom directly reports to the Branch Manager or Regional Business Manager responsible for the Plant to which the tag is attached (e.g. Service Delivery Manager or Operations Manager). The functions of the Designated Person will not be delegated to another person (but may be escalated to the Branch Manager or Regional Branch Manager if the Section Leader could not be contacted).

A "Designated Person" for the Contractor will be the "Contractor's Representative" for the contract under which the work is undertaken (or senior nominees of the "Contractor's Representative's appointed under standing arrangements).

Energised

"Energised" means the presence, or restoration, of energy to the Plant, equipment or apparatus. Types of energy include, but are not restricted to, electrical, potential, kinetic, chemical, hydraulic, and pneumatic.

Geographically Confined, Secure Systems

A grouping of assets, Plant or equipment that is confined geographically and within secure premises.

Example - Systems within a Treatment Plant or located within a secure Wastewater Pump Station building.

Geographically Distributed, Unsecured Systems

A grouping of assets, Plant or equipment that is spread geographically and with Isolation Points which are not within secure premises. Isolation carried out on these systems poses a higher risk and therefore requires additional control measures.

Examples:

- Pipeline section five kilometres in length with multiple valves located within or outside Metropolitan areas.
- Trunk main Control Valve located outside a secure Water Corporation controlled building where all Isolation Points are not in the immediate vicinity AND in direct visual range of the persons carrying out the work.

"Information" Tag

An "Information" Tag is a tag approved by the Corporation with:

- The specific wording "Information" AND
- Blue colouring AND
- With the information fields as depicted in "Attachment E" of this document.

An "Information" tag provides temporary miscellaneous information regarding an item of Plant in circumstances where the tag (of itself) is not intended to prevent operation or use the Plant.

Isolated

"Isolated", for the purposes of this Procedure, means that the process for Isolating Plant has been carried out in accordance with the isolation standards of this Procedure (section 7) and that Plant subjected to this process poses no risk.

"Isolated" does not mean the same as "Dead" for the purposes of this Procedure.

"Isolated" Tag

An "Isolated" Tag is a tag approved by the Corporation with:

- The specific wording "Isolated" AND
- black and fluorescent orange colouring AND
- a unique identification number AND
- the information fields as depicted in "Attachment E" of this document.

An "Isolated" Tag is used to indicate:

- the isolation has been carried out on behalf of other persons to work on/adjacent the plant, AND
- the Plant has been isolated in accordance with the isolation standards of this Procedure (Section 7), such that it prevents the flow of energy, AND
- the plant is not to be operated or energised.

An "Isolated" Tag may also be utilised in Fluid or Gas Systems where a valve is to remain in the open position to ensure that the system remains evacuated or open to atmosphere.

Isolations Control Coordinator

A person appointed (where necessary) to mentor, coach, and oversee the functions of the Authorised Person(s) and Responsible Person(s) in 'Complex Isolations'.

Isolation Control Form

The Responsible person utilises this form in 'Complex Isolations' to control access to the equipment subject to the Isolation by a sign-in/ sign-out process.

Isolation Document File

Each Group/ Contractor that initiates, or is required to retain any physical documents as nominated in this Procedure is required to keep an Isolation Document File. At the completion of work associated with any Isolation, all physical documents are to be filed together in date order of the first document associated with that Isolation.

Isolation Hand-over Form

The Authorised Person utilises this form in 'Complex Isolations' to:

- Communicate all details of the Isolation to the Responsible Person.
- Act as a formal hand-over/ hand-back document between the Authorised Person and the Responsible Person.

Isolation Point

An "Isolation Point" is a position where there is an interruption in the circuit or system which intentionally prevents the uncontrolled release of energy.

Isolation Request Form

This form is used in 'Complex Isolations' to agree a proposed isolation, between the party requesting Isolation and the party requested to carry out the Isolation.

Lockout

"Lockout" means the utilisation of a locking device that positively prevents a change of state in the device being utilised for the purpose of Isolation.

"Out Of Service" Tag

An "Out Of Service" Tag is a tag approved by the Water Corporation with:

- The specific wording "Out Of Service" AND
- black and yellow colouring AND
- a unique identification number.

An "Out of Service" Tag is utilised where the equipment has been withdrawn from service (or is undergoing a visual inspection where there is no danger to the personnel carrying out the visual inspection).

"Personal Danger" Tag

"Personal Danger" Tag means a tag approved by the Water Corporation with:

- the specific wording "Danger" AND
- black and red colouring.

A "Personal Danger" Tag shall only be used where there is any risk of injury to the person affixing the Tag.

Plant

"Plant" includes all machinery, equipment and systems, components of such systems or any other asset requiring isolation.

Examples are - mechanical, electrical, pneumatic or hydraulic operated pumps, valves, motors, actuators, switch gear or pipe systems.

Responsible Person

Site Supervisor of the workers undertaking the work on the asset. Identifies and controls risks arising from the work itself. Liaises with the Authorised Person to ensure asset related risks have been reduced so far as practicable.

Shall

The term "Shall", for the purposes of this Procedure means compliance is mandatory.

Should

Indicates compliance is discretionary but recommended

Shift

"Shift" means a single continuous work period encompassing normal working hours and any additional overtime hours that are continuous to the normal work hours.

Tested

"Tested" means the completion of a test process by a competent person, to prove or disprove the presence of the energy source/ hazard, using an instrument or method suited to the purpose.

Training Register

This Register is used to record the details of all personnel who receive initial and subsequent training in the use of this Procedure.

Voltage

A difference of potential normally existing between conductors and between conductors and earth as defined in AS/NZS 3000:2000.

- "Extra-low voltage" - not exceeding 50 V a.c. or 120 V ripple free d.c.
- "Low voltage" - exceeding extra-low voltage, but not exceeding 1000 V a.c. or 1500 V d.c.
- "High voltage" - exceeding low voltage.

Work

The term "Work", for the purpose of this Procedure, shall encompass all physical activity required to facilitate the cleaning, examination, inspection, investigation, testing, lubrication, maintenance or repair of Plant.

5. ISOLATION CLASSIFICATION (AND OVERVIEW OF PROCESS)

In the planning phase for each isolation, the isolation shall be classified into one of three 'streams' as defined below.

a) 'Simple/routine' Isolations

Simple/routine isolations typically involve:
- few Isolation Points, and
- not more than two parties, and
- a clear scope of work

b) 'Complex' Isolations

'Complex Isolations' typically will involve –
- Numerous Isolation Points, or
- An unclear, or potentially unclear scope of work, or
- Three or more parties (such as the Corporation requesting an Alliance Contractor to carry out isolations for another contractor – a Third Party), or
- Geographically Distributed, Unsecured Systems' **involving a hand-over** (i.e. *where the isolations and the work on the isolated asset will not be carried out by the same limited group of persons)*

c) Isolation of Geographically Distributed Unsecured Systems Not Involving a Hand-over

Where isolation of Geographically Distributed Unsecured Systems **does not involve a hand-over** (i.e. *where the isolations and the work on the isolated asset will be carried out within the same limited group of persons).*

The table that follows provides an overview of the tagging and isolation process applicable for the three 'streams', with references to applicable key sections of this Procedure.

Job stage	Simple/Routine Isolations	'Complex' Isolation (Note: this process is adjusted if there are multiple Authorised Persons or Responsible Persons. Refer to Section 8.9)	GDUS Isolation (not involving a handover)
Prior to work commencing on Plant	Personnel are trained in this Procedure **Section 10**	Personnel are trained in this Procedure **Section 10**	Personnel are trained in this Procedure **Section 10**
		Preparations are made: • Authorised Persons appointed • Responsible Person appointed • Isolations Control Coordinator appointed (if required) • Isolations planning meeting held • Isolations Request Form submitted by, and returned to the Responsible Person **Section 8**	
	Isolations are carried out to standards of this Procedure (with locking/capping if required) **Section 7**	Isolations are carried out to standards of this Procedure (and locking/capping if required) **Section 7**	Isolations are carried out to standards of this Procedure (with locking/capping if required) **Section 7**
	Isolated tags are fitted (if required) **Section 6**	An Isolated tag is affixed at each isolation point, and the tag references an associated Isolation Handover Form number. **Section 6**	Isolated tags are fitted (if required) **Section 6**
		An on-site hand-over from the Authorised Person to the Responsible Person occurs, and the Isolation Handover Form is provided **Section 8**	
Work on Plant is in progress	Each 'at risk' person that will work on isolated plant affixes their own Personal Danger Tag at each isolation point **Section 6**	Where practicable, each 'at risk' person that will work on isolated plant affixes their own Personal Danger Tag at each isolation point, **or** Where this is not practicable, personnel sign onto an Isolation Control Form held by the Responsible Person **Sections 6 + 8**	Where practicable, each 'at risk' person that will work on isolated plant affixes their own Personal Danger Tag at each isolation point, **or** Where this is not practicable, personnel sign onto an Isolation Control Form held by the Responsible Person **Section 9**
	Personal Danger tags are removed and replaced with an Out of Service Tag while personnel are not at risk (e.g. end of day or shift). Personal Danger tags are reinstated prior to work recommencing. **Section 6**	Personal Danger tags are removed and replaced with an Out of Service Tag (e.g. end of day or shift), **or** personnel sign off the Isolation Control Form where the form is utilised. Personal Danger tags are reinstated prior to work recommencing, **or** personnel sign onto the Isolation Control Form. **Sections 6 + 8**	Personal Danger tags are removed and replaced with an Out of Service Tag while personnel are not at risk (e.g. end of day or shift), **or** personnel sign off the Isolation Control Form where the form is utilised. Personal Danger tags are reinstated prior to work recommencing, **or** personnel sign onto the Isolation Control Form. **Section 9**
	If Out of Service or Isolated tags are in place overnight or longer, they are logged on an Active Tag Register. **Section 11**	If Out of Service or Isolated tags are in place overnight or longer, they are logged on an Active Tag Register. **Section 11**	If Out of Service or Isolated tags are in place overnight or longer, they are logged on an Active Tag Register **Section 11**
Work on Plant is completed	Personnel remove their own Personal Danger Tags **Section 6**	Personnel remove their own Personal Danger Tags (or sign off the Isolation Control Form if the Form were utilised, and the form is cancelled). **Sections 6 + 8**	Personnel remove their own Personal Danger Tags (or sign off the Isolation Control Form if the Form were utilised, and the form is cancelled). **Section 9**
	Isolated tags and locks/caps are removed (if fitted)	A hand-back from the Responsible Person to the Authorised Person occurs, including the return of the Isolation Handover Form. **Section 8**	Isolated tags and locks/caps are removed (if fitted)
	The removal of Isolated Tags and/or Out of Service tags is logged on the Active Tag Register (if relevant). **Section 11**	The Authorised Person arranges removal of Isolated tags, and locks/caps	The removal of the Isolated Tags and/Out of Service tags or is logged on the Active Tag Register (if relevant). **Section 11**
		The removal of the Isolated Tags and/or Out of Service tags is logged on the Active Tag Register (if relevant). **Section 11**	
		Forms and attachments that were utilised are retained as a record. **Section 11**	Forms and attachments that were utilised are retained as a record. **Section 11**

6. TAGGING – WORK INSTRUCTION

Identification Tags – System of Usage

Four distinctive types of tags are made available by the Water Corporation to identify the status of plant. Only tags approved by the Water Corporation as part of this Procedure shall be used. The approved tags are illustrated in Attachment E, and are as follows:

- "Personal Danger" Tag
- "Isolated" Tag
- "Out of Service" Tag
- "Information" tag

The "Personal Danger" Tag is considered the highest level of protection, therefore "Isolated", "Out of Service" and "Information" Tags are subordinate to "Personal Danger" Tags where a combination of these tags are attached.

6.1 "Personal Danger" Tag

Usage of "Personal Danger" Tag

A "Personal Danger" Tag shall be used where there is any risk of injury to the person affixing the tag if the Plant to which the tag is affixed is operated or energised.

Each person working on Plant, inclusive of those assisting, shall affix their "Personal Danger" Tag to the Isolation Point/s.

In the case of Isolations involving the usage of Isolation Control Documents, the sign on to an "Isolation Control Form" shall have the same effect as the attachment of a "Personal Danger" Tag to all Isolation Points by that person.

Plant shall not be operated or energised unless all "Personal Danger" Tags have been removed.

To ensure that the status of a "Personal Danger" Tag is not diminished, "Personal Danger" Tags shall not be used in situations where there is no risk to personnel who are actually carrying out work on the Plant to which the tag is affixed.

In situations where Plant is required to be tagged because of withdrawal from service due to a fault, withdrawal from service awaiting repair or spares, or withdrawal from service due to operational reasons, an "Out Of Service" Tag shall be used.

Responsibility of Person Affixing a "Personal Danger" Tag

Should information recorded on any previously affixed tag be unclear, such information must be sought before affixing any additional tag.

Tags shall be affixed in a manner whereby the tag can be clearly seen by a person approaching the point to which it is affixed.

Personnel affixing a “Personal Danger” Tag shall ensure that all details required on the tag are filled out. The Company name and the name of the person affixing the tag shall be clearly and indelibly recorded on the tag.

Should the work associated with the placement of a “Personal Danger” Tag not be completed before the end of the shift, that person shall remove their “Personal Danger” Tag and attach an “Out Of Service” Tag recording any dangers or limitations. The information recorded on the “Out Of Service” Tag shall be phoned, faxed or electronically transmitted for recording in the “Active Tag Register” before the end of the shift. In the case of personnel working outside normal working hours, the information may be transmitted as early as possible following the commencement of the next shift. (Note: Requirements for Active Tag Registers are described in Section 11.1)

Removal of a “Personal Danger” Tag

A “Personal Danger” Tag shall be removed by the person who affixed the tag.

Should that person be unavailable to remove the tag, a Designated Person (the relevant Section Leader whom directly reports to the Branch Manager or Regional Business Manager, or senior nominee of a Contractor’s Representative responsible for the Plant to which the tag is attached) shall be responsible for the following:

a) Obtaining the agreement of the person who affixed the tag that the tag can be removed.

b) In the event that the person who affixed the tag cannot be contacted after every reasonable effort has been made, the Designated Person will direct that the “Personal Danger” Tag may be removed only after an inspection of the Plant and associated system is carried out. The inspection must determine the reason for affixing the “Danger” Tag has been addressed AND all required tasks are completed such that the Plant can be operated safely (or an “Out Of Service” Tag shall be attached recording all dangers and limitations).

6.2 “Isolated” Tag

Usage of “Isolated” Tag

An “Isolated” Tag shall be used to indicate:

- the isolation has been carried out on behalf of other persons to work on/adjacent the plant, AND
- the Plant has been isolated in accordance with the isolation standards of this Procedure (Section 7), such that it prevents the flow of energy, AND
- the plant is not to be operated or energised.

An “Isolated” Tag may also be utilised in Fluid or Gas Systems where a valve is to remain in the open position to ensure that the system remains evacuated or open to atmosphere.

An “Isolated” tag is not required where the person carrying out the isolation will be the only “at risk” person that will work on the Plant and has attached their “Personal Danger” tag (i.e. the isolation is not on behalf of others).

An “Isolated” tag is also not required where the person carrying out the isolation is part of a small group of persons actually working on the Plant involving simple, routine, low risk isolation where:

- The person carrying out the Isolation is a Competent Person trained in carrying out Isolation in accordance with this Procedure, AND
- All “at risk” persons in the group
- All persons comprising the group actually working on the isolated Plant are present when the Competent Person carries out the Isolation, AND
- Any person who is not present when Isolation is carried out shall be thoroughly briefed by the Competent Person on the status of the isolated Plant before that person attaches their “Personal Danger” tag/s, AND
- The work to be carried out will be completed within one shift of the Competent Person actually carrying out the Isolation.

Examples:

- *A Tradesman working alone or in the company of an Apprentice and a Trades Assistant is required to Isolate a pump motor in order for all three persons to work on the pump set.*
- *An Electrical Tradesman working with a Mechanical Fitter and the Mechanical Fitter’s Apprentice and Trades Assistant are working together to exchange a submersible pump in a Sewerage Pump Station wet well.*

In the case of ‘Complex Isolations’, the ‘Isolation Handover Form’ number shall be recorded on associated ‘Isolated’ tags. Where the Plant is isolated for more than one party to work on (and managed under separate ‘Isolation Handover Forms’), a separate ‘Isolated’ tag shall be affixed at each Isolation Point for each such party (with the tag referencing the associated Isolation Handover Form).

An “Isolated” Tag shall not be used in any circumstance as a substitute for a “Personal Danger” Tag.

Each person carrying out work on Plant to which an “Isolated” Tag is affixed must affix their “Personal Danger” Tag before working on such Plant. (In the case of Isolations involving the usage of Isolation Control Documents, the sign on to an “Isolation Control Form” shall have the same effect as the attachment of a “Personal Danger” Tag to all Isolation Points by that person).

Responsibility of Person Affixing “Isolated” Tag

Tags shall be affixed in a manner whereby the tag can be clearly seen by a person approaching the point to which it is affixed.

Personnel responsible for affixing an “Isolated” Tag shall ensure that all details required on the tag are filled out.
The following must be clearly and indelibly recorded on the tag:

a) Company name and the name of the person affixing the tag
b) Date and time the tag was affixed to plant.
c) Identification of all Isolation Points.
d) The nominee for removal (e.g. Electrician, Fitter)
e) Reason for the use of the tag in the “Defects, Dangers and Limitations” field on the tag. (In the case of ‘High Risk’ isolations, the Isolation Handover Form number shall be recorded in this field of each Isolated Tag).
f) Where single valve isolation is relied on, a notation on the ‘Isolated’ Tag that there is only one Isolation point. (Note: Single valve Isolation shall be avoided where practicable. Refer to section 7.3 for fluid system isolation and locking standards).

If the tag may remain affixed for more than one shift, the information recorded on the tag must be phoned, faxed or electronically transmitted for recording in the "Active Tag Register" before the end of the shift. In the case of personnel working outside normal working hours, the information may be transmitted as early as possible following the commencement of the next shift. (Note: Requirements for Active Tag Registers are described in Section 11.1).

Removal of "Isolated" Tag

An "Isolated" Tag shall only be removed after the necessary work has been carried out AND all other associated tags have been removed.

The knowledge, qualifications or authority required to remove the "Isolation" Tag is that nominated in the "This tag may be removed by:" field on the tag. The authority shall not permit a broader range of persons to remove the tag than is necessary in the circumstances. In particular, for 'Complex Isolations', the Authorised Person *should* be the only person nominated on the Isolated Tag for its removal.

In the event that such nominee(s) cannot be contacted after every reasonable effort has been made, a Designated Person (the relevant Section Leader whom directly reports to the Branch Manager or Regional Business Manager, or senior nominee of a Contractor's Representative responsible for the Plant to which the tag is attached) will direct that the "Isolated" Tag be removed only after an inspection of the plant and associated system is carried out to ensure that:

a) All associated tags have been removed in accordance with the Removal Procedure for each type of tag as detailed in this Procedure AND
b) The reason for affixing the "Isolation" Tag has been addressed and all required tasks have been completed such that the Plant can be operated safely.

Where the tag had been registered on an "Active Tag Register", the removal of the tag shall be recorded in the "Active Tag Register".

6.3 "Out Of Service" Tag

Usage of an "Out Of Service" Tag

An "Out of Service" Tag shall be used (as instruction that the Plant shall not be operated or energised) in circumstances other than those requiring the use of a 'Personal Danger' Tag' or 'Isolated' Tag under this Procedure. Typically, that will include:

a) Where Plant has been withdrawn from service (e.g. withdrawal from service due to a fault, or awaiting repair or spares, or due to operational reasons).
b) The work to be carried out requires only a visual inspection and there is no danger to personnel who are actually carrying out the visual inspection on the Plant to which the tag is affixed.

Each person carrying out work on Plant to which an 'Out of Service' tag is affixed must affix their 'Personal Danger' Tags before working on such Plant, if the operation or energising of the Plant would place them at risk. (In the case of Isolations involving the usage of Isolation Control Documents, the sign on to an "Isolation Control Form" shall have the same effect as the attachment of a "Personal Danger" Tag to all Isolation Points by that person). (Note: An 'Out of Service' Tag affixed to Plant denotes the Plant is not to be operated or energised but does not necessarily indicate the Plant has been isolated).

Plant or equipment shall not be operated or energised when it is fitted with an 'Out of Service' Tag (other than for fault finding by the person carrying out the repair of a fault for which an 'Out of Service' Tag had been fitted).

Responsibility of Person Affixing "Out Of Service" Tag

Should information recorded on any previously affixed tag be unclear, such information must be sought before affixing any additional tag.

Tags shall be affixed in a manner whereby the tag can be clearly seen by a person approaching the point to which it is affixed.

Personnel responsible for affixing an "Out Of Service" Tag shall ensure that all details required on the tag are filled out.
The following must be clearly and indelibly recorded on the tag:

a) Company name and the name of the person affixing the tag.
b) Date and time the tag was affixed to plant.
c) Reason for the use of the tag, including any known dangers or limitations.
d) The nominee for removal (e.g. Electrician, Fitter).

If the tag may remain affixed for more than one shift, the information recorded on the tag must be phoned, faxed or electronically transmitted for recording in the "Active Tag Register" before the end of the shift. In the case of personnel working outside normal working hours, the information may be transmitted as early as possible following the commencement of the next shift. (Note: Requirements for Active Tag Registers are described in Section 11.1).

Removal of "Out Of Service" Tag

An "Out Of Service" Tag shall only be removed after the necessary work has been carried out.

The knowledge or the qualifications and authority required to remove the "Out Of Service" Tag is that nominated in the "This tag may be removed by:" field on the tag. The authority shall not permit a broader range of persons to remove the tag than is necessary in the circumstances.

In the event that such nominee(s) cannot be contacted after every reasonable effort has been made, a Designated Person (the relevant Section Leader whom directly reports to the Branch Manager or Regional Business Manager, senior nominee of a Contractor's Representative responsible for the Plant to which the tag is attached) will direct that the "Out Of Service" Tag be removed only after an inspection of the plant and associated system is carried out to ensure that:

a) The reason for affixing the "Out Of Service" Tag has been addressed
AND
b) All required tasks have been completed such that the Plant can be operated safely.

Where the tag had been registered on the "Active Tag Register", the removal of the tag shall be recorded in the "Active Tag Register".

6.4 "Information" Tag

Usage of an "Information" Tag

An "Information" tag provides temporary miscellaneous information regarding an item of Plant in circumstances where the tag (of itself) is not intended to prevent operation, energising or use of the Plant.

The primary use of the "Information" tag is to provide information of an operations nature, though it may also be utilised to convey necessary precautions. Instructions on the application of the tag are included within this Procedure such that it is not incorrectly affixed where a "Personal Danger", "Isolated" or "Out of Service" tag should be utilised.

An "Information" tag may be used in conjunction with a safety tag ("Personal Danger", "Isolated" or "Out of Service" tag), where the Plant is not to be operated.

Responsibility of Person Affixing an "Information" Tag

Depending on the nature of the information to be conveyed, tags may be applied to the Plant itself or its point of isolation or control. Tags shall be affixed in a manner whereby the tag can be clearly seen by a person approaching the point to which it is affixed. If used in conjunction with a "Personal Danger", "Isolated" or "Out of Service" tag, the "Information" tag shall be affixed in a manner in which it cannot obscure the other tag(s).

Personnel affixing an "Information" tag shall ensure all details required on the tag are filled out.

Details of "Information" tags are not required to be recorded on an Active Tag Register.

Removal of an "Information" Tag

"Information" tags convey a message of a temporary nature, and typically should not be in place longer than one month.

The knowledge, qualifications or authority required to remove the tag is that nominated in the "This tag may be removed by:" field on the tag. The authority should not be unnecessarily restrictive for the circumstances of the information conveyed.

In the event that such nominee(s) cannot be contacted after every reasonable effort has been made, a Designated Person (the relevant Section Leader whom directly reports to the Branch Manager or Regional Business Manager or Contractor's Representative responsible for the Plant to which the tag is attached) will direct that the "Information" Tag be removed only after an inspection of the plant and associated system is carried out to ensure that the tag were no longer required. (Note: Of itself, the tag does not preclude equipment operation).

7. ISOLATION AND LOCKING/CAPPING

Isolation will be carried out on a broad range of assets with differing complexities and associated risk. Each Isolation will require an assessment of the control measures to be taken.

7.1 Isolation – Common Requirements

a) Isolation is required in all cases where work is to be carried out on Plant and in so doing, personnel may be exposed to risk.

b) Isolation is required in cases of the removal of guards, protective shields or dismantling of Plant components where the restoration of the energy source may expose personnel who are actually carrying out work on the Plant to risk.

c) Tags must be affixed close to the Isolation Point and in a manner such that the tag can be clearly seen by a person approaching the point to which it is affixed. If other Work Instructions require additional actions at these points (eg Locks to be fitted), they must be complied with.

d) Isolation, for Contractors working on Water Corporation Plant, shall be arranged by the Water Corporation.

e) All Contractors (with the exception of Operations & Maintenance Alliance Contractors) shall have written authorisation from the Corporation to carry out Isolation of the Corporation's Plant. (Note: Of itself, a Clearance to Work Permit does not pass control of an asset to a Contractor, and does not provide the written authority required to operate or isolate the Corporation's assets).

f) A request for isolation *may* be verbal if the isolation is simple/routine and clarifying information is not required (otherwise, a Clearance to Work Permit may be utilised). For 'Complex Isolations' as defined in Section 8, a request for isolation shall utilise an Isolation Request Form.

g) An assessment of scope of work and specific isolation requirements is to be carried out and agreed by both parties before isolation may be undertaken.

h) Following Isolation, confirmation must be sent to the Party requesting Isolation that Isolation has taken place.

i) Where the work to be carried out requires only a visual inspection with no danger to personnel who are actually carrying out the visual inspection, Plant shall be switched off and an "Out Of Service" Tag shall be affixed. Isolation in accordance with this Procedure is not required.

j) Where locks or capping devices are required by this Procedure to be fitted to Isolation Points, it is the responsibility of the person carrying out the Isolation to fit the locks or capping devices.

Where endorsed by the party having day-to-day control of the asset, additional locks or capping devices may be fitted by the Responsible Person or by individuals working on the isolated Plant.

k) Each person carrying out work on Isolated Plant shall affix their own "Personal Danger" Tag to the Isolation Point/s adjacent to the "Isolated" Tag previously affixed in accordance with this Procedure. (In the case of Isolations involving the usage of Isolation Control Documents, the sign on to an "Isolation Control Form" shall have the same effect as the attachment of a "Personal Danger" Tag to all Isolation Points by that person).

7.2 Electrical Systems Isolation

7.2.1 Isolations restricted to Licensed Electrical Workers

Isolation of electrical systems shall be restricted to competent Licensed Electrical Workers, other than for –

- low voltage plug-in systems (refer to details below for isolation standards)
- low voltage non plug-in systems, where work on electrical components is not required (refer to details in section 7.2.6 for isolation and test standards)
- extra-low voltage systems (i.e. not exceeding 50V a.c. or 120V ripple free d.c.).

7.2.2 High Voltage System Isolations

Where a High Voltage System is isolated for the purpose of carrying out work on Plant associated with the High Voltage System but not on the High Voltage electrical components of such a System, a switching program is not required and isolation may be carried out by a Competent Person in accordance with the Isolation requirements in this Procedure.

Work carried out on any electrical component of a High Voltage System is **outside the scope of this Procedure**. Such work has statutory requirements and must be controlled by the use of a Switching Program and Permits as defined in the Water Corporation's "Manual of Standards, Part ME-2, High Voltage Switching and Isolation Practice for Plant Maintenance".

7.2.3 Low Voltage Plug-in System Isolations

Where there is a Low Voltage Plug-in System installed, the Competent Person carrying out the Isolation shall remove the plug and affix an "Isolated" Tag to the plug.

7.2.4 Low Voltage Non Plug-in System Isolations (physical break by component removal)

Where there is a Low Voltage Non Plug-in System installed, the Competent Person carrying out the Isolation shall provide a physical Break by removal of a component in the circuit wherever practicable. Examples of Isolation are:

a) Where fuses are protected by a Controlled Access Cabinet.
The following shall be carried out:

- Fuse Link Holders are to be removed from the Fuse Bases, tied together and left inside the cabinet.
- Testing to disprove the presence of the energy source, using an instrument or method suited to the purpose.
- An "Isolated" Tag attached to the outside of the Controlled Access Cabinet.

b) Where fuses are not protected by a Controlled Access Cabinet
The following shall be carried out:

- Fuse Links are to be removed from the Fuse Link Holders, grouped/ tied together for easy recognition and left inside the switch-room, enclosure or cabinet.
- Testing to disprove the presence of the energy source, using an instrument or method suited to the purpose.
- "Isolated" Tags attached to the empty Fuse Link Holders.
- Empty Fuse Link Holders replaced in Fuse Bases.

c) Where the internal mechanism of the switch being utilised for the purpose of isolation can be isolated through a rack-out mechanism. The following shall be carried out:

- Complete the rack-out to the "stop" position.
- Testing to disprove the presence of the energy source, using an instrument or method suited to the purpose.
- Affix an "Isolated" Tag to the racked-out mechanism.
- Where the switch has a key mechanism to complete rack-out or lockout, the key shall be removed and attached to the "Isolated" tag along with any other control switch keys associated with the switch being utilised for the purpose of isolation.
- Close compartment.
- An additional "Isolated" Tag shall be attached to the outside of the compartment if the "Isolated" Tag attached to the racked-out mechanism is not visible to a person approaching the compartment.

d) Where the internal mechanism of the switch being utilised for the purpose of isolation can be isolated through a removal mechanism. The following shall be carried out:

- Ensure that live terminals will not be left exposed by the removal of the mechanism.
- Complete the removal.
- Testing to disprove the presence of the energy source, using an instrument or method suited to the purpose.
- Affix an "Isolated" Tag at the closest visible point to the switch base.
- Where the switch has a key mechanism to complete rack-out or lockout, the key shall be removed and attached to the "Isolated" Tag along with any other control switch keys associated with the switch being utilised for the purpose of isolation.
- Close compartment.
- An additional "Isolated" Tag shall be attached to the outside of the compartment if the "Isolated" Tag attached to the switch base is not visible to a person approaching the compartment.

7.2.5 Low Voltage Non Plug-in System Isolations (without removal of a circuit component)

The physical removal of a device which prevents Plant from being energised is not always reasonably practicable. Where it is not reasonably practicable to remove a component in order to provide an Air Gap, the following shall be carried out:

- The switch being utilised for the purpose of isolation shall be switched to the "Off" position.
- Testing to disprove the presence of the energy source, using an instrument or method suited to the purpose.
- Affix an "Isolated" Tag to the switch.
  The type of test conducted shall be recorded on the "Isolated" Tag.
- Where a key mechanism is present, the key shall be removed and attached to the "Isolated" Tag.

7.2.6 Low Voltage Non Plug-in Systems Isolations (Where Work on Electrical Components is not Required)

The following is intended for work on simple, routine, low risk Isolations (such as the example below).

Where work is to be carried out on mechanical components of Plant or equipment but not on the electrical components of the equipment, electrical testing by an electrician to disprove the presence of the electrical energy source may not be required. Testing to disprove the presence of the hazard shall be conducted utilising an approved method suited to the purpose.

Example:
A Mechanical Fitter is required to carry out a routine de-rag of a pump in the machinery well of a Sewerage Pump Station.

The approved method shall comprise switching off by means of control switches and associated load isolating switches or circuit breakers followed by use of manual test switches in accordance with an approved procedure to disprove the presence of the hazard. The approved procedure shall consist of a comprehensive test sequence to ensure that Plant/ equipment requiring Isolation has been correctly identified. Work may proceed after the attachment of a "Personal Danger" Tag by all persons actually carrying out work on the Isolated Plant.

This method shall only be utilised by a Competent Person trained in the test method approved for the type of Plant to be worked on.

For Water Corporation personnel the test method shall be approved by the Branch Manager or Regional Business Manager responsible for the Plant to be worked on. For a Contractor the test method shall be approved by the "Contractor's Representative" for the contract under which the work is undertaken.

7.3 Fluid and Gas Systems Isolation (General Requirements)

Pressure in the Isolated section must be relieved and maintained at atmospheric before work is commenced and during the period of work.

Where fluids or gasses present in the isolated section constitute a hazard, the isolated section of the system shall be cleaned and purged in accordance with Corporate OSH Procedure for Cleaning and Purging.

Mechanical and/ or electrical isolation is required on all electrical/ mechanical equipment that may have a direct result on the equipment being isolated (e.g. water hammer on isolated valves; electrical isolation of electrically actuated valves).

In addition to the requirements of this Procedure, Isolations for work in a Confined Space shall comply with specific isolation standards nominated for certain asset types in the Corporate OSH Procedure 'Safe Working in Confined Spaces (WC-OSH 108)'.

Additional Work Instructions issued by the asset owner or the agency in control of the asset shall be complied with. This includes 'Scheme Operations Instructions' issued by the Scheme Operations Coordinator, for assets overseen by the Operations Centre.

7.3.1 Geographically Confined, Secure System Isolations (Fluid or Gas Systems)

Example:
Systems within a Treatment Plant or located within a secure Wastewater Pump Station building.

Where an Air Gap or Break can be achieved by disconnection or removal of plant components or equipment, or by the use of a physical barrier such as a dead-plate, an "Isolated" Tag shall be affixed to the Isolation Point/s.

Where an Air Gap or Break cannot be achieved by disconnection or removal of plant components or equipment, or by the use of a physical barrier such as a dead-plate, the following shall take place:

- All reasonable effort shall be made to provide double isolation by means of a second valve. "Isolated" Tags shall be affixed to all isolation points. Where double isolation is achieved, and isolations are within secured areas, locking/capping is not required unless a risk assessment determines otherwise.

- Where it is not reasonably practicable to provide an additional means of isolation and Isolation is dependent on a single valve being turned off, caution must be exercised during the course of Isolation in order to confirm the integrity of the valve. If there is any question as to the integrity of the valve, Isolation shall not proceed.

  If the integrity of the valve is not in question an "Isolated" Tag shall be affixed to the Isolation Point and notation made on the "Isolated" Tag that there is only one Isolation point. This shall be considered a minimum requirement.

  Where isolation is dependent on a single valve, it is highly recommended that the valve being utilised for the purpose of isolation is locked and tagged (or capped and tagged where the valves are in the immediate vicinity and in direct visual range of the persons carrying out the work).

Each person carrying out work on Isolated Plant shall affix their own "Personal Danger" Tag to the Isolation Point/s adjacent to the "Isolated" Tag previously affixed. (In the case of Isolations involving the use of Isolation Control Documents, the sign on to an "Isolation Control Form" shall have the same effect as the attachment of a "Personal Danger" Tag to all Isolation Points by that person).

7.3.2 Geographically Distributed, Unsecured System Isolations (Fluid or Gas Systems)

Examples:

- *Pipeline section five kilometres in length with multiple valves located within or outside Metropolitan areas.*
- *Trunk main Control Valve located outside a secure Water Corporation controlled building where all Isolation Points are not in the immediate vicinity AND in direct visual range of the persons carrying out the work.*

(Note: Refer to Sections 8 and 9 for processes for managing these isolations).

Where an Air Gap or Break can be achieved by disconnection or removal of plant components or equipment, or by the use of a physical barrier such as a dead-plate, the Authorised Person shall affix an “Isolated” Tag to all Isolation Point/s.

Where an Air Gap or Break cannot be achieved by disconnection or removal of plant components or equipment, the following shall take place:

a) All reasonable effort shall be made to provide **double** Isolation by means of a second valve. The valves utilised for the purpose of Isolation shall be locked such that there can be no change of state. “Isolated” Tags shall be affixed to all Isolation Points.
b) Where double Isolation has be achieved, Capping and Tagging in place of Locking and Tagging shall only be permitted where the valves utilised for the purpose of Isolation are in the immediate vicinity AND in direct visual range of the persons carrying out the work
c) Where it is not reasonably practicable to provide an additional means of Isolation and Isolation is dependent on a **single** valve being turned off, additional caution must be exercised during the course of Isolation in order to assess the integrity of the valve. If there is any question as to the integrity of the valve, Isolation shall not proceed. If the integrity of the valve is not in question, the valve utilised for the purpose of Isolation shall be locked such that there can be no change of state. “Isolated” Tags shall be affixed to all Isolation Points. In the case of unsecured systems, Capping and Tagging in place of Locking and Tagging shall not be permitted where Isolation is dependent on a single valve being turned off.

8. MANAGEMENT OF 'COMPLEX ISOLATIONS'

This section of the Procedure describes processes that shall apply in the case of 'Complex Isolations'. 'Complex Isolations' typically will involve –

- Numerous Isolation Points, or
- An unclear, or potentially unclear scope of work, or
- Three or more parties (such as the Corporation requesting an Alliance Contractor to carry out isolations for another contractor – a Third Party), or
- Geographically Distributed, Unsecured Systems' **involving a hand-over** (i.e. *where the isolations and the work on the isolated asset will not be carried out by the same limited group of persons)*

This section, and the appointment of Authorised Persons, Responsible Persons and Isolations Control Coordinators, or the use of Isolation Control Documents, are not intended to apply to simple, low risk isolations.

8.1 Unplanned work

This Procedure does not apply to 'shutdown' of Plant for operational reasons (where there is no risk to personnel), other than to limit the proper use of tags that may also be used for operational purposes ('Out of Service' and 'Information' Tags).

For burst water mains or other unplanned work, the initial shutdown of Plant (e.g. stemming of flow) shall follow relevant Procedures and protocols. The subsequent undertaking of repair work shall follow the requirements of this Procedure where personnel would be "at risk". This includes adherence to the requirements of this Section if the isolation were judged to be 'Complex' as defined above. This will include a review of the shutdown to date, which may require additional isolations, locking/capping, tagging and other precautions prior to commencing the repair.

8.2 Isolations Control Coordinator (ICC)

The primary function of an Isolations Control Coordinator is to oversee the functions of the Authorised and Responsible Persons. The need for an ICC to be appointed shall be assessed in the planning stage for **individual** works, leading up to 'Complex Isolations'. An ICC may also be appointed to oversee isolations for a wider **program of works**, such as:

- Work involving isolation within the Integrated Water Supply System, or
- upgrade of a major Wastewater Treatment Plant.

It is **not** intended that an ICC routinely be appointed for 'Complex Isolations'. An ICC may be necessary in cases such as where:

- The Authorised Person or Responsible Person are inexperienced in that role,
- Delays in the work schedule to correct tagging and isolation preparations would have major impacts
- Isolations will involve multiple operations groups (i.e. potentially multiple Authorised Persons), or
- Isolation is to provide access to multiple independent parties (i.e. potentially multiple Responsible Persons).

The need for an Isolations Control Coordinator shall be assessed in the early planning stages of work involving 'complex isolations' (ahead of the isolations planning meeting).

An ICC must be a Corporation or Alliance Contractor employee, and trained to Level 3 in the requirements of this Procedure (see Section 10 for an overview of training programs).

The role of the ICC shall include:

- Mentoring and coaching the Authorised Person and/or the Responsible Person
- Identifying necessary 'stop points' in the tagging and isolation process, at which to carry out appropriate checks
- Convene the isolations planning meeting
- Ensure there is a satisfactory succession plan in place, in event of a change in the scope of work, or the identity of the Authorised Person or Responsible Person. At the discretion of the ICC, this may require a further isolations planning meeting to be conducted.

The level of mentoring to be provided, or checks to be carried out by the ICC shall be determined by the ICC having regard for:

- the experience of the Authorised Person or Responsible Person
- the number of parties involved, and other complexities of the isolation

An ICC is not subordinate to an Authorised Person or Responsible Person in the carrying out of their respective functions under this Procedure.

By agreement, an ICC may have additional roles not directly related to tagging and isolation (e.g. assistance in water disposal planning).

8.3 Authorised Person

An Authorised Person shall be appointed for all 'Complex Isolations' to ensure the asset operator's responsibilities under this Procedure are fulfilled. This includes making the asset safe to work on or near (so far as practicable).

The Authorised Person must be a person in charge of the day-to-day operation of the asset, or their nominee. They will normally be a Water Corporation operations person, but may be an employee of an Alliance Contractor where the Alliance Contractor has day-to-day control of the asset (i.e. an 'Operations and Maintenance' Alliance Contractor).

Employees of other Contractors that do not have day-to-day control of an asset (e.g. "external' Contractor or 'maintenance' Alliance Contractor) shall not be appointed as an Authorised Person, other than within the bounds of a written authority provided by the Water Corporation party having day-to-day control of an asset or set of assets. (Note: The required written authority shall not be in the form of a Clearance to Work Permit, as the permit does not transfer responsibility for the day-to-day operation of the Plant to a recipient contractor).

The selection of an Authorised Person shall be endorsed by the Branch Manager or Regional Business Manager of the respective operations group (or an Operations Manager or equivalent in the case of a Contractor). Where practicable, the endorsement of selection of an Authorised Person should be under published standing arrangements. Authorised Persons shall be competent to perform their pivotal role, *including* that they are trained to Level 3 in the requirements of this Procedure (see Section 10 for an overview of training programs).

8.4 Responsible Person

A Responsible Person shall be appointed for all 'Complex Isolations'. The Responsible Person is a Site Supervisor of the workers that will undertake the work on the isolated asset, and shall be trained to Level 3 in the requirements of this Procedure (see Section 10 for an overview of training programs). The Responsible Person identifies and controls risks arising from the work itself, and liaises with the Authorised Person to ensure asset related risks have been reduced so far as practicable.

Where isolation is to provide access for more than one party to work on an asset, and each such party will work independent of each other, each such party shall appoint their own Responsible Person.

Where isolation is for more than one party to work on an asset, and their work is **not** independent of each other, one common Responsible Person *may* be appointed (e.g. different trades of the same work group; or subcontractors of a Main Contractor).

8.5 Direct Communication between an Authorised Person and Responsible Person

An Authorised Person (representing the party carrying out the isolations) and a Responsible Person (representing the party that will work on the isolated asset) shall be appointed for **all** 'Complex Isolations'.

In preparation for an isolation, an Authorised Person may need to consult **internally** with other persons (e.g. with the Scheme Operations Coordinator for assets under the coverage of the Operations Centre). Similarly, a Responsible Person may need to consult **internally** with other persons (e.g. their sub-contractors or Schedulers). In relation to tagging and isolation, communication between the party carrying out the isolation and the party to work on the isolated asset shall be **channelled through the Authorised Person and the Responsible Person.** This philosophy is supported by the Isolation Control Documents, and may be guided but not circumvented by an Isolations Control Coordinator.

8.6 Isolations Planning Meeting

An Isolations Planning Meeting shall be conducted for all 'Complex Isolations'. The meeting shall be attended by all persons with leading roles in the tagging and isolation, including the Authorised Person and Responsible Person (and the Isolations Control Coordinator, where appointed).

Unless otherwise agreed, the meeting is convened by the Authorised Person (or the Isolations Control Coordinator, where appointed). This person shall ensure:

- attendance by persons with leading roles
- relevant matters are discussed (see Attachment G for a sample agenda/minutes template)
- outcomes are logical and not in conflict with this Procedure
- satisfactory minutes are produced and distributed
- There is a succession plan in event of a change in the scope of work, or change in the Authorised Person or Responsible Person or other significant matter. The Plan may involve reconvening the planning meeting (and must involve notification to the Isolations Control Coordinator, where appointed).

8.7 Use of Isolation Control Documents for 'Complex Isolations'

Isolation Control Documents comprise –

- Isolation Request Forms,
- Isolation Handover Forms,
- Isolation Control Forms,
- Associated diagrams, Confined Space Entry Permits, or other attachments to the above.

The application of Isolation Control Documents is summarised in the flowchart at Attachment A to this Procedure. Forms are provided in booklets, printed in duplicate and individually numbered. A sample of the forms is shown at Attachments B, C and D in this Procedure.

a) Isolation Request Form

An Isolation Request Form is used to agree and record details of the scope of work and specific Isolation requirements between the party requesting Isolation and the party requested to carry out the Isolation.

The Responsible Person shall complete Part "A" of the Isolation Request Form for forwarding to the Authorised Person.

The description of the scope of work shall be adequate for the Authorised Person to identify necessary isolation points. Attach diagrams where necessary.

On receipt of the Isolation Request Form, the Authorised Person shall determine if the request can be accepted. This may involve further **internal** communications (e.g. forward a 'Scheme Operations System Change Request Form' to the Scheme Operations Coordinator for assets under management by the Operations Centre, and receive a Scheme Operations Instruction detailing a sequence of equipment operation/isolation). The Authorised Person shall complete Part "B" of the Isolation Request Form and return a completed copy to the Responsible Person, as early as possible before the required date/ time of Isolation, irrespective of whether the request for isolation is accepted or declined.

b) Isolation Handover Form

If the request for isolation is accepted, the Authorised Person conducts or arranges necessary isolation, locking or capping, and tagging in accordance with this Procedure. Details are recorded by the Authorised Person on Part "A" of the Isolation Handover Form.

An Isolation Hand-over Form :

- Positively identifies the individual items of equipment that have been isolated.
- Records the attachment of Isolated Tags and tag numbers at each Isolation Point.
- Communicates all details of the Isolation to the Responsible Person.
- Acts as a formal hand-over document to the Responsible Person before commencement of work.
- Acts as a formal hand-back document when work is completed and all persons have been withdrawn from Plant/ equipment subject to the Isolation.

An on-site handover shall occur between the Authorised Person and Responsible Person, including the handing over of the Isolation Handover Form. So far as practicable, the Responsible Person attains assurance of the standard of isolations performed (and locking/capping). The Responsible Person may request further isolation or accept the Isolation by "sign-off" of Part "B" of the form. By agreement, the keys to locks shall be held in the possession of the Authorised Person or the Responsible Person. The location of duplicate keys shall be known by the Authorised Person and the Responsible Person and shall be accessed only in case of an emergency.

c) Isolation Control Form

Where practicable to do so, tags shall be affixed at each point of isolation in accordance with Section 6 of this Procedure (including the affixing and daily removal of "Personal Danger" Tags by each person working on the isolated asset).

Only where this is not practicable, shall the Responsible Person utilise the Isolation Control Form to:

- Record any additional control measures carried out by the Responsible Person as agreed with the Authorised Person
- control access to the equipment subject to the Isolation by a sign-in/ sign-out process.

The Responsible Person shall arrange the establishment of a Control Point for all persons actually working on the equipment subject to the isolation. The Control Point shall be a physical location where written documentation such as the Isolation Request Form, Isolation Handover Form, and Isolation Control Form(s) are kept for the duration of the work to be carried out. Any person associated with the Isolation shall have access to these documents.

Each person actually working on the equipment shall "sign-on" to the "Isolation Control Form" after viewing and agreeing to the written documentation including the "Isolation Hand-over Form" and any other attachments. Any person that is requested to work on the equipment may request further isolation before "sign-on" to the "Isolation Control Form". Any further Isolation must be documented on the "Isolation Control Form" and may be carried out by the Responsible Person by agreement with the Authorised Person.

The sign-on to the "Isolation Control Form" by any person shall have the same effect as the attachment of a "Personal Danger" Tag to all Isolation Points by that person. The equipment status shall not be changed under any circumstance while any person is signed-on to the written documentation.

Any person working on the equipment must sign-off to the "Isolation Control Form" at the end of their shift.

In the event that a person signed-on to an Isolation Control Form or any attachment to that form is unavailable to sign-off when work subject to the Isolation has been completed, a Designated Person (the relevant Section Leader whom directly reports to the Branch Manager or Regional Business Manager or a senior nominee of a Contractor's Representative responsible for the Plant to which the tag is attached) shall be responsible for the following:

a) Obtaining the agreement of the person who is signed-on that they may be signed-off.
b) In the event that the person who is signed-on cannot be contacted after every reasonable effort has been made, the Designated Person will direct that the person may be signed-

off only after an inspection of the Plant and associated system is carried out. The inspection must determine that the person will not be returning to continue the task for which they have signed on. The Designated Person will direct the Responsible Person to proceed with the process of formal hand-back to the Authorised Person.

When all work subject to the isolation has been completed, the Responsible Person shall ensure that:

a) all persons have signed-off the "Isolation Control Form", and
b) remove any "Isolated" Tags attached by and isolations actually carried out by the Responsible Person, and
c) formally hand-over to the Authorised person by completing Part "C" of the "Isolation Hand-over Form" and handing over lockout keys in the possession of the Responsible Person.

The Authorised Person shall ensure that all "Isolated" Tags attached by, and all Isolations actually carried out by or arranged by the Authorised Person are removed.

d) Confined Space Entry Permit

If the work to be carried out on the isolated asset is undertaken under a "Confined Space Entry Permit" then the "Isolation Control Form" may utilise the "Confined Space Entry Permit" (as an attachment to the Isolation Control Form) and all persons may sign-in and sign-out on the "Confined Space Entry Permit" instead of the Isolation Control Form.

8.8 Clearance to Work Permits

The application of Clearance to Work (CTW) Permits is the subject of Corporate OSH Procedure WC-OSH 24.

In the case of 'Complex Isolations', CTW Permits shall **not** be used **in lieu of** Isolation Control Documents, as they do not provide the necessary level of specific detail or control. Where necessary to manage aspects of the work **other** than the isolation itself, a CTW Permit may be used **in addition to** Isolation Control Documents.

8.9 Multiple Authorised Persons or Responsible Persons

On occasion, work on an asset may involve a mix of isolation points under the day-to-day control of separate operations groups (i.e. *potentially* multiple Authorised Persons). Similarly, isolations may be conducted to provide access to an asset for more than one work group functioning independent of each other (i.e. *potentially* multiple Responsible Persons).

Where one or both occur:

- An Isolations Control Coordinator should be appointed
- the best means of managing this shall be determined at the Isolations Planning Meeting, using the framework of this Procedure (tags, Isolation Control Documents, Authorised and Responsible Persons, Isolations Control Coordinator), in conjunction with Clearance to Work Permits where appropriate, and having regard for the specific circumstances.

Typically, this may be managed as follows (but should be adjusted to suit the particular circumstances):

Scenario A (one party carrying out isolations for multiple independent groups to work on an asset)

1. One Authorised Person is appointed, and a separate Responsible Person is appointed for each independent party that will be working on the isolated asset
2. A separate set of Isolation Control Documents are utilised for each party that will be working on the isolated asset
3. At each point of isolation, a separate Isolated Tag is affixed for **each** independent party that will be working on the asset. Isolated tags are linked to the respective Isolation Handover Form by quoting the form number on the tag. The Authorised Person is the only "nominee" stated on the Isolated Tags as authorised to remove them.

Scenario B (multiple operations groups will conduct isolations for one party to work on an asset)

1. One Responsible Person is appointed. An Authorised Person is appointed from each of the operations groups.
2. The Responsible Person forwards an Isolation Request Form to the Isolation Control Coordinator (ICC).
3. The ICC liaises with each Authorised Person, providing a written scope of work (or diagrams), to confirm the request can be accepted. The ICC returns the Isolation Request Form to the Responsible Person, confirming acceptance.
4. Each Authorised Person arranges their respective isolations and completes a separate Isolation Handover Form. The form number is recorded on Isolated tags. The Authorised Person is the only "nominee" stated on the Isolated Tags as authorised to remove them.
5. Each Authorised Person forwards their Isolation Handover Form to the ICC. An on-site handover occurs between the ICC and each Authorised Person.
6. When the ICC has **all** Isolation Handover Forms, the isolation records are transferred from the separate Isolation Handover Forms and consolidated onto a 'master' Isolation Handover Form. In the "Additional Information" field of the form, the form numbers of subsidiary Isolation Handover Forms are recorded.
7. An on-site handover occurs between the ICC and the Responsible Person. The Authorised Person is in attendance, if required.
8. Work commences. Personnel sign on/off the Isolation Control Form until work is completed.
9. The Responsible Person returns the 'master' Isolation Handover Form to the ICC.
10. The ICC returns subsidiary Isolation Handover Forms to the respective Authorised Persons. Each Authorised Person removes their locks and Isolated tags prior to returning the asset into service

(Note: All communication between the various operations groups carrying out isolations, and the group to work on the isolated asset, are channelled through the Responsible Person and the Authorised Persons via the ICC. The Responsible Person does not receive, or is directly involved with, the subsidiary Isolation Handover Forms).

Scenario C (multiple operations groups will conduct isolations for multiple independent groups to work on an asset).

1. An 'Authorised Person' is appointed from each of the operations groups.
2. A separate Responsible Person is appointed for each independent party that will be working on the isolated asset
3. For the 'first' party that will be working on the asset, the Responsible Person sends an Isolation Request Form to the ICC.

4. The ICC liaises with each Authorised Person, providing a written scope of work (or diagrams), and confirms the request can be accepted. The ICC returns the Isolation Request Form to the Responsible Person, confirming acceptance.
5. Each 'Authorised Person' arranges their respective isolations and completes a separate Isolation Handover Form. The form number is recorded on Isolated tags
6. Each 'Authorised Person' sends their Isolation Handover Form to the ICC. An on-site handover occurs between the ICC and the 'Authorised Person'.
7. When the ICC has all Isolation Handover Forms, the isolation records are transferred from the separate Isolation Handover Forms and consolidated onto a 'master' Isolation Handover Form. In the "Additional Information" field of the form, the form numbers of subsidiary Isolation Handover Forms are recorded.
8. An on-site handover occurs between the ICC and the Responsible Person. The Authorised Persons are in attendance, if required.
9. Work commences. Personnel sign on/off the Isolation Control Form until work is completed.
10. The Responsible Person returns the 'master' Isolation Handover Form to the ICC.
11. The ICC returns subsidiary Isolation Handover Forms to respective 'Authorised Persons'. The 'Authorised Persons' remove their locks and Isolated tags prior to returning the asset into service.
12. Steps 3 to 11 are repeated for each party that will be working on the asset, utilising separate Isolation Control Documents.

(Note: All communication between the various operations groups carrying out isolations, and each group to work on the isolated asset, are channelled through each Responsible Person and the Authorised Persons via the ICC. The Responsible Persons do not receive, or are directly involved with, the subsidiary Isolation Handover Forms).

9. MANAGEMENT OF GEOGRAPHICALLY DISTRIBUTED UNSECURED SYSTEM ISOLATIONS (NOT INVOLVING A HANDOVER)

[Note: Isolation of 'Geographically Distributed, Unsecured Systems' involving a hand-over (i.e. *where the isolations and the work on the isolated asset will not be carried out by the same limited group of persons)* is considered a 'Complex Isolation' – refer to section 8 of this Procedure].

Where isolation of Geographically Distributed Unsecured Systems **does not involve a hand-over** (i.e. *where the isolations and the work on the isolated asset will be carried out within the same limited group of persons),* the following shall apply:

1. Where practicable to do so, tags shall be affixed at each point of isolation in accordance with Section 6 of this Procedure (including the affixing and daily removal of Personal Danger Tags by each person working on the isolated asset), **or**
2. Where the above is impractical (due to significant logistical difficulties in each person affixing and removing Personal Danger Tags to remote points of isolation) :
   - A Responsible Person shall be appointed (site supervisor of the work crew). The Responsible Person also assumes the role of an Authorised Person (notwithstanding that there is no handover involved).
   - An Isolation Control Form shall be prepared by the Responsible Person, and is used on its own (i.e. without an Isolations Request Form or Isolation Handover Form).
   - An Isolated Tag shall be affixed at each point of isolation, together with locks or caps as required by this Procedure. As custodian of the Isolation Control Form, the Responsible Person is the **only** person nominated on Isolated Tags as authorised to remove the tags, and shall hold the keys of locking devices (where fitted or arranged by the Responsible Person).

- The Isolation Control Form is utilised as described for 'High Risk Isolations', including each person at risk signing on and signing off the form (in lieu of affixing and removing Personal Danger Tags).

(Note: The application of Isolation Control Documents is summarised in the flowchart at Attachment A to this Procedure).

10. TRAINING

10.1 Formal training programs

The Corporate OSH Manager shall ensure suitable training and assessment strategies are in place, for the application of this Procedure. Training and assessment shall be available in the following modules:

Level 1…Work on isolated Plant
Level 2…Carry out isolations
Level 3…Manage 'Complex Isolations'

(Note: Level 3 training is applicable to persons that will function as an Authorised Person, Responsible Person or Isolations Control Coordinator, or conduct on-the-job training to short-term contractors involved in 'Complex Isolations')

Modules are hierarchical. That is, Level 1 is a prerequisite to Level 2. Levels 1 and 2 are prerequisites to Level 3.

Training and assessment in Levels 1, 2 and 3 shall be available as face-to-face Instructor-led sessions that are conducted by a trainer approved by the OSH Manager. Training, re-training and/or reassessment in Levels 1 and 2 (but not Level 3) shall alternately be available on-line.

The prior endorsement of the OSH Manager must be obtained for alternate training or assessment programs.

Water Corporation personnel, or contractors, or others involved in the isolation of Plant or working on isolated Plant to which this Procedure applies, shall have satisfactorily completed the relevant level of training and assessment. Contracts Managers shall ensure their respective Contractors relevant personnel have undertaken the required training.

Line Managers shall (in most circumstances) determine retraining and/or reassessment intervals for their personnel, but in any event reassessment should not exceed 3 years. Indicators that a shorter retraining or reassessment interval may be required include where:

a) Participant's opportunities to apply these Procedures is infrequent,
b) There have been significant changes to the requirements of this Procedure since training was last undertaken, or
c) There are indicators that understanding of this Procedure may be inadequate.

10.2 On-the job instruction to short-term contractors

Short-term contractors may receive on-the-job instruction in the application of the Procedure, in lieu of formal training and assessment to Level 1, subject to the following conditions:

- The Corporation has acknowledged that, in the circumstances, access to formal training programs is impractical (including the on-line alternative)

- It is only available to short term contractors who will be working on isolated plant (not to persons carrying out isolations, or to the Authorised Person, Responsible Person or Isolations Control Coordinator for a 'Complex Isolation')
- Instructions shall be customised to match the circumstances of the particular job, and the specific tags, forms or other variables that will apply.
- For simple/routine isolations, the instruction shall be given by a person (Water Corporation or Contractor) trained to Level 2 in this Procedure. For 'Complex Isolations' as defined in Section 8 of this Procedure, the instruction shall be given by a person trained to Level 3 in this Procedure.
- The instruction has no portability whatsoever (within that site, or to another).
- The Instructor shall utilise the 'Tagging & Isolation – On the Job Instruction Checklist' to determine relevant points of instruction and as a record of Instruction (see sample at Attachment H).

Immediately following the instruction:

- The Instructor and instructed persons shall sign the acknowledgement at the bottom of the Checklist.
- Where practicable, each instructed person should be provided with a copy of the 'Tagging & Isolation Quick Reference Card' (Attachment I).
- Prior to work commencing, the Instructor shall check the use of tags affixed by the instructed persons (not applicable where persons are simply signing onto the Isolation Control Form or Confined Space Entry Permit and not using tags).

The party conducting the on-the-job instruction shall retain the signed checklist as a record for a period of two years (filed in a 'job file', or in a file accompanying the Isolations Control Document file, or other suitable location).

11. RECORDS

11.1 Active Tag Register

An Active Tag Register shall be held at:

- A location designated by the Branch Manager or Regional Business Manager for tags used by Water Corporation personnel.
- The Contractor's Site Office or Depot for tags used by the Contractor's or Sub-contractor's personnel.

By agreement, multiple parties working at the one location may utilise one common Active Tag Register for the site (e.g. several contractors working at one treatment plant utilizing one Register).

The following shall form the Active Tag Register:

Phoned, Faxed or electronically transmitted details of "Out of Service" and "Isolated" Tags that are active for more than one shift of the person affixing the tag inclusive of:

- Type of tag.
- Unique tag identification number.
- Specific equipment that the tag is attached to.
- Reason for attaching the tag.
- Name of the person attaching the tag.
- Date and time tag was attached.

- Nominee for removal.

The Active Tag Register shall be reviewed on a regular basis not exceeding two months to:

a) Confirm that there is a valid reason for the registered tags to remain attached to field equipment.

b) Direct the removal of any tag where there is no valid reason for that tag to remain attached to field equipment. The removal shall be carried out in accordance with the relevant removal procedure in this document.

The Register may be kept in electronic format and shall be retained for at least two years.

11.2 Isolation Control Documents File

At the completion of work associated with Isolation Control Documents, records are transferred to an Isolation Control Documents File. The file shall be held at:

- Locations designated by the Branch Manager or Regional Business Manager for documents used by Water Corporation personnel
- The Contractor's Site Office or Depot for documents used by the Contractor's or Sub-contractor's personnel.

The following shall form the Isolation Control Documents File:

All physical documents utilised in an Isolation inclusive of:

- Isolation Request Forms.
- Isolation Hand-over Forms.
- Isolation Control forms.
- All attachments to the above forms.

All documents associated with any one Isolation shall be filed together in date order of the first document associated with that Isolation.

The documents shall be retained for at least two years.

11.3 Training Register

The following shall form the Training Register:

- Name of person receiving training.
- Name of the person performing the training.
- Date of training.
- Nature of the Training (whether Competency Based Training for Competent Persons required to carry out Isolation, or training in this use of this Procedure)

The Training Register kept by the Water Corporation shall be in the form of entries into the Water Corporation standard Training Database (Tracsess or SAP) and be kept for at least two years.

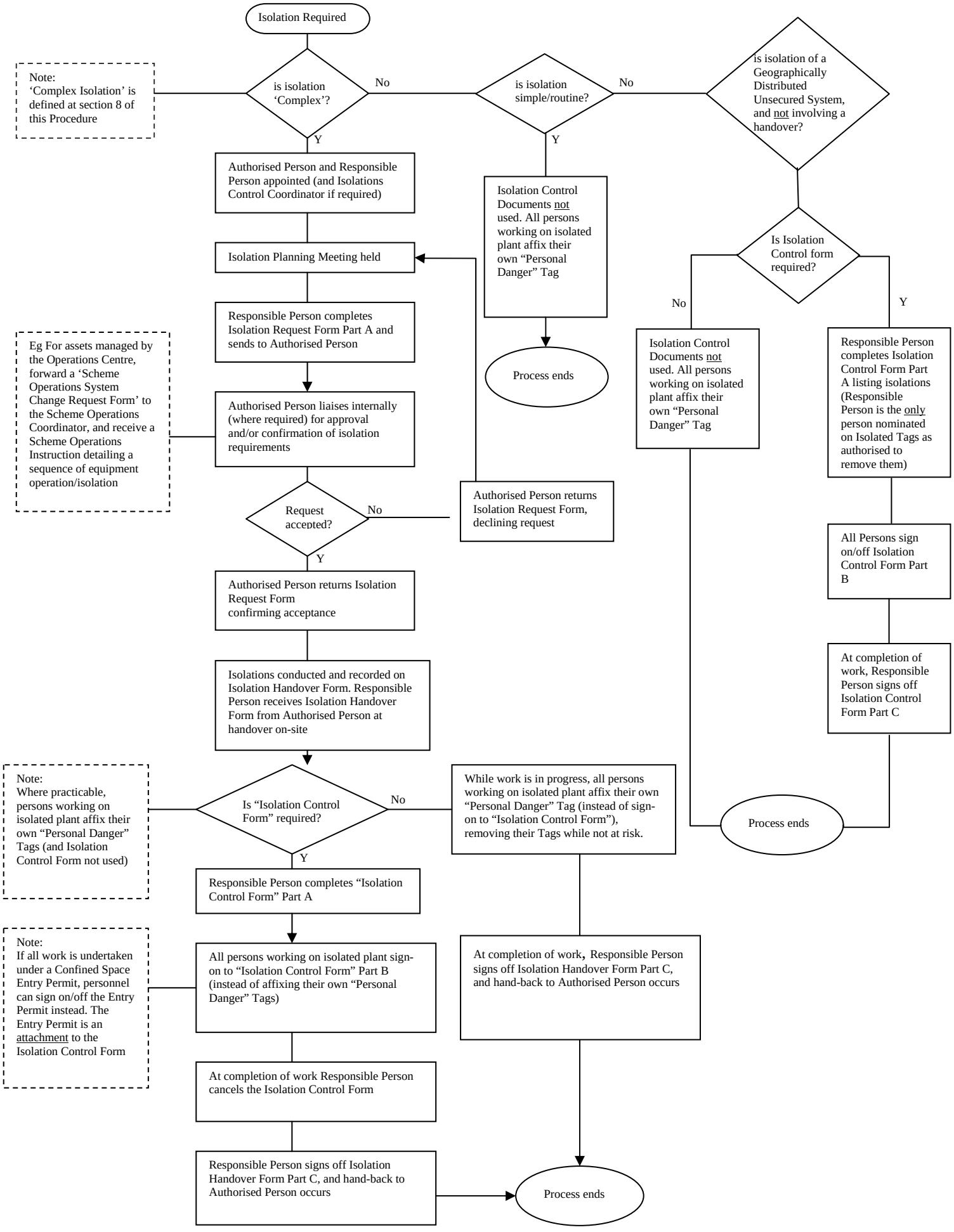
The Training Register kept by the Contractor or Sub-contractor:

- May be kept in electronic format.
- Shall retain individual entries for a period of two years.
- Shall be held at the Contractor's Site Office or Depot
- Shall be made available to the Water Corporation upon request.

Document Revision History	
18 Jun 2010	Changes to template

12. ATTACHMENTS

A. Flow Diagram – "Usage of Isolation Control Documents"
B. Isolation Request Form
C. Isolation Hand-over Form
D. Isolation Control Form
E. Tag Illustrations
F. Guidance Notes and Examples
G. 'Complex Isolation' Planning Meeting – Sample Agenda/Minutes Template
H. Tagging & Isolation – On The Job Instruction Checklist
I. Tagging & Isolation Quick Reference Sheet


Isolation Required
Note: 'Complex Isolation' is defined at section 8 of this Procedure
is isolation 'Complex'?
No
Y
is isolation simple/routine?
No
Y
is isolation of a Geographically Distributed Unsecured System, and not involving a handover?
Authorised Person and Responsible Person appointed (and Isolations Control Coordinator if required)
Isolation Control Documents not used. All persons working on isolated plant affix their own "Personal Danger" Tag
Process ends
Is Isolation Control form required?
No
Y
Isolation Control Documents not used. All persons working on isolated plant affix their own "Personal Danger" Tag
Responsible Person completes Isolation Control Form Part A listing isolations (Responsible Person is the only person nominated on Isolated Tags as authorised to remove them)
Isolation Planning Meeting held
Responsible Person completes Isolation Request Form Part A and sends to Authorised Person
Eg For assets managed by the Operations Centre, forward a 'Scheme Operations System Change Request Form' to the Scheme Operations Coordinator, and receive a Scheme Operations Instruction detailing a sequence of equipment operation/isolation
Authorised Person liaises internally (where required) for approval and/or confirmation of isolation requirements
Request accepted?
No
Y
Authorised Person returns Isolation Request Form, declining request
All Persons sign on/off Isolation Control Form Part B
At completion of work, Responsible Person signs off Isolation Control Form Part C
Authorised Person returns Isolation Request Form confirming acceptance
Isolations conducted and recorded on Isolation Handover Form. Responsible Person receives Isolation Handover Form from Authorised Person at handover on-site
Note: Where practicable, persons working on isolated plant affix their own "Personal Danger" Tags (and Isolation Control Form not used)
Is "Isolation Control Form" required?
No
Y
While work is in progress, all persons working on isolated plant affix their own "Personal Danger" Tag (instead of sign-on to "Isolation Control Form"), removing their Tags while not at risk.
Process ends
Responsible Person completes "Isolation Control Form" Part A
Note: If all work is undertaken under a Confined Space Entry Permit, personnel can sign on/off the Entry Permit instead. The Entry Permit is an attachment to the Isolation Control Form
All persons working on isolated plant sign-on to "Isolation Control Form" Part B (instead of affixing their own "Personal Danger" Tags)
At completion of work, Responsible Person signs off Isolation Handover Form Part C, and hand-back to Authorised Person occurs
At completion of work Responsible Person cancels the Isolation Control Form
Responsible Person signs off Isolation Handover Form Part C, and hand-back to Authorised Person occurs
Process ends

WATER CORPORATION

ISOLATION REQUEST FORM

ATTACHMENT B of WC-OSH 109

PART "A" To be completed by the PARTY REQUESTING ISOLATION

PERSON REQUESTING ISOLATION:	Name	Company/ Group	Position	Phone

COMPANY/ GROUP REQUESTED TO CARRY OUT ISOLATION:	Company/ Group	Section

Job Location:

Description of Plant/ Equipment to be Isolated:

(Attach diagram if necessary)

Additional Information:

IS ISOLATION BEING CARRIED OUT FOR ANOTHER CONTRACTOR (A THIRD PARTY)? Y/N

Third Party:	Company/ Group	Contact Name	Phone

Required date and Time of Isolation: Date / / Time am / pm

Person Requesting Isolation: Signature Date / /

PART "B" To be completed by the PARTY REQUESTED TO CARRY OUT THE ISOLATION

Request for Isolation DECLINED — Reason

Request For Isolation ACCEPTED ☐ Tick Box If ACCEPTED

Person Responsible for Isolation:	Name	Company/ Group	Position	Phone

Signature Date / /

Attachments By Party Requesting Isolation: Y/N ☐ № of Pages ☐

Attachments By Party Requested to Carry Out Isolation: Y/N ☐ № of Pages ☐

Distribution:

- Copy — A completed copy must be transmitted to the Person Requesting Isolation as early as possible before the required Date / Time of Isolation, irrespective of whether request is accepted or declined. This copy is to be filed to the Requesting Person's Company/ group "Isolation Documents File".
- Original — The completed, original is to be filed to the Group/ Company Requested to Carry Out Isolation "Isolation Document File".

WATER CORPORATION

ISOLATION HAND-OVER FORM

ATTACHMENT C of WC-OSH 109

12345

PART "A" To be completed by the AUTHORISED PERSON carrying out the Isolation

AUTHORISED PERSON	Name	Company/ Group	Position	Phone

Job Location:

Description of Plant/ Equipment to be Isolated:

(Attach diagram if necessary)

Isolation Points:

	Valve/ Switch Reference	Description	Locked Y/ N	Capped Y/ N	"Isolated" Tag №
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8					
9.					
10.					

Additional Information:

Include any:

- Hazards, Risks and Limitations
- Control Measures in Place

ISOLATION HAS BEEN CARRIED OUT BY THE UNDERSIGNED

AUTHORISED PERSON	Signature	Date / /	Time am / pm

PART "B" To be completed by the RESPONSIBLE PERSON

ISOLATION ACCEPTED	Name of Responsible Person	Company/ Group	Position	Phone

	Signature	Date / /	Time am / pm

Keys to Locks held by:	Authorised Person		Responsible Person		Attachments	Y/N		№ of Pages	

PART "C" To be completed by the RESPONSIBLE PERSON

- All persons have "Signed Out" and been withdrawn from the Plant/ Equipment subject to this Isolation. Y/N
- All Plant/ Equipment is fit for use. Y/N

RESPONSIBLE PERSON	Signature	Date / /	Time am / pm

DISTRIBUTION:

- White Copy — Retained by the Authorised Person until Parts "A", "B" and "C" are filled out and job completed. Then file to the Authorised Person's Group/ Company "Isolation Documents File".
- Yellow Copy — Held at the "Isolation Control Point" after Parts "A" and "B" are filled out and job is in progress. When job completed, attach to Green Copy.
- Green Copy — When Parts "A", "B" and "C" filled out and job is complete, attach to Yellow Copy. Then file to Responsible Person's Group/ Company "Isolation Document File".

WATER CORPORATION

ISOLATION CONTROL FORM

ATTACHMENT D of WC-OSH 109

Insert same number as the associated" Isolation Hand-over Form" (If used).

PART "A" To be completed by the RESPONSIBLE PERSON

RESPONSIBLE PERSON	Name	Company/ Group	Position	Phone

Job Location:

Description of Plant/ Equipment to be worked on:

(Use same description as used on associated "Isolation Hand-over Form")

ISOLATION POINTS ADDITIONAL TO THOSE STATED ON THE ASSOCIATED " ISOLATION HAND-OVER FORM"
(Additional Isolations have been carried out by the Responsible Person and agreed with the Authorised Person):

	Valve/ Switch Reference	Description	Locked Y/ N	Capped Y/ N	"Isolated"Tag №
1.					
2.					
3.					
4.					

Additional Information:

Include any additional:

- Hazards, Risks and Limitations
- Control Measures in Place

THE ADDITIONAL ISOLATIONS DETAILED ABOVE HAVE BEEN CARRIED OUT BY THE UNDERSIGNED

RESPONSIBLE PERSON | Signature | Date / / | Time am / pm

PART "B"

ALL PERSONS CARRYING OUT WORK ON THE PLANT/ EQUIPMENT SUBJECT TO THIS ISOLATION MUST SIGN-ON AT THE START OF THEIR SHIFT AND SIGN-OFF AT THE END OF THEIR SHIFT.

Signing-on to this Form or any "Confined Space Entry Permit" attached to this Form shall have the same effect as attaching your own Personal Danger Tag to all Isolation Points detailed on this Form and the attached Yellow copy of the "Isolation Hand-over Form". The equipment status shall not be changed under any circumstance while any person is signed-on to this Form or any attachment to this Form.

	DAY		DATE / /		DAY		DATE / /	
NAME	Time In	Signature	Time Out	Signature	Time In	Signature	Time Out	Signature

PART "C" To be completed by the RESPONSIBLE PERSON

- All persons have "Signed Out" and been withdrawn from the Plant/ Equipment subject to this Isolation. Y/N
- All Plant/ Equipment is fit for use. Y/N

RESPONSIBLE PERSON | Signature | Date / / | Time am / pm

- DISTRIBUTION: This Form and any attachments to this Form must be attached to the Yellow Copy of the "Isolation Hand-over Form" and held at the Isolation Control Point for the duration of the job. Then file to Responsible Person's Group/ Company "Isolation Document File".

DANGER TAG

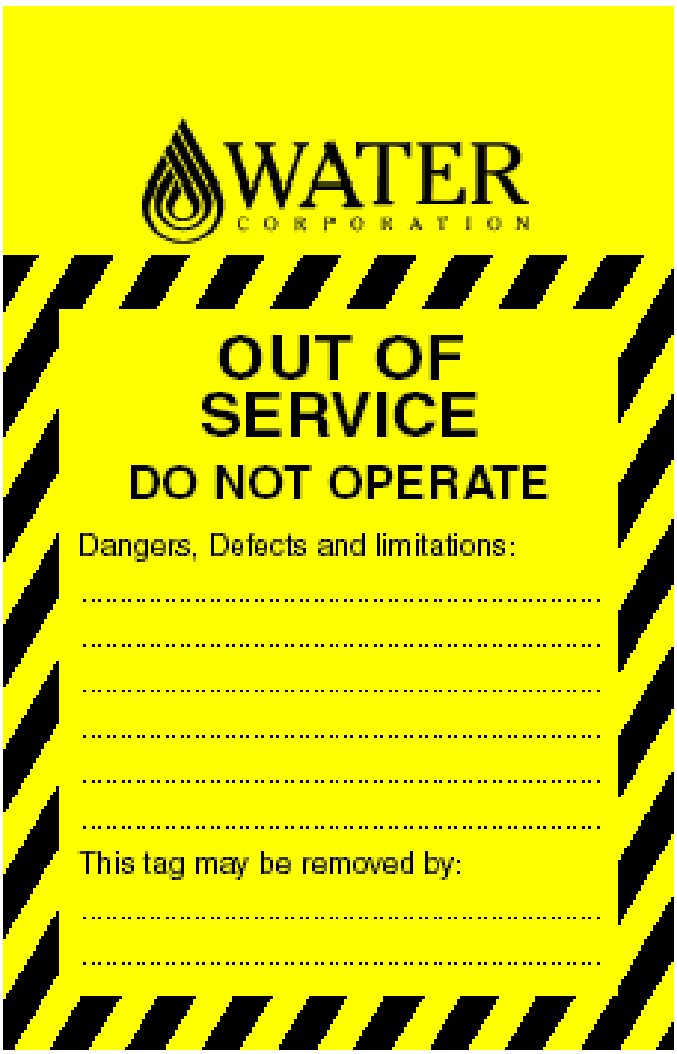
Colour: **Red & Black on White**

Front **Back**

OUT OF SERVICE TAG:

Colour: **Yellow Background**

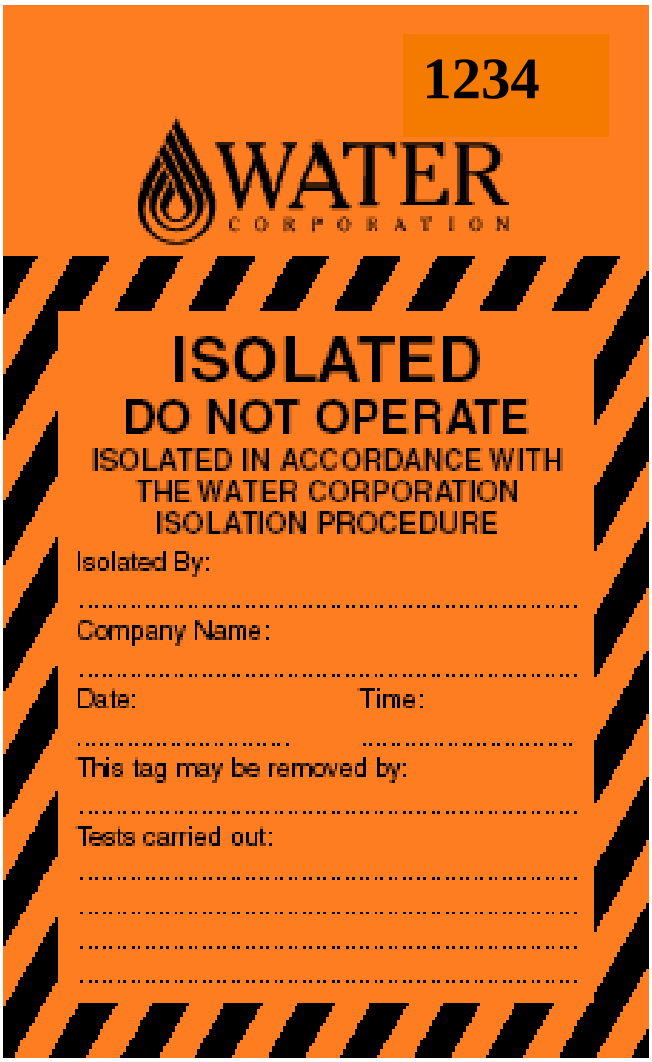
Front **Back**

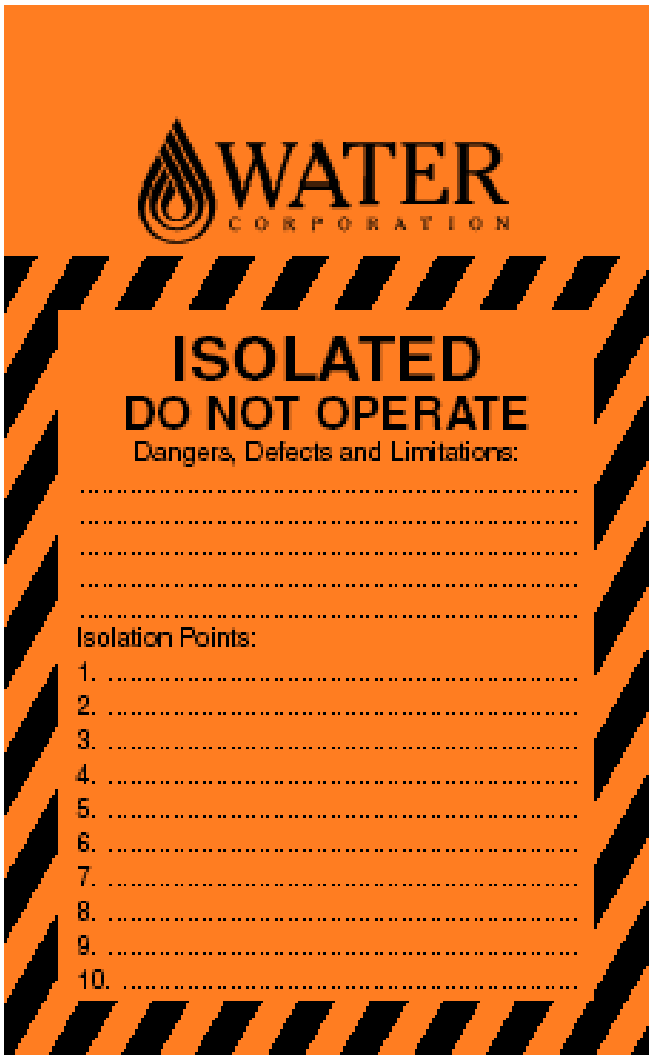


ISOLATED TAG:

Colour: **Fluorescent Orange Background**

Front **Back**

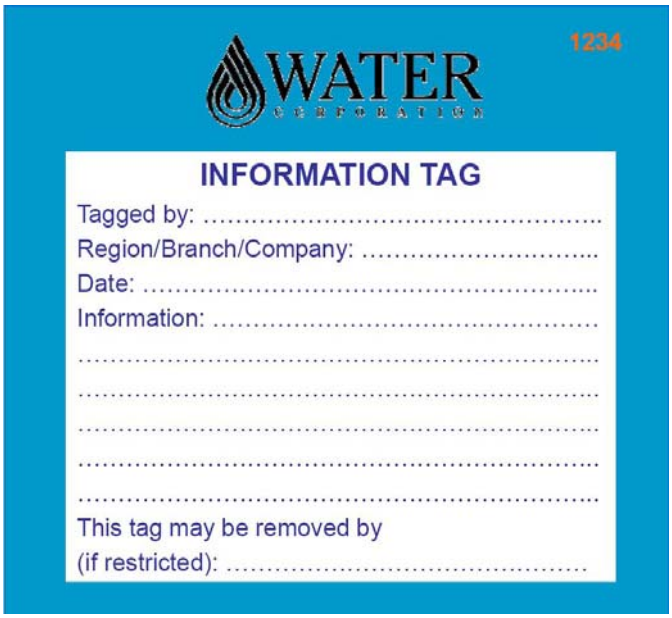




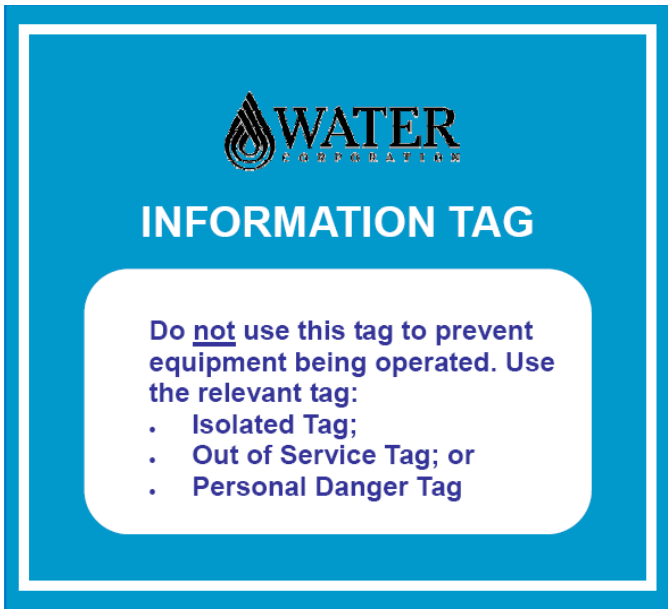
INFORMATION TAG:

Colour: **Blue on White Background**

Front



Back



GUIDANCE NOTES and EXAMPLES:

This Section is intended to provide examples of Isolations and application of the Control Measures.

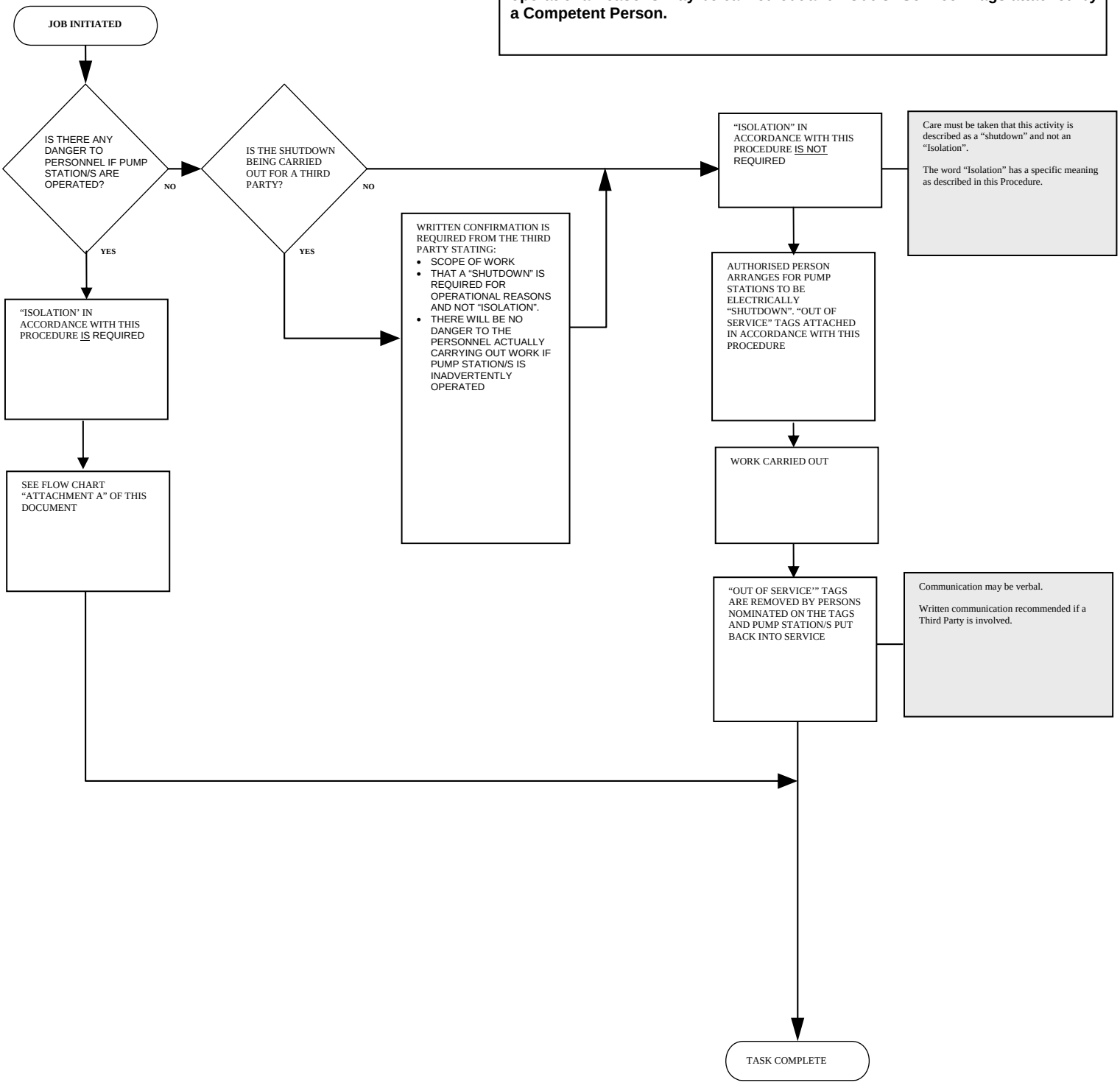
The following are examples only. It is intended that before any Isolation is undertaken Job Planning is to include:

- A Risk Assessment AND.
- A Job Safety Analysis AND
- A thorough assessment of what communications are required between parties involved in the Isolation.

EXAMPLE 1. Application of Tagging & Isolation Procedure

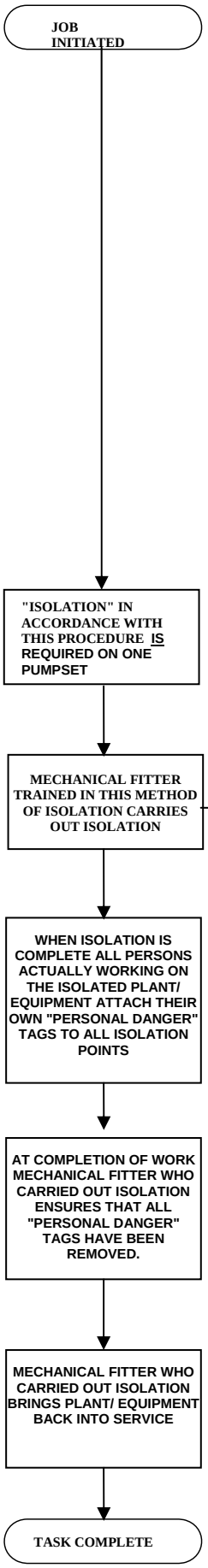
Sewerage Pump Station <u>Shutdown</u> For Operational Reasons

This activity is an example of where <u>Isolation</u> is not required. A <u>shutdown</u> for operational reasons may be carried out and "Out Of Service" Tags attached by a Competent Person.



EXAMPLE 2. Application of Tagging & Isolation Procedure (Simple/Routine isolation)

Sewerage Pump Station pump to be de-ragged by a Mechanical Fitter assisted by a Trades Assistant.



A Job Safety Analysis has shown this activity to be a simple, low risk, routine Isolation.
The work to be carried out requires the electrical Isolation of one pumpset where Isolation cannot be achieved by a plug-out arrangement
The Mechanical Fitter trained to Isolate by an approved method carries out the Isolation (see Section 7.2.6).
The Mechanical Fitter and the Trades Assistant attach their own "Personal Danger" Tags before commencing work
The attachment of an “Isolated" Tag is not required because the limitations in Section 6.2 will be observed (including that the person carrying out the simple/routine isolation is part of a small group of persons that will work on the plant).

Where work is to be carried out on mechanical components of Plant/ equipment but not on the electrical components of the equipment, electrical testing by an electrician may not be required.

Testing to disprove the presence of the hazard shall be conducted utilising an approved method suited to the purpose.

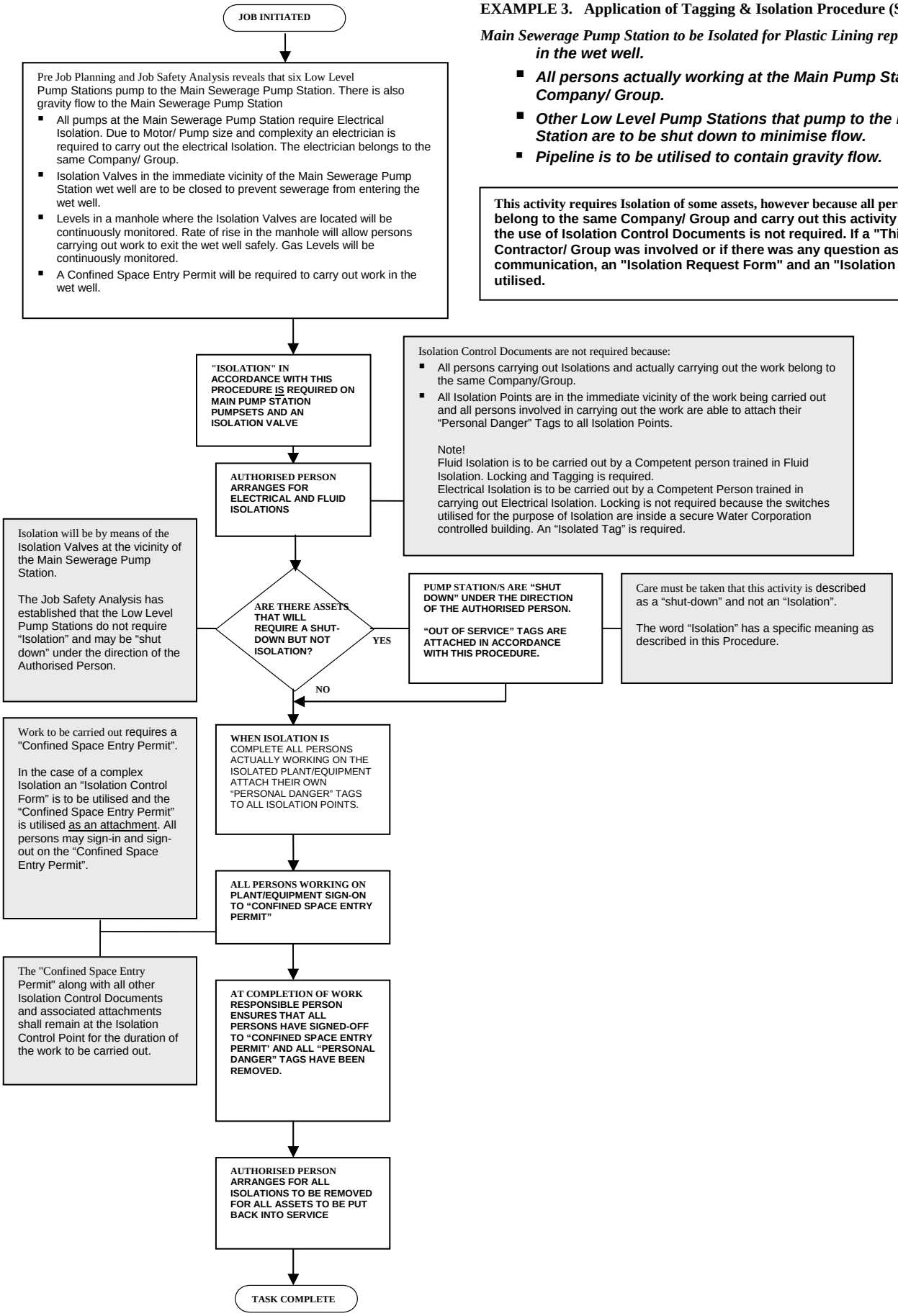
The approved method shall comprise switching off by means of control switches and associated load isolating switches or
circuit breakers followed by use of manual test switches in accordance with an approved procedure to ensure that the Plant/ equipment that requires Isolation has been correctly identified.
Work may proceed after the attachment of a "Personal Danger" Tag by all persons actually carrying out work on the Isolated Plant.
This method shall only be utilised by a Competent Person trained in the test method approved for the type of Plant to be worked on (See section 7.2.6).

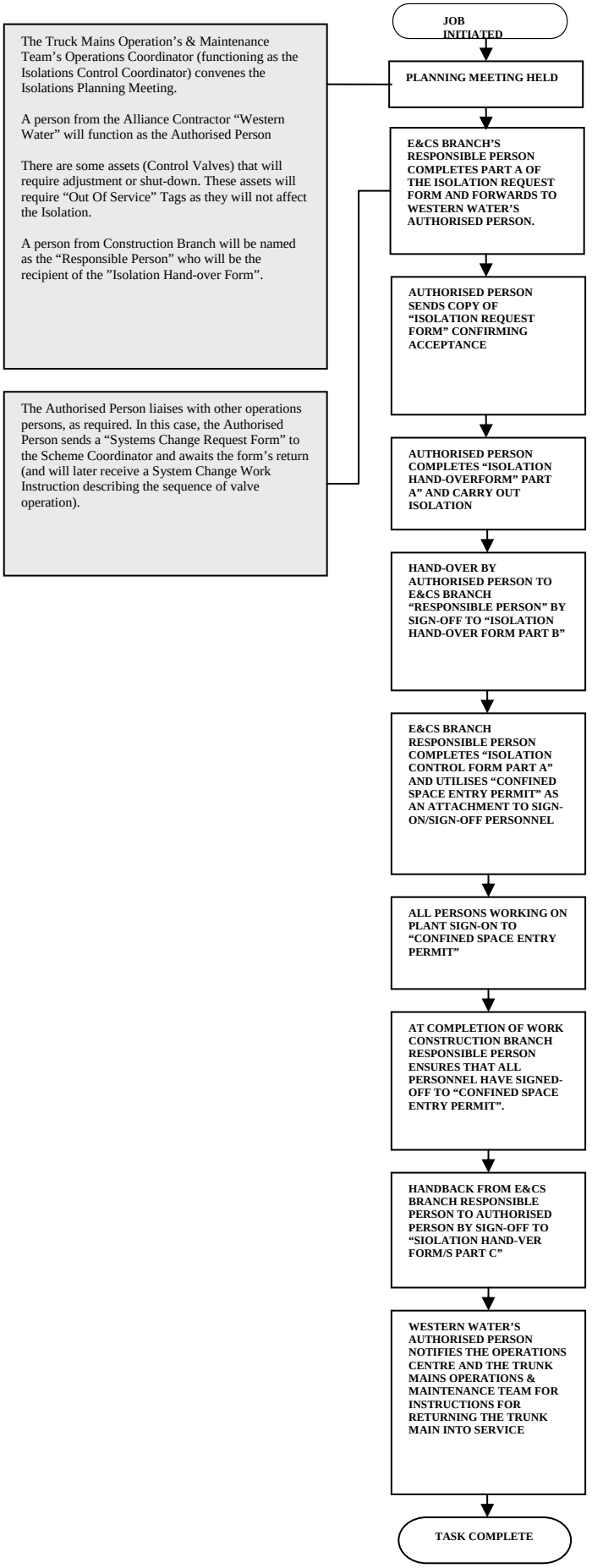
EXAMPLE 3. Application of Tagging & Isolation Procedure (Simple/Routine isolation)

Main Sewerage Pump Station to be Isolated for Plastic Lining repairs in the wet well.

- ***All persons actually working at the Main Pump Station belong to the same Company/ Group.***
- ***Other Low Level Pump Stations that pump to the Main Sewerage Pump Station are to be shut down to minimise flow.***
- ***Pipeline is to be utilised to contain gravity flow.***

This activity requires Isolation of some assets, however because all persons belong to the same Company/ Group and carry out this activity on a regular basis the use of Isolation Control Documents is not required. If a "Third Party" Contractor/ Group was involved or if there was any question as to the adequacy of communication, an "Isolation Request Form" and an "Isolation Handover Form" would be utilised.





EXAMPLE 4. Application of Tagging & Isolation Procedure (High Risk)

Water Corporation Engineering & Construction Services Branch (E&CS) have constructed a new 900mm Water Trunk Main which is to be "cut in" to an existing Trunk Main System.

This is a 'Complex Isolation' on "Geographically Distributed, Unsecured Assets" involving multiple (four) parties.

- **The assets are <u>owned</u> by Surface Water Operations Section of Water Production Branch and managed by their Trunk Mains Operation and Maintenance Team**
- **System access to the Integrated Water Supply System is controlled by the Operations Centre**
- **Operations <u>and</u> Maintenance responsibility for Southern Trunk Mains is the responsibility of the Alliance Contractor "Western Water".**
- **The Water Corporation's E&CS Branch will be carrying out the "cut in" to the existing Trunk main.**

'COMPLEX ISOLATION' PLANNING MEETING
SAMPLE AGENDA/MINUTES TEMPLATE

MEETING DATE: _____

ATTENDEES: _____

DESCRIPTION OF JOB: _____

ITEM	COMMENTS/ACTION
Scope of work confirmed	
Parties and their roles clarified	
Time/date/duration that access to Plant is required	
Identity of 'key people' (and contact details) • Authorised Person • Responsible Person • Isolation Control Coordinator (if required) • Other	
Standard of isolations proposed (e.g. single, double, locks or caps) (and isolation points proposed – if known at this stage)	
Succession Plan (in case of change to timing, key people, scope of work etc)	

ITEM	Comments/Action
Confirmed Contractor has access to forms/tags	
Use of Active Tag Register(s)	
Is formal training to be arranged in the Tagging & Isolation Procedure (instructor-led or on-line)?	
Is on-the-job instruction required in the Tagging & Isolation Procedure (Only available to short term contractors where access to formal training is not practicable. In the case of a 'Complex Isolation', instruction should be delivered by the Level 3 trained Responsible Person).	
Proposed management process (if isolations will involve *multiple* operations groups, or if isolations are for access by *multiple* independent parties)	
Other	

(Refer to instructions over page)

YES N/A

☐ Isolation points
- what isolations are involved (and associated locks, caps, tags fitted by the party carrying out the isolations)
- have isolations been completed

☐ The instructed worker is not permitted to -
- carry out isolations themselves
- interfere with isolations
- remove another person's tag or lock

☐ or ☐ Personal Danger Tags the instructed worker will be fitting –
- where will the instructed person be fitting the tags (to what)
- the tag is personal (each 'at risk' person fits and removes their own tag)
- tag to be removed when work is completed/suspended/end of day

☐ or ☐ Out of Service Tags (OOS) the instructed worker will be fitting –
- where are they to be fitted (to what)
- used when Danger Tags are removed (if plant is to remain OOS)
- only one tag required at each isolation (not one per person in the job crew)
- Active Tag Register to be updated (if tag will be in place overnight or longer)

☐ or ☐ Isolation Control Form (or Confined Space Entry Permit)
- signing on/off the Form has the same effect as fitting/removing their own Danger Tags to each point of isolation listed on the isolation forms
- if they fail to sign off, the asset cannot be brought back on-line

☐ or ☐ additional related instructions (describe, and strike out unused lines)

_____
_____
_____

Instructor _____ *name (print)* _____ *signature*

I have been instructed in Tagging and Isolation as indicated above, and understand instructions given are specific to this job and have no portability whatsoever.

Date	*Name (print)*	*Signature*	*Company (employer)*
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Instructions for use of this checklist:

1. On-the-job instruction in the Corporation's Tagging & Isolation Procedures (in place of formal training) has the following restrictions –
   - It is only available to short term contractors (if accessing formal training is impractical)
   - It is only available to personnel working on isolated plant (not to persons carrying out isolations, or to the Authorised Person, Responsible Person or Isolations Control Coordinator for a complex isolation)
   - Instructions are to be customised to match the circumstances of the particular job, and the tags etc that will be used.
   - The instruction must be given by a person trained to Level 2 in the Tagging & Isolation Procedures in the case of a simple/routine isolation, or trained to Level 3 in the case of a 'Complex Isolation'.
   - The instruction has no portability whatsoever (within that site, or to another).

2. The Instructor completes the "tick boxes" to record items that have been covered in the instruction (or that were not covered as they were not applicable). The Instructor and instructed persons are to sign the acknowledgement at the bottom of the form.

3. Where practicable, provide each instructed person with a copy of the 'Tagging & Isolation Quick Reference Card'.

4. Prior to work commencing, the Instructor is to check the correct use of tags used by the instructed persons (not applicable where persons are simply signing onto the Isolation Control Form or Confined Space Entry Permit and not using tags).

TAGGING & ISOLATION QUICK REFERENCE SHEET (Procedure WC-OSH 109)

TAGGING (section 6 in Procedure)

PERSONAL DANGER TAG

- Attach a "Personal Danger" Tag at each isolation point if there is **risk of injury to you** – the person actually working on the equipment.
- Each "at risk" person is to affix their own "Personal Danger" Tags to the designated Isolation Point/s.
- Equipment affixed with a "Personal Danger" tag must not be operated.
- A "Personal Danger" Tag is to be removed by the person who affixed it (Refer to Tagging and Isolation procedure if person unavailable).
- Remove your "Personal Danger" tag at the end of each day (and replace with an "Out of Service" tag if required)

ISOLATED TAG

- An "Isolated" Tag indicates that the equipment has been isolated on behalf of others.
- An "Isolated" Tag is **not** a subsitiute for a "Personal Danger" Tag
- Equipment affixed with an "Isolated" Tag must not be operated.
- If the tag remains in place for longer than one shift, the details on the tag must be placed on the Active Tag Register.
- Only the nominee (person or occupational group) identified on the tag may remove it.

OUT OF SERVICE TAG

- An "Out of Service" Tag is placed on plant which is not to be operated due to –
  - A fault
  - For operational reasons
  - For visual inspection without risk to personnel
- Equipment affixed with an "Out of Service" Tag must not be operated (except, where necessary, by the person doing the repair of a fault for which the tag was affixed).
- If the tag remains in place for longer than one shift, the details on the tag must be placed on the Active Tag Register.
- Only the nominee (person or occupational group) identified on the tag may remove the tag.

INFORMATION TAG

This tag does not prevent equipment operation.

The tag provides temporary miscellaneous information (normally of an operations nature, but may be a precaution).

Only the nominee (person or occupational group) identified on the tag may remove it.

If used in conjunction with a "Danger", "Out of Service" or "Isolated" tag, do not obscure that tag.

ISOLATION / LOCKING / CAPPING (section 7 in Procedure)

1. Persons carrying out isolation to be competent and authorised. Other than Operations & Maintenance Alliance Contractors, contractors are to have written authorisation to isolate Water Corporation plant.
2. Electrical System isolations are restricted to Licensed Electrical Workers other than for
   - ELV systems
   - LV plug-in systems
   - Routine work on LV non plug-in systems where work is not on electrical components (where trained and working to a specific Work Instruction that incorporates a test method to prove the isolation effective).
3. For fluid and gas systems apply the following hierarchy as far as practicable
   a) create an air gap by removal of a component (or use a physical barrier such as a dead plate), or
   b) double valve isolation, or
   c) single valve isolation (confirming the valve integrity).

The person carrying out the isolation is to fit locks or caps to isolated valves as follows:

	Valves in secure area	Valves in unsecured area
Single Isolation	**Lockout recommended (or capping if valves are 1. In immediate vicinity of work, and 2. In direct visual range)**	**Lockout required**
Double Isolation	**No specific lockout/capping requirements (conduct risk assessment)**	**Lockout required (or capping permitted if valves are 1. In immediate vicinity of work, and 2. In direct visual range)**

OVERVIEW OF THE TAGGING AND ISOLATION PROCESS

NOTE: 1. References to sections are the relevant section of WC-OSH 109
2. 'Complex' Isolations are typically those involving numerous isolation points or three or more parties or a potentially unclear scope of work or handover of a Geographically Distributed Unsecured System

Job stage	Simple/Routine Isolations	'Complex' Isolation (Note: this process is adjusted if there are multiple Authorised Persons or Responsible Persons. Refer to Section 8.9)	Geographically Distributed Unsecured System Isolation (not involving a handover)
Prior to work commencing on Plant	Personnel are trained in the Procedure **Section 10**	Personnel are trained in the Procedure **Section 10**	Personnel are trained in the Procedure **Section 10**
		Preparations are made: • Authorised Persons appointed • Responsible Person appointed • Isolations Control Coordinator appointed (if required) • Isolations planning meeting held • Isolations Request Form submitted by, and returned to the Responsible Person **Section 8**	
	Isolations are carried out to standards of the Procedure (with locking/capping if required) **Section 7**	Isolations are carried out to standards of the Procedure (and locking/capping if required) **Section 7**	Isolations are carried out to standards of the Procedure (with locking/capping if required) **Section 7**
	Isolated tags are fitted (if required) **Section 6**	An Isolated tag is affixed at each isolation point, and the tag references an associated Isolation Handover Form number. **Section 6**	Isolated tags are fitted (if required) **Section 6**
		An on-site hand-over from the Authorised Person to the Responsible Person occurs, and the Isolation Handover Form is provided **Section 8**	
Work on Plant is in progress	Each 'at risk' person that will work on isolated plant affixes their own Personal Danger Tag at each isolation point **Section 6**	Where practicable, each 'at risk' person that will work on isolated plant affixes their own Personal Danger Tag at each isolation point, or Where this is not practicable, personnel sign onto an Isolation Control Form held by the Responsible Person **Sections 6 + 8**	Where practicable, each 'at risk' person that will work on isolated plant affixes their own Personal Danger Tag at each isolation point, or Where this is not practicable, personnel sign onto an Isolation Control Form held by the Responsible Person **Section 9**
	Personal Danger tags are removed and replaced with an Out of Service Tag while personnel are not at risk (e.g. end of day or shift). Personal Danger tags are reinstated prior to work recommencing. **Section 6**	Personal Danger tags are removed and replaced with an Out of Service Tag while personnel are not at risk (e.g. end of day or shift), or personnel sign off the Isolation Control Form where the form is utilised. Personal Danger tags are reinstated prior to work recommencing, or personnel sign onto the Isolation Control Form. **Sections 6 + 8**	Personal Danger tags are removed and replaced with an Out of Service Tag while personnel are not at risk (e.g. end of day or shift), or personnel sign off the Isolation Control Form where the form is utilised. Personal Danger tags are reinstated prior to work recommencing, or personnel sign onto the Isolation Control Form. **Section 9**
	If Out of Service or Isolated tags are in place overnight or longer, they are logged on an Active Tag Register. **Section 11**	If Out of Service or Isolated tags are in place overnight or longer, they are logged on an Active Tag Register. **Section 11**	If Out of Service or Isolated tags are in place overnight or longer, they are logged on an Active Tag Register **Section 11**
Work on Plant is completed	Personnel remove their own Personal Danger Tags **Section 6**	Personnel remove their own Personal Danger Tags (or sign off the Isolation Control Form if the Form were utilised, and the form is cancelled). **Sections 6 + 8**	Personnel remove their own Personal Danger Tags (or sign off the Isolation Control Form if the Form were utilised, and the form is cancelled). **Section 9**
	Isolated tags and locks/caps are removed (if fitted)	A hand-back from the Responsible Person to the Authorised Person occurs, including the return of the Isolation Handover Form. **Section 8**	Isolated tags and locks/caps are removed (if fitted)
	The removal of Isolated Tags and/or Out of Service tags is logged on the Active Tag Register (if relevant). **Section 11**	The Authorised Person arranges removal of Isolated tags, and locks/caps	The removal of the Isolated Tags and/or Out of Service Tags is logged on the Active Tag Register (if relevant). **Section 11**
		The removal of the Isolated Tags and/or Out of Service tags is logged on the Active Tag Register (if relevant). **Section 11**	
		Forms and attachments that were utilised are retained as a record. **Section 11**	Forms and attachments that were utilised are retained as a record. **Section 11**

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WATER CORPORATION