HEALTH, SAFETY AND WELLBEING DOCUMENT

Permit to Work Process

DOCUMENT INFORMATION SHEET
TITLE: Permit to Work Procedure and Certificates
PURPOSE AND SCOPE: The purpose of this procedure is to describe the process to authorise specific people to carry out potentially high-risk work, at a specific site at a specific time, and sets out the controls required to complete the work safely. This procedure applies to all permitable activities undertaken on Watercare assets by contractors or Watercare personnel.
DOCUMENT VERIFICATION
Accountable: Chief Operations Officer
Responsible: Head of Health, Safety and Wellness
Consulted:
Permit to Work Stakeholder Group
Permit to Work – trial participants
Informed: WSL Operations, WSL Infrastructure, contractors training providers
Procedure and writable forms (digital and paper) to be available for internal use via OurPlace intranet and external use via https://www.watercare.co.nz/About-us/Who-we-are/Health-safety-and-wellbeing/Control-of-work-system

Amendments	
Version #	*Date*
3.0 – Update following audit recommendations	20 May 2017
3.1 – Updated document to align with Watercare Control of Work system and Permit to Work Process.	14 August 2019
3.2 – Updated to include AON 1 hour fire watch requirement	Sept 2020
4.0 – 2023 Update following independent review – Main NZ Ltd & Telarc.	Dec 2023

Contents

Purpose

This procedure outlines Watercare's requirement to have formal, written authority to undertake work that we've identified as potentially high risk. It also allows communication about work and work status between those undertaking the work and those overseeing it.

This procedure aims to:

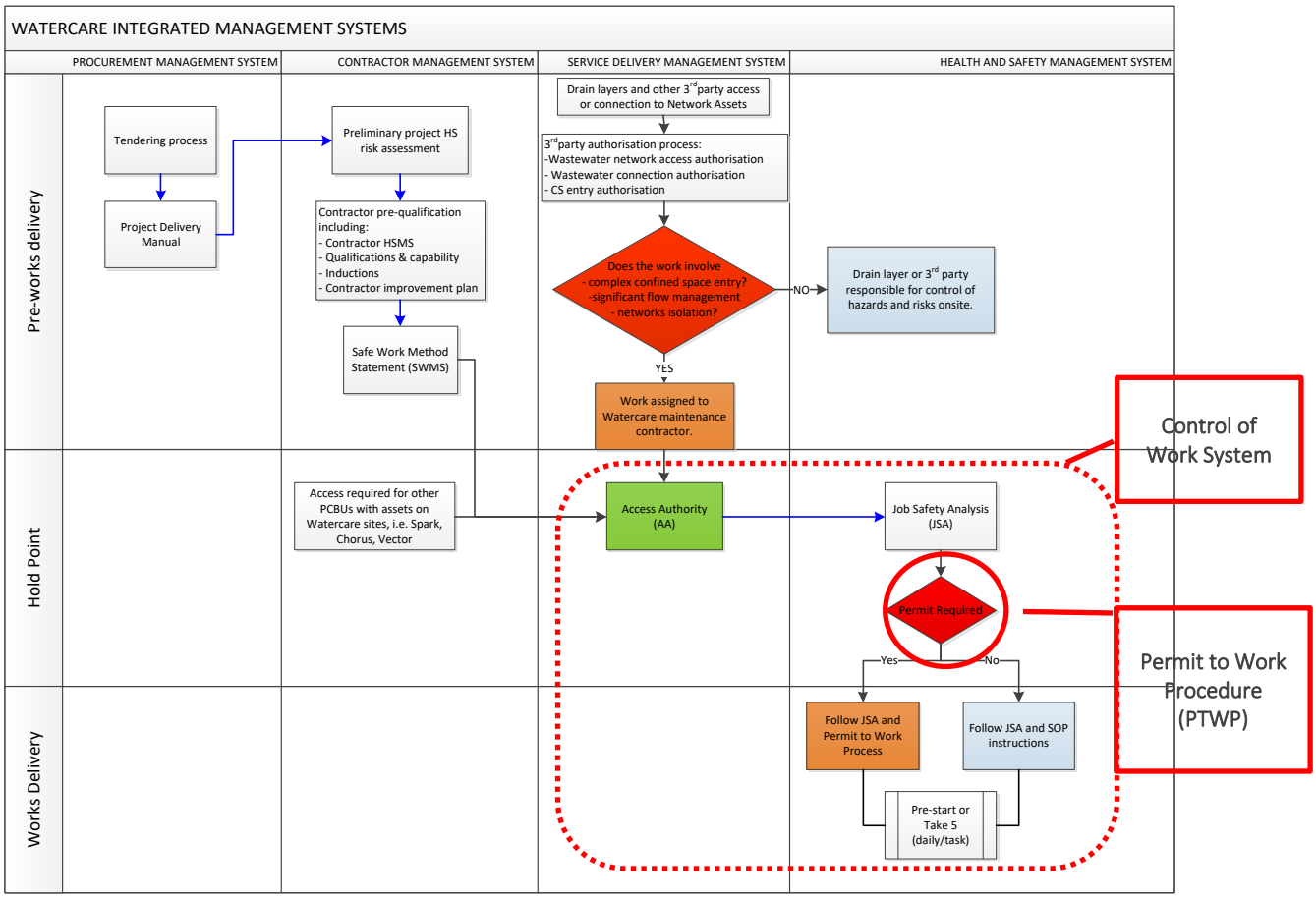
- support workers in identifying and implementing the controls required to reduce risks during significantly hazardous work
- make sure proper authorisation is given for high-risk work
- ensure that job safety analysis and risk assessments for the work are adequate
- make sure people in charge are aware of high-risk work being done in their area of control
- outline the competency required to undertake specific work tasks
- provide a system of recording potentially high-risk work to enable visibility and control of all work
- establish a procedure for the safe handover, suspension and resumption of significantly hazardous work
- provide assurance to the business that high-risk work is adequately controlled.

Scope

This procedure applies to all workers at Watercare sites under our control.

On project sites where control of all works has been formally handed over to the contractor, the contractor and Watercare are expected to operate under the contractor's permit to work process (PTWP). The contractor's PTWP must be included in the contractor's Health and Safety Management Plan (HSMP) and meet or exceed the standards within this procedure. Watercare will retain Person in Charge of a Business or Undertaking (PCBU) oversight through periodic monitoring of the contractor's PTWP.

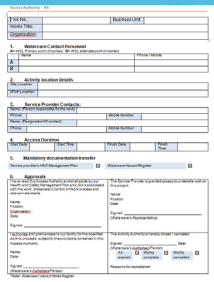
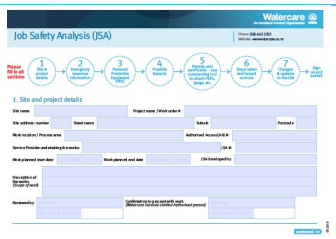
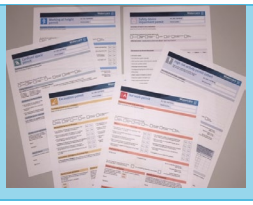
On brown-field sites where Watercare is in control of the site, the governing system will be the Watercare permit to work process (PTWP).


WATERCARE INTEGRATED MANAGEMENT SYSTEMS
PROCUREMENT MANAGEMENT SYSTEM
CONTRACTOR MANAGEMENT SYSTEM
SERVICE DELIVERY MANAGEMENT SYSTEM
HEALTH AND SAFETY MANAGEMENT SYSTEM
Pre-works delivery
Hold Point
Works Delivery
Tendering process
Project Delivery Manual
Preliminary project HS risk assessment
Contractor pre-qualification including:
- Contractor HSMS
- Qualifications & capability
- Inductions
- Contractor improvement plan
Safe Work Method Statement (SWMS)
Drain layers and other 3rd party access or connection to Network Assets
3rd party authorisation process:
-Wastewater network access authorisation
- Wastewater connection authorisation
- CS entry authorisation
Does the work involve
- complex confined space entry?
-significant flow management
- networks isolation?
NO
Drain layer or 3rd party responsible for control of hazards and risks onsite.
YES
Work assigned to Watercare maintenance contractor.
Access required for other PCBUs with assets on Watercare sites, i.e. Spark, Chorus, Vector
Access Authority (AA)
Job Safety Analysis (JSA)
Permit Required
Yes
No
Follow JSA and Permit to Work Process
Follow JSA and SOP instructions
Pre-start or Take 5 (daily/task)
Control of Work System
Permit to Work Procedure (PTWP)

Control of Work System

The Watercare Control of Work System provides the tools and framework for how we manage and authorise work. It's our way of making sure all safety precautions are in place before work starts. The Permit to Work process is an important process within the Control of Work System. For further information refer *Control of Work Manual* and *Appendix A: Control of Work Process Flow*.

The Watercare Control of Work system comprises the following key controls.

Watercare Control of Work system		
Access Authority (AA)		The Access Authority (AA) is the governing document for controlling all works undertaken by our contractors on a Watercare site. It is used to record details about site access, work activities, responsible personnel, associated documentation required and authorisation. The completed AA form must be approved by Watercare prior to work starting on the site. Authority is granted for the duration of the works.
Job Safety Analysis (JSA)		A Job Safety Analysis (JSA) is a procedure that helps integrate accepted safety and health principles and practices into a particular task or job operation for which the AA has been authorised. In a JSA, potential hazards are identified for each step of the tasks and controls recommended for the safest way to do the job. The JSA will identify whether or not a permit to work is required for the portion of the task identified as potentially high-risk work.
Permit to Work Procedure (PTWP)		The permit to work procedure (PTWP) is a set of detailed documents that authorise specific people to carry out potentially high-risk work, at a specific site at a specific time, and sets out the controls required to complete the work safely.
Standard Operating Procedures (SOPs)	(Sometimes referred to as MOPs, or SWMSs) 	A SOP can replace the need for a permit. These SOPs must be developed and authorised (*refer section 1.4*) for use. SOPs are instruction documents for known repeatable works. SOPs are most commonly used for routine operational, maintenance or other activities where works are always performed in a specific sequence or manner.
Basic Risk Assessment (Take 5)		The basic risk assessment is a simple on-site risk assessment that is completed by the workers on site immediately prior to commencing work, then daily, or if conditions change, until the work is completed. Often a Take 5 is used, however whiteboard team assessments and other methods can also be also used. A Take 5 should be used for a pre-start and re-start check for SOP's and JSA's (*refer Control of Work User Manual*).

Permit to work procedure (PTWP)

1.1 Overview

The PTWP documents and authorises potentially high-risk work. It specifies when a permit is required, how to assess the risks, what people need to do when receiving, issuing or working under a permit and what training and competency are required.

1.1.1 Permit to work resources

The PTWP is supported by the following resources:

JSA and/or SOP	Permit Certificates	JSA register
The JSA and/or SOP details the scope of work and the steps required to complete the work. Hazards are identified, risks assessed and controls planned. 	Individual hazard and risk assessment and authorisation forms for the specified high-risk tasks to be undertaken. 	Database for recording AA's JSA's and PTW issue.

1.1.2 Permit to work procedure

When	What	How	Who
Control of Work			
Step 1	Determining the work site and scope	Conversation AA	Watercare Representative and Person in Charge of the Work
Step 2	Completing a job safety analysis	JSA	Person in Charge of the Work
Permit to Work Procedure			
Step 3	Completing the permit certificates and determining the permit risk assessment scores	Task risk assessment Permit certificates	Permit Receiver (PR)
Step 4	Cross referencing of concurrent works and activities Obtain permission to work on Networks / Transmission assets	Permit certificates, JSA register, Work Authority register Contact networks/transmission duty engineers to obtain permission to work on the asset on specified date / time.	Permit Issuer (PI)
Step 5	Issuing a permit	Authorise permit documentation	Permit Issuer
Step 6	Working with a permit	Display permits on JSA Register Communicate and display JSA & permit certificates on site Take 5	Permit Issuer Permit Receiver Person in Charge of the Work and the Work Team
Step 7	Suspending a permit	Update permit certificates and permit to work register	Permit Issuer
Step 8	Revalidating a permit	Validate site controls, update permit certificates and JSA Register	Permit Issuer and Permit Receiver
Step 9	Close-out of a permit	Cancel permit certificates, update JSA Register	Permit Issuer

1.1.3 When a permit to work is needed

A permit to work (PTW) is required for any of the work defined (but not limited to) below.

 **Confined space entry**	All confined space entries unless they have been assessed as low risk (i.e. determined as level 1 using the Watercare *Confined Space Key Requirement- Decision Tree*).
 **Working at height**	Tasks that involve work at height where working at height exceeds 2 metres (measured from the lowest point of the worker's body). Excludes: Work less than 5 metres when working from a scaffold erected by a competent person or from a scissor lift, a boom lift or a permanent ladder where the fall protection is permanently engineered into the plant or equipment.
 **Excavations**	Working within trenches or excavations deeper than 1.5 metres.
 **Hazardous energy**	The task has the potential to release **hazardous energy** (pressure, electrical, mechanical, chemical, hydraulic, radiation or product). **Excludes:** Watercare-approved self-isolation (within one working shift) completed for specific plant, equipment under the self-isolation process or isolations covered by an approved SOP that allows work to be carried out safely (four or less isolation points).
 **Safety device impairment**	Where the work will **disable or affect emergency systems** (emergency monitoring systems, firefighting, escape or rescue systems) or **safety-critical elements**. **Excludes:** Routine testing of devices where the devices are not disabled.
 **Explosive atmosphere areas**	Any work in a **explosive atmosphere area** (unless the task is covered by an approved SOP specific to the area). These are areas that encompass explosive atmosphere zones refer: *AS/NZS 60079.10.1:2009 Classification of areas – Explosive atmospheres*
 **Hot work**	Any work that may produce a source of ignition. **Excludes:** Workshops with hot-work controls already in place. Tasks covered by an approved SOP, e.g. flame sterilising of sample taps.
Other high-risk work	Any other tasks where the risk assessment generates a controlled risk score in the red zone of the job safety analysis (JSA).

1.2 Resources

1.2.1 Personnel

Permit Receiver (PR)

The PR plans the work activities and identifies the hazards, assesses the risks and implements controls to enable high-risk work to be undertaken in a safe manner. Communicating and co-ordinating with both the Work Team and the Permit Issuer, the PR ensures that risk controls are maintained and verified throughout the course of the work.

The PR must have relevant work experience and knowledge of the type of work being undertaken, the risks involved with the task and, where required, working knowledge of assets.

Managers must make sure there is adequate coverage of competent PRs in the areas under their control. Managers must ensure training requirements are detailed on individual training plans.

Permit Issuer (PI)

The PI ensures that work activities needing permits are planned and co-ordinated to avoid risks caused by simultaneous activities. This co-ordination is achieved by having one person control the issue and return of all permits for a defined area.

The PI must have knowledge of the risks that may affect the work being undertaken and working knowledge of the assets involved.

Managers must make sure there is adequate coverage of competent PIs in the areas under their control. Managers must ensure training requirements are detailed on individual training plans.
For more information on our training and development systems, see *HS Toolkit – Engaging with and training our workers.*

Safety Observer (SO)

The SO (includes safety stand-by person, spotters, fire watch) is required in the following circumstances:

- for all confined space entries
- for hot work
- for excavations
- at any time when requested by the PI or PR.

Isolation Authorisers (SAPs and APs)

Senior Authorised Person (SAP) and Authorised Person (AP) are required for specific Watercare isolations. Refer to the Watercare *Isolation procedure*.

Networks/Transmission Duty Engineers

The duty engineers are responsible for operation and activities on network or transmission assets. They are tasked with checking the networks for concurrent risks and activities that may impact the work, and granting Permit Issuers the authority to approve permits for working on these assets within a specified date and time period.

1.2.2 JSA register.

The electronic JSA register allows the PI to cross-reference permits effectively with other planned and active works, to decide whether or not it is safe for a job to be carried out at the site.

1.2.3 Work approval register

All sites will have a work approval register (previously known as the permission to work register) where all work activities and self-isolations are recorded.

1.2.4 Permit station

Large operational sites may also have a permit station, which is a dedicated physical area for the administration and issuing of permits. Permit certificates should be displayed at permit stations and be recorded in the electronic JSA Register. Permit stations may also be used to store associated equipment (e.g. PPE, locks, tags, isolation equipment).

1.2.5 Exceptions and standard operating procedure (SOP) approval process

Some permitable activities (*ref 1.2*) identified in this permit to work process may be more effectively controlled by an approved standard operating procedure (SOP) than a JSA and a permit to work. For these identified exceptions, a SOP can be developed and work conducted against the SOP rather than a permit. Follow the process below for PTW exceptions:

- The relevant representative for the work, in consultation with workers, conducts a risk assessment and identifies / develops the SOP.
- The competency of personnel and the equipment required to undertake the work is detailed in the document, as well as the requirement to complete a JSA for the task.
- The relevant business unit HSW business partner and Permit Issuer are engaged to review and confirm the developed document is appropriate to manage the foreseeable health and safety risks.
- The final documents are then submitted to the Watercare head of health, safety and wellness and site/asset manager.
- The Head of health, safety and wellness and site/asset manager reviews the documents and considers their acceptability for a PTWP deviation to be approved.
- Once approved the SOP must be added to the PTW Deviation register. The PTW deviation register should be maintained by the BU or asset owner who would normally authorise and issue the permits, ensuring all documents pertaining to their hazards and risk are controlled in one place.

1.3 Issuing a permit

The PR is responsible for completing the work details and risk assessment portions of the permit certificates, the JSA and any supporting documentation.

The permit certificates must be submitted in advance of the planned work to allow the PI to give it appropriate consideration. The PI can refuse to issue a PTW if they feel circumstances, including current permit workload, may compromise the safety of people, plant, processes or the environment. The PR must plan for the work so that the PI has a suitable amount of time to consider the application (ideally five working days). For large, complex projects, the length of notice should be decided locally in discussion with the relevant project workers.

Step 1 – Determining the scope of work

The PR must determine the scope of work in conjunction with the appropriate people (e.g. those asking for the work to be done). The scope should contain sufficient detail to allow for recognition of potential hazards, including those that may arise from concurrent activities.

Step 2 – Completing a permit certificate

Hazard identification must be a robust and thorough process, following the assessment process on the JSA. Specific hazards and risk controls are also identified on the permit certificates. These enable the PI or PR to double-check hazard controls against a set of typical controls and identify any shortfalls. They are not intended as a tick list to replace proper consideration of hazards and the completion of a JSA.

Before deciding on hazard controls, consideration must be given to safer alternatives, either in terms of the timing or the intended method of completing the work. Watercare hazard control key requirements and the area hazard register should be used as a source of hazard and control information.

In broad terms, hazard controls should be selected on:

1. The ability to eliminate risks wherever possible (e.g. moving equipment to ground level versus working on it from height)
2. The possibility of isolating people from potential harm (e.g. isolating energy sources)
3. The safety of the actual tasks (e.g. spark containment during welding)
4. The safety of individuals (i.e. PPE to be worn or used).

The permit certificate must be completed before the PTW authorisation can be applied for. The completed permit certificates must be attached to the JSA or SOP.

Step 3 – Determining the risk assessment score

Every permit certificate must have a raw and residual risk assessment score[1] determined by the PR and endorsed by the PI. The risk score identifies the overall degree of risk involved in the job and subsequent level of authorisation and supervision.

The chart below outlines the work supervision and permit authorisation requirements based on the residual risk assessment score.

Residual risk assessment score	High (4-5)	Medium (3)	Low (1-2)
Required controls	PI to authorise permits. Site/Asset manager to authorise JSA PI must view the site and verify controls with the PR prior to work starting.	PI to authorise permits	PI to authorise permits
Permit Receiver Supervision	PR must be at the job at all times.	Absences from the job site of 1–2 hours acceptable at the PI's discretion. Must be contactable at all times.	Absences from the job site of 2–4 hours acceptable at the PI's discretion. Must be contactable at all times.
Simultaneous permits	PR cannot be responsible for any other permits.	PR can be responsible for one orange-level permit and one green-level permit.	PR can be responsible for up to three green-level permits.

Step 4 – Cross-referencing

The objective of a cross-reference of concurrent works and activities is to make sure no interaction takes place between work activities that might endanger the health and safety of workers or others. The JSA register and the permit station enables PIs to evaluate active and suspended permits and any other work in the area.

The PI must be aware of potential interaction when issuing different permits on the same piece of equipment or system or where there may be potential conflict with adjacent work activities. Such situations must be minimised by careful planning and suitable precautions before issuing permits.
Where work may affect other stakeholders, the PI must make sure they are notified.

[1] Risk scores are determined using the risk matrix on the JSA.

For work on networks or transmission assets, the PI must obtain permission from the duty engineer before approving work permits. The PI must clearly communicate the work being undertaken under the permit, the residual risk and the date and time window during which the work is planned. The duty engineers will check for concurrent activities or risks on the networks. Any changes must be communicated by the PI to the duty engineers.

Step 5 – Issuing a permit to work (PTW)

Prior to issuing a PTW, it needs to be authorised by the PI. The PI must be trained for permit issuing. Authorisation shows the PI is satisfied the necessary precautions are being taken to control the work. Where the risk assessment score has determined additional authorisation is needed, the appropriate manager must co-authorise the permit.

Following completion of all parts of the permit certificates, the PTW can be issued. Any field on the PTW not applicable to the job task must have "N/A" in the field.
The PI must inform affected stakeholders that the PTW has been issued.

No one can issue a permit to work for work they will be carrying out themselves.

Issuing a permit remotely

Face-to-face communication between PI and PR is recommended and must be used wherever possible. However, there may be situations where this is not practical (for example, work on remote sites or in an emergency situation where timely assistance from emergency services is not available).

In these instances, other measures shall be taken to verify that hazards and risks are identified and adequately communicated. Where possible the use of technology should be considered to improve communications between all parties (such as video conferencing).

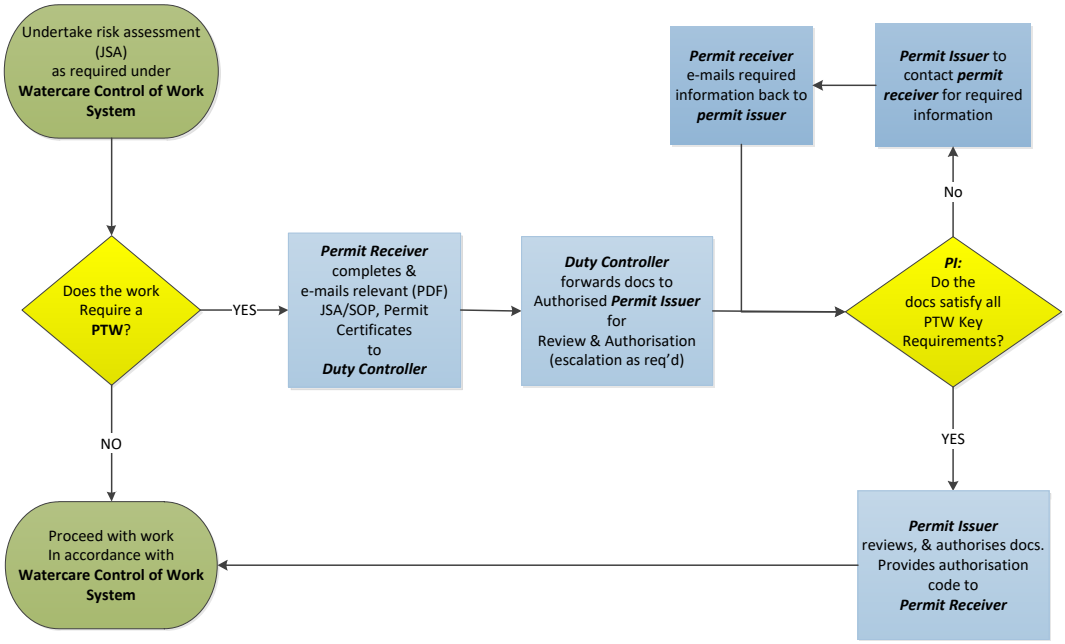
A permit can ONLY be issued remotely if ALL the following criteria are satisfied:

- the permit residual risk assessment score is a 3 or less
- the PI knows the site/asset or has reliable drawings and site data
- the PI has a knowledge of the task and activities to be permitted
- the Site/Asset manager confirms remote permitting is appropriate

This is the process for issuing a permit remotely.

1. The PR completes the JSA and permit certificates, taking into account the site conditions and referring to the site operators or control room for additional information as required
2. The PR phones the PI and communicates the task, risk assessment and proposed controls.
3. The PR takes a photo (using phone or iPad) of completed JSA and Permit certificates and sends it to the PI.
4. The PI reviews the documentation and either proposes additional controls (back to step 2) or authorises the permit by providing the PR with a unique authorisation code.
5. The PR confirms their understanding of the permit conditions and their ability to comply with these conditions by signing the permit and writing the PI authorisation code on their copy.

REMOTE PERMIT TO WORK - PROCESS FLOW



Step 6 – Working with the PTW

Work can be done only within the constraints of the permit certificates. Should conditions change that make the permit certificates invalid, the PR must discuss the requirements with the PI. Any changes must be considered with the same rigor as the original permit application. If approved, the changes must be updated on the permit certificates and JSA. If the changes are not approved, the work must not go ahead until a new permit certificate has been raised and authorised.

The PR must discuss the conditions of the permit certificate with the workers doing the job. The PR must abide by the supervision requirements determined by the risk assessment.

Step 7 – Suspending the PTW

The PTW must be suspended in the following circumstances:

1. When work has stopped, but the job is not complete and a different PR will continue the work (e.g. work carried out during a single shift only or when waiting for materials or services)
2. During any handover of the site to emergency services
3. At the discretion of the PI or PR.

In certain circumstances, it may be appropriate to cancel the permit certificate and implement a secure long-term isolation procedure. A new isolation permit must be raised before removing long-term isolations.
In the event of an emergency evacuation, the emergency response takes priority over completing 'paper work'. Permits will not need to be noted as suspended in the JSAJSA Register. However, all permit certificates will need to be revalidated after emergencies to make sure conditions haven't altered.

Step 8 – Revalidating the PTW

Before starting work following a suspension, the permit certificates must be revalidated.
The PI and PR must make sure the conditions of the permit certificates are still valid.
Certain permit certificates can be revalidated up to five times. Should work extend beyond this, the PTW must be cancelled and a new permit certificate raised.

There is no time restriction on a suspended PTW, but revalidation is at the discretion of the PI.

Step 9 – Close-out a PTW

The PTW shall be closed-out by the PI:

1. On completion of the job
2. Following the maximum five revalidations
3. If a dangerous situation arises or an uncontrolled hazard is identified.

The PR, in applying for the close-out, is making a statement that the worksite has been left in a safe condition, and the PI has to be satisfied of this before they accept the completed permit certificates. This may include a worksite inspection.
PTWs must not be closed-out unless all isolations relating to the permitable work have been removed, disabled safety-critical devices have been reinstated and checks have been made to ensure their operation.
The PI must inform stakeholders the permit has been closed-out.

1.4 Isolations

- Isolations must be undertaken following the Watercare ***Isolation procedure***.

A self-isolation (LOTO) can be used by authorised Watercare staff where the work is being done under a SOP or where the risk assessment score is 3 or less.

A remote isolation certificate is required where a self-isolation impacts on or is affected by concurrent works being carried out in the field. Authorisation is permitted by the PI not present at the location of the work where the work is being done under a SOP or where the risk assessment score is 3 or less.

The PI must still verify that they are satisfied safety precautions are adequate before remotely authorising the PTW. The PI must also update the JSA Register with the permit details and perform a cross-reference (refer section 1.5, Step 4). The PR must display the remote isolation certificates at the site and communicate to all personnel affected. The PR must also provide a copy to the PI at the earliest opportunity.

2 Monitoring and review

Auditing is an integral part of managing the PTWP. It is a documented activity that verifies that the requirements of the system have been established, they have been documented and they are effective.

Auditing requirements include:

1. Monitoring by permit issuers – Permit Issuers must monitor the first permit of new Permit Receivers. This is to ensure the PR understanding, communication and implementation of the PTWP. Thereafter permit issuers should monitor a minimum of 1 in every 10 permits personally issued OR a minimum of 1 per month (if less than 10 issued in the month). The monitoring must be recorded in the PIs audit in iCare. Key checks are:
    a. Is the permit properly displayed?
    b. Has it been properly documented?
    c. Is the required safety equipment in place?
    d. Have permit requirements been communicated to permit users?
    e. Does the actual work and permit scope match?
    f. Is appropriate supervision present on site?
2. Monitoring of the PTWP by the responsible manager for the asset. With the assistance of the HSW business partners, these audits examine each business unit or site for compliance with the overall PTWP and be undertaken 6 monthly. The audit must randomly review permits for the period and include an in-the-field audit. Report of the audit should be recorded in iCare
3. Organisational review of the PTWP will be included as part of Critical Risk audits scheduled by the Head of health, safety and wellness.

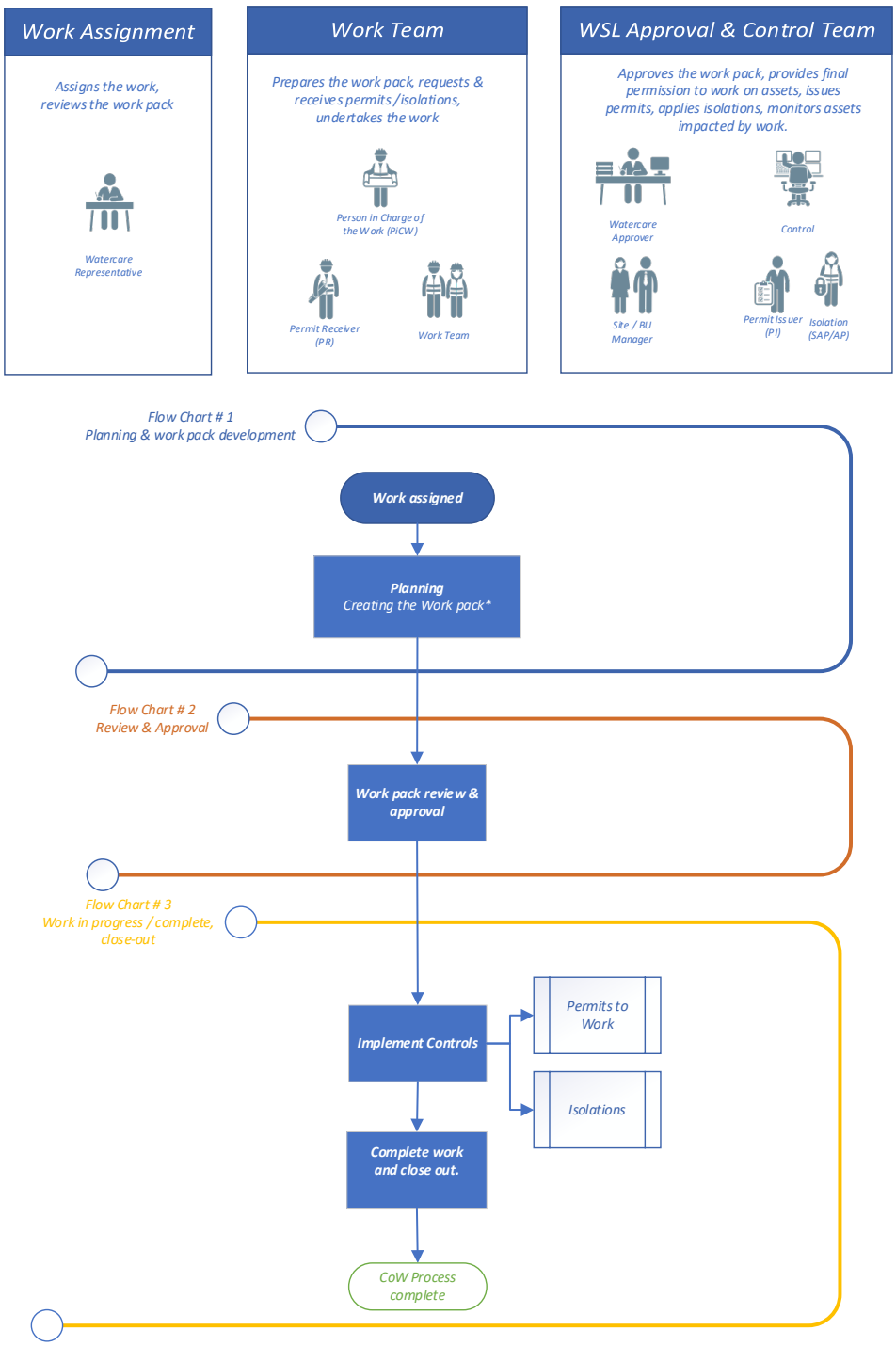
All corrective actions must be recorded in iCare.

3 Documentation

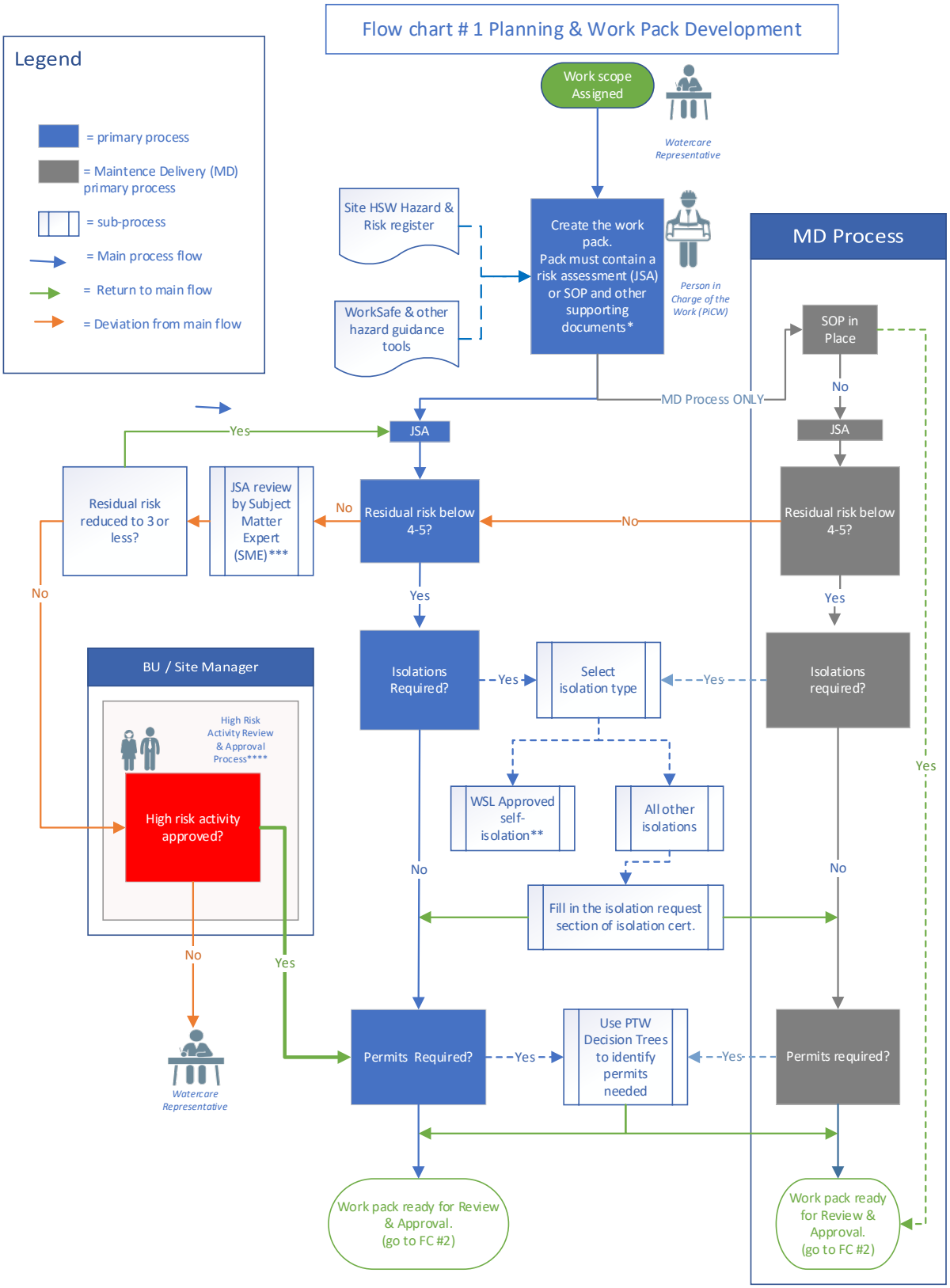
Record	Review	Retention time	Location
Permit certificates	Daily during works	5 years	1 year on site 4 years – Recall
JSA	Daily during works	5 years	1 year on site 6 years – Recall
Standard operating procedure	Reviewed annually	Ongoing	Operational facility Obsolete – Recall
Training record	Annually	Duration of validity	HRSS
Induction record	Annually	Renewed every 24 months	HRSS
Daily monitoring	N/A	5 years	Permit to work register

Appendix A: Control of Work Process Flow.

Control of Work Process - work flow

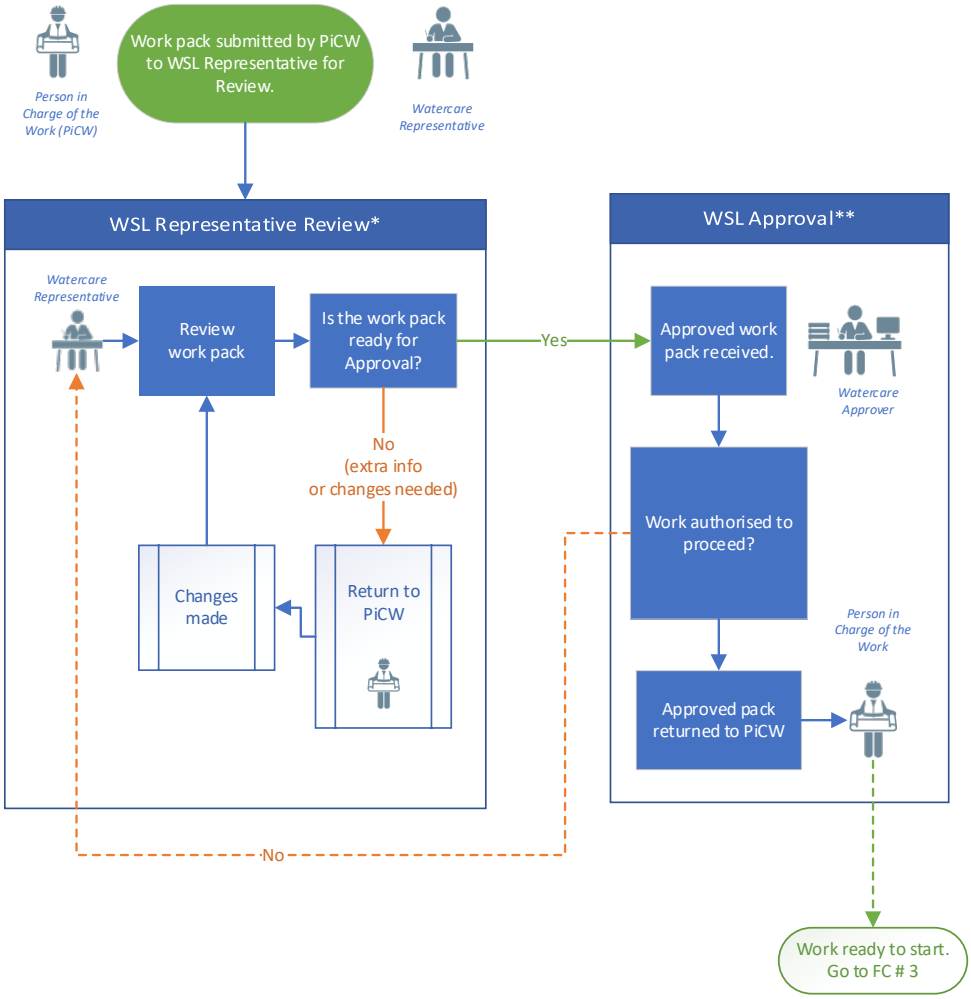


* Work Pack documents must include a risk assessment (JSA) or an SOP or a combination of both. Additional documents may include Permit Certificates, Isolation Requests, plans and drawings, work methodologies and other relevant information. Refer Pg's 20-28 Control of Work Document



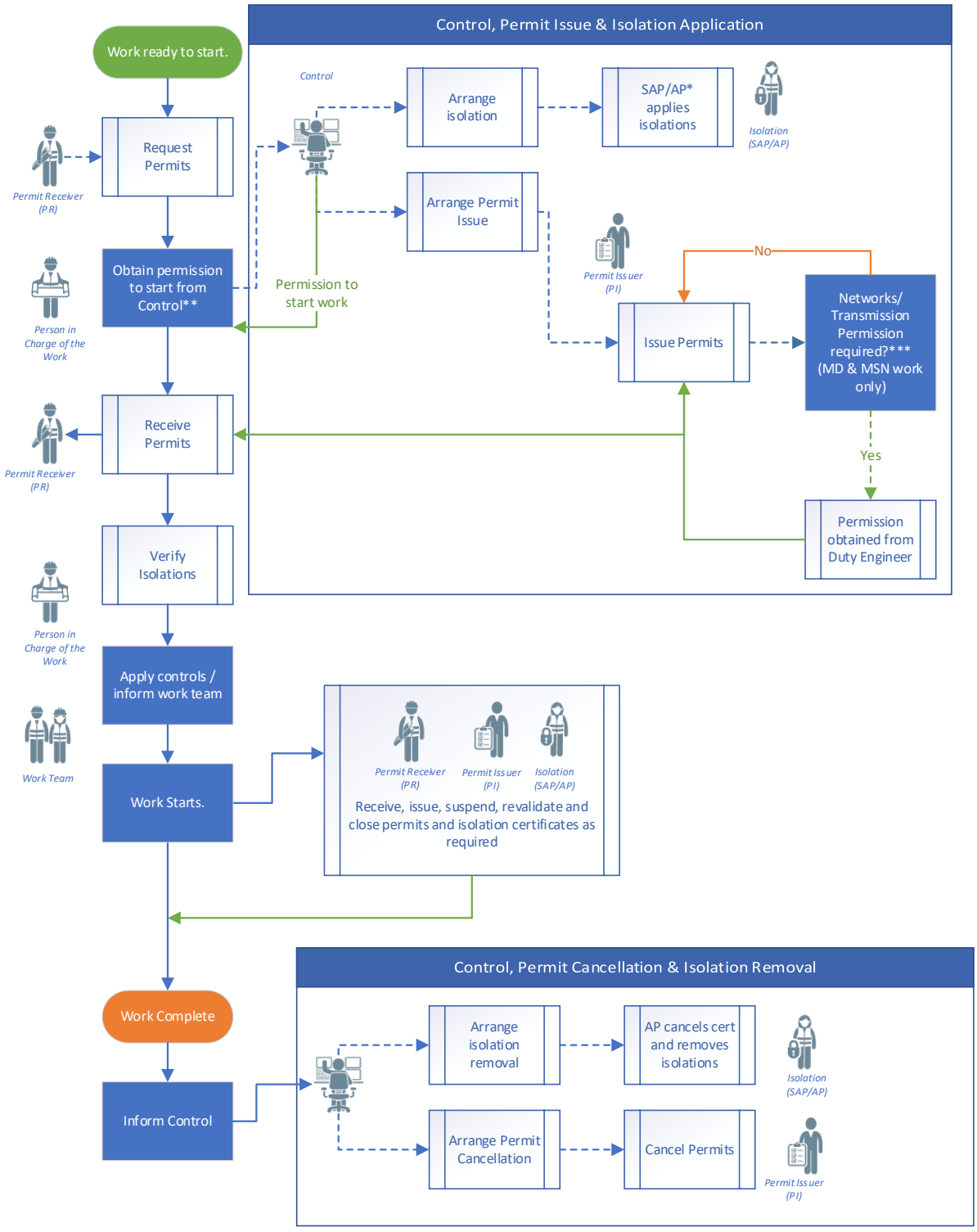
** Watercare-approved self-isolation within one working shift, four or less isolation points, applied by WSL approved personnel.
*** SME - A competent person who understands the work, risks and controls – refer pg 16 of Control of Work Manual
**** High Risk Approval required if after planning safety measures to reduce risks, the level of risk remaining still considered high (4) or very high (5).

Flow chart # 2 Review, Approval,



* Watercare Representative Review – Refer Pg's 10 & 11 Control of Work Manual
** Watercare Approval – Refer Page 17 Control of Work Manual

Flow chart # 3: Work in Progress, Complete / Close-out



* SAP / AP (Senior Approved Person, or Approved Person) trained and approved by Watercare to apply and remove isolations.
** Control – The person operating the asset at the time of the work. Depending on the site or asset this maybe a Process controller (Rosedale), Control room operator, Process technician, Networks / Transmission Duty Engineer.
*** Networks / Transmission Permission – MD and MSN can issue their own permits for work on these assets. However they must obtain permission before issuing the permit.

Appendix B: Roles and responsibilities

Position	Responsibilities
Isolation Authorisers	Authorised Person – A person appointed in writing by a Senior Authorised Person and is approved to issue isolation permits within the scope of the certificate of appointment, covering electrical, mechanical and operations. Senior Authorised Person – A person who is appointed in writing by a responsible manager for the asset and is approved to issue isolation permits within the scope of the certificate of appointment, covering electrical, mechanical and operations.
Health Safety and Wellness Manager	Must facilitate an annual review of the PTWP.
Networks / Transmission Duty Engineer	Responsible for granting Permit Issuers permission to approve permits for working on these assets within a specified date and time period by: • checking the transmission / networks for concurrent risks and activities that may impact the work. • recording permission granted.
Permit Issuer (PI)	PIs are responsible for the single-point co-ordination of work activities within their defined areas and for informing others where the work may infringe on another area or activity. PIs must: • issue permit certificates • verify the worksite is safe for the work to be undertaken • analyse the effectiveness of the JSA • make sure the PR fully understands the requirements of the permit, including any constraints • obtain permission from networks/transmission duty engineers for work to proceed on their assets. • enter the correct details into the PTW register • participate in permit audits • revalidate suspended permits • cancel permits • inform relevant stakeholders of permit status • make sure adequate isolations are applied and maintained • identify and arrange immediate action for non-compliance issues • escalate to asset / site managers any permits where the potential high risk cannot be mitigated, (level 4 and 5 residual risk). The PI may suspend, cancel or decline to issue a permit if they feel circumstances, including current permit workload, may compromise the safety of people, plant, process or the environment.
Permit Receiver (PR)	Applies for the permit and is responsible for: • compliance with the JSA • completion of the permit certificates • consultation with the PI on appropriate hazard controls • obtaining authorisation before starting work • making sure all permit users are adequately competent • ensuring the site is safe for handover or permit suspension

	• making sure the worksite is safe prior to applying for a suspension (may include enabling safety-critical systems for the period of the suspension) • communicating the conditions of the permit to all permit users • following the conditions of the permit • applying for cancellation of the permit at the end of the job or after five revalidations • ensuring a copy of any rescue or emergency plans are held on site • displaying a copy of the permit at the worksite • follows worksite supervision requirements • liaising with the PI if conditions change • informing the PI when the fire watch has ended so that hot work certificates can be closed • making sure the worksite is safe, isolations have been removed and safety-critical systems enabled and confirmed prior to applying for cancellation of the permit.
Permit Users	Individuals working within the PTWP must make sure: • They have received adequate instructions and fully understand the requirements of the PTWP • They do not start any work requiring a permit until it has been properly authorised and issued • They receive a briefing from the PR on the job and they understand the potential hazards and precautions to be taken • They follow instructions specified on the permit and by the PR • When they stop work, they leave the site and any equipment they are using in a safe condition • If in any doubt or if circumstances change, they stop work and consult with the PR.
Person in Charge (PIC) of the Work	An individual delegated to ensure appropriate supervision of works on site when the Permit Receiver is absent (applies to low or medium risk works).
Safety Observer (SO)	The SO is responsible for: • constantly monitoring the work and adjacent areas • making sure any hazards that arise as a consequence of the work or changes in the area are immediately communicated to other stakeholders • notifying the PR of any uncontrolled hazards • making sure there is an adequate means of communication with stakeholders (Where the communication is hand signals, the SO must remain in a position so the signals can be seen. Where the communication is talking e.g. on a mobile phone, over a RT or directly to people, the SO must be able to be heard at all times.) • ensuring all safety requirements specified on the permit are in place throughout the job • stopping work if it becomes dangerous to continue • initiating rescue, emergency response or containment procedures if required. Excavation SO (often referred to as a spotter) In addition to the responsibilities outlined above, an excavation SO is responsible for: • making sure all workers (including themselves) are physically isolated from entrapment between equipment or materials and the working area

	• warning equipment operators of any unexpected underground services or warning indicators (e.g. tape) • maintaining isolation from surrounding work hazards (e.g. overhead power lines clearance) • making sure a means of communication with the excavator operator and all other stakeholders exists at all times. Hot Work SO (often referred to as a fire watch) In addition to the responsibilities outlined above, the hot work SO's responsibilities include: • detecting, containing and extinguishing all sparks, hot debris etc. • monitoring wind direction (if required) • remaining at the worksite continuously for 1 hour after completion of work to make sure no ignition sources remain • being competent in using the appropriate fire extinguisher • counter-signing the hot-work certificate • informing the PR when the fire watch has ended so the hot-work certificate can be closed. Confined Space Entry SO In addition to the responsibilities outlined above, confined space entry SO's responsibilities include: • checks to ensure the equipment is currently calibrated, prior to the start of work • pre-entry testing before and after breaks and recording the peak atmosphere results on the confined space entry certificate • maintaining control of the entry and exit of a confined space • barring the entry point during breaks and at the end of the work period • authorising those entering and leaving the confined space • recording the entrant's name, date of entry, entry time and exit time on the confined space entry certificate • regularly verifying the status of those working in the confined space • maintaining contact with entrants in confined spaces • understanding what the rescue plan is and assisting in its execution • recognising and promptly responding to abnormal conditions or incidents inside and outside the confined space and raising the alarm if required • evacuating the confined space if an emergency alarm sounds (except for planned routine alarm tests) • continuously monitoring and recording the confined space atmosphere and stopping the work and evacuating workers from the confined space if atmospheric test results are outside the prescribed limits • making sure, without entering the confined space, that all workers have recorded their exit from the confined space • counter-signing the confined space permit • not entering a confined space under any circumstances.
Site / Asset Managers	Has overall responsibility for the PTWP and makes sure: the PTWP is followed the PTWP is adequately resourced audits meet the defined requirements training systems meet the defined requirements.

Appendix C: Training and competency

Anyone working under a permit must be competent to complete the work safely. Wherever possible, training must be to recognised New Zealand qualifications.

No one can issue or receive a permit without a suitable level of competency achieved through training. A way of demonstrating this competency is through the following NZQA unit standards, a trade certificate i.e. electrical or welding, or a Watercare-approved alternative:

Role	Unit Standard	
Unit standard number:	17590	17588
Unit standard description:	Issue worksite-specific work permits	Apply for, accept and carry out work according to a work permit in the workplace
Permit Issuer	✓	
Permit Receiver		✓

In addition, the following training is required for certain jobs:

Mandatory Confined Space Entry Training Requirements					
Unit standard number:	17599	18426	25510 or 3058	6400, 6401 & 6402	17596
Unit standard description:	Plan a confined space entry	Demonstrate knowledge of hazards associated with confined spaces	Gas testing	First aid	Demonstrate knowledge of safety observer responsibility in the workplace
Permit Issuer	✓	✓	✓		
Permit Receiver	✓	✓	✓		
Stand-by person		✓	✓	✓	✓
Confined space entrant		✓	✓		

Mandatory Working at Height Training Requirements					
Unit standard number:	15757	23229	23232	6400, 6401 & 6402	17596
Unit standard description:	Use, install and disestablish proprietary fall arrest system when working at height	Use a safety harness for personal fall prevention when working at height	Develop a rescue plan for recovery of a suspended individual after a fall	First aid	Demonstrate knowledge of safety observer responsibility in the workplace
Permit Receiver	✓	✓	✓		
People installing or using a fall arrest system	✓	✓			
People using a safety harness		✓			
Stand-by person				✓	✓

Hot Work Training Requirements			
Unit standard number:	3271	4647	17596
Unit standard description:	Suppress fire with hand extinguishers and fixed hose reels	Explain principles of fire science	Demonstrate knowledge of safety observer responsibility in the workplace
Stand-by person	Optional[2]	Optional	Mandatory
Welders	Must hold an appropriate qualification or relevant unit standard		

Workers must be informed of the PTWP at a level relevant to their level of involvement. Generally, this will be undertaken as part of an induction as follows:

- Contractors: Overview of the PTWP
- Workers who are likely to use the PTWP: full outline of the PTWP

2 Stand-by persons for hot work must have training on how to use a fire extinguisher and on the principles of fire science, which can be taught on the job. Certification the unit standards noted in the table is optional.

Appendix D: Definitions

Terminology	Description
Active permit	The status of a permit that has been issued, until such time as it is suspended or cancelled
Authorisation code	A unique authorisation code provided by a PI to a PR by text or email for remote issuing and authorisation of permit certificates.
Brown-field works	Works that can have an impact on existing operating assets (These assets need to stay in operation and maintain an acceptable level of output and quality during the works.)
Competent person	A person who has, through a combination of training, education and experience, acquired knowledge and skills enabling them to perform a specified task correctly
Confined space	A confined space means an enclosed or partially enclosed space that: • is not designed or intended primarily to be occupied by a person, for example, it has poor ventilation, poor lighting, and the size or location of the opening makes it physically difficult to get in and out of or to remove an injured or unconscious person from the space, and; • is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space, and • is or is likely to be a risk to health and safety from one or more of the following: o An atmosphere that does not have a safe level of oxygen, (below 19.5 and above 23.5%), o Contaminants, including airborne gases, vapours or dusts that may cause injury from fire or explosion, (e.g. methane), o Harmful concentrations of any airborne contaminants, (i.e. those above the relevant exposure standard, or are likely to cause impairment, loss of consciousness or asphyxiation, such as hydrogen sulphide, carbon monoxide, volatile organic compounds), or o Engulfment by any liquid or free flowing solid that may cause suffocation or drowning, (such as: water, wastewater, storm water or sludge).
Disable (or override)	The temporary bypass of a safety device to allow certain work to proceed without causing an unnecessary process shut down or fire alarm, e.g. fire detector disabled during welding operation
Emergency systems	Emergency systems, including fire sprinklers, fire ring mains, deluge or suppression systems, firefighting supply equipment including pumps and engines, firefighting supply tanks, fire or smoke detection equipment, chemical alarms, equipment alarms or stop devices (relating to emergencies), evacuation alarms, emergency signage
Explosive Atmosphere Zone	An area in which an explosive atmosphere is or may be expected to be present which require special precautions for the construction, installation and use of equipment. These areas are plotted on site asset plans and classified as a Explosive Atmosphere Zones in accordance with AS/NZS 60079.10.1:2009 Explosive Atmospheres. A zone is based on how often explosive gasses may be present and for how long: • Zone 0: Explosive gas atmosphere present continuously or for long periods • Zone 1: Explosive gas atmosphere is likely to occur during normal operation • Zone 2: Explosive gas atmosphere is not likely to occur, but if it does occur, it will exist for a short period only.

Flammable or combustible materials	Any fuel with the potential to explode or burn, including solid materials, substances, vapours, gases, and dust. Precautions must consider • any area within 10 metres of any combustible or flammable materials • any area within 10 metres of any combustible or flammable material release points (flanged or threaded piping connections; instrumentation bleeds, separators, tanks, dehydrators, regulators, meters, compressor stations, transfer pumps, and other equipment) • any area where combustible or flammable material is more than 10 metres away but is easily ignitable or where situated near adjacent wall or floor openings • any area where combustible or flammable materials are adjacent to the opposite side of metal partitions, walls, ceilings or roofs and are likely to be ignited by heat conduction or radiation Reference: Health and Safety at Work (Hazardous Substances) Regulations 2017:
Handover	The process of transferring responsibility for work activity between shift workers
Hazardous energy	All energy within the system includes: • electrical • stored or residual energy, such as within capacitors, springs, elevated devices, rotating flywheels • hydraulic systems • pneumatic systems • pressure systems, such as fluids, product and air • gravity systems
High-risk works	For this procedure, high risk relates to activities where the proposed controls cannot reduce the risk below high or very high risk (4 or 5 on the WSL Risk matrix)
Hot work	Any operation that uses naked flames or produces sparks within the proximity of flammable materials or structures. Or the use of non-intrinsically safe or flameproof equipment in potentially flammable atmospheres **Category 1** hot work includes: • welding, cutting, brazing or burning with a torch, electric arc or soldering iron • using a propane torch • grinding • any use of an open flame **Category 2** hot work includes: • sandblasting (abrasive blasting, either wet or dry) • chipping, ripping or other cutting by impact • breaking concrete • use of internal combustion equipment (vehicles, portable generators and air compressors) • opening of electrical equipment • using explosive-charge powered tools • hot tapping • using non-explosion-proof electrical equipment, such as heaters, motors, coils, extension cords, tools and lights • using portable electronic devices (including mobile phones, pagers, radios, portable computers and handheld computers)

Intrinsic safety & EX rated equipment.	Intrinsic safety (IS) is a safety measure used to ensure the secure functioning of electrical equipment in hazardous areas by restricting the energy—both electrical and thermal—that could potentially cause ignition. This technique is commonly applied to devices like gas detectors, IS radios, and LED headlights. In scenarios involving signal and control circuits that operate on lower currents and voltages, adopting the intrinsic safety approach streamlines circuitry. This method essentially applies the principles of inherent safety within instrumentation. However, high-power circuits such as those used in electric motors or lighting systems cannot employ intrinsic safety methods for protection. These devices, requiring higher energy levels, fall under different Ex-rated protection techniques, such as those used for fans and lighting. Despite this, as long as these devices comply with area classification, they still meet the standard requirements for operation within a hazardous area exposed to an explosive atmosphere.
Isolating group control measures (working at height)	Edge protection systems, barriers, scaffolding, guardrails or multi-use mobile elevated work platforms
Isolating personal control measures (work at height)	Total restraint system, single-user mobile elevated work platform, platform (podium) ladder, mobile guarding system, man cages
Isolation	A physical barrier between a source of energy and a place of work
Job safety analysis (JSA)	A JSA is a job based risk assessment to provide all workers with a clear safe system of work. The JSA includes task specific safety precautions related to: • The people involved. • The plant and equipment used. • The materials • The working environment
JSA register	A summary of JSA's and associated permits that have been issued and their current status
Monitoring	The routine check and observation of how the PTW conditions are being met
Must	Indicates that a statement is mandatory
Permit	Document supporting the permit to work process, which outlines additional control information for certain specified types of significantly hazardous work
Permit Designate	A competent person acting as a representative to the PI
Permit Issuer	The person responsible for authorising work that is subject to a permit
Permit Receiver	The person supervising the workers engaged in a job that is the subject of a permit
PI	Permit issuer
Potentially hazardous	For the purpose of this procedure, potentially hazardous relates to tasks defined in section 7.3
PR	Permit receiver
Precaution	Action required to reduce risk or to mitigate against harmful effects
PTWP	Permit to work procedure
Remote isolation procedure	Gives assurance to the recipient of a subsequent and related isolation permit
Residual risk assessment score	Risk assessment score that determines level of authority and supervision by the PR
Revalidation	The reassessment of the worksite and permit conditions to determine if work can continue safely for another set period of time
Review	A re-examination of the fundamental design of the system to see whether or not it should be changed in light of experience
Routine work	Work carried out by workers that is considered part of their normal duties
Safety-critical element	Specific devices identified in the site MHF safety case
Safety observer	The person responsible for monitoring hazardous work, stopping work if a dangerous situation arises and initiating rescue, emergency or containment procedures

Self-isolation	A Watercare-authorised procedure for short-term isolation (completed within one working shift) of specific plant, equipment or process that allows work to be carried out safely (four or less isolation points)
Should	Indicates a recommendation
So far as is reasonably practicable (SFRP)	As defined by the Health and Safety at Work Act 2015
Standard operating procedure (SOP)	An approved, documented procedure, used by trained workers, for routine work and includes identification of hazards and risks and details the controls for managing those hazards and risks
Suspended permit	The temporary invalidation of a permit certificate for a period during which the subject work has stopped
Validity	The period during which the permit may remain active before reassessing the worksite conditions

Permit to Work – Decision Trees

Use the Permit to Work Decision Tree to assess activity risks and determine if a permit is necessary. If the "YES" column is marked in the PTW column, a Permit to Work is mandatory. For entries marked with Y/N, the Permit Receiver and Permit Issuer should discuss necessary controls to decide on permit requirements. – *obtain PTW forms from your Watercare Representative.*

Confined Space Work in an enclosed or partially enclose space. **Note:** The Watercare Confined Space Entry Certificate and Confined Space Risk Decision Tree must be completed for ALL Confined Space entries.	PTW Req?
Is the residual risk score 2 or above on the Confined Space Decision Tree?	YES
Is the residual risk score 1 on the confined space decision tree?	NO

Excavation Work involving the removal of soil or rock from a site to form an open face trench, hole or cavity.	PTW Req?
Will the excavation be deeper than 1.5metres?	YES
Is there a risk of atmospheric contamination or build-up of gases or fumes within the excavation?	YES
Is de-watering required?	YES
Will the excavation contain contaminated soil?	YES

Explosive Atmosphere Areas These are areas that encompass explosive atmosphere zones, refer: *AS/NZS 60079.10.1:2009 Classification of areas – Explosive atmospheres*	PTW Req?
Is any of the work in a designated **explosive atmosphere zone**?	YES
Is any of the work undertaken in a designated **hazardous (explosive) area**, that is covered by an approved SOP?	Y/N

Hazardous Energy Permit Containing mechanical, chemical, electrical, thermal gravitational, potential, pneumatic or hydraulic energy. **Note:** The Watercare Isolation Procedure & Isolation Certificate still applies. **Note:** Work Type Competency (WTC) must be held if working on or near Electrical Energy Areas i.e. Motor Control Centre (MCC), Switch Rooms, Transformers, Earthing and Ring Main Unit (RMU)	PTW Req?
Will it work involve working on High Voltage equipment?	YES
Will it involve live product work including all work either inside or on live wastewater or water pipes where either product or vapours may still be present?	YES
Will it involve working in a HV room or within 2 metres of HV equipment? (Excludes routine activities undertaken by WTC trained personnel, with a Watercare approved SOP).	YES
Will it involve working on live equipment, electrical circuits, energised pipes or pressure vehicles?	YES
Does the work require any remote isolation(s)?	YES
Does the work require energising during testing or commissioning?	YES
All other isolation of hazardous energy; the Watercare Isolation Procedure applies	NO

Hot Work Where a source of ignition is introduced to a work environment	PTW Req?
Does it involve any non-intrinsically safe activity or non- Ex rated equipment within a confined space where flammable or explosive conditions could exist?	YES
Does it involve any non-intrinsically safe activity or non- Ex rated equipment, within a designated explosive atmosphere zone?	YES
Will there be any hot work on equipment or pipes?	YES
Will there be any hot work in an operational plant, offices or admin areas?	Y/N
Will the hot work be undertaken outdoors, when a fire ban is in place and/or within 3 metres of a structure?	Y/N

Other High-risk Work Any other tasks where the risk assessment generates a controlled risk score in the red zone of the job safety analysis (JSA).	PTW Req?
After planning safety measures to reduce risks, is the level of risk remaining still considered high (4) or very high (5)?	Yes
Other high-risk activities not covered by a specfic permit, i.e complex crane lifts, diving etc.	YES

Safety Device Impairment Where the work will disable or affect emergency systems (emergency monitoring systems, fire fighting, escape or rescue systems) or safety critical elements on a Major Hazard Facility.	PTW Req?
Will the work disable or affect emergency systems, including leaving a site operating with a disabled emergency alert system or safety device?	YES
Will the work disable or affect a MHF safety critical element as specified in the site MHF Safety Case (applies to Ardmore WTP only)	YES

Working at Heights Working in place where a person could be injured if they fell from one level to another.	PTW Req?
Will it involve working at a height of 5 metres or higher? (Notification to Worksafe?)	YES
Will it involve working at a height between 2 metres and 5 metres? **Excludes:** Under 5 metres when working from a scaffold erected by a competent person or from a scissor lift, a boom lift or a permanent ladder where the fall protection is permanently l equipment.	YES
Working at height less than 2m (NOTE: ALL height work must have safety controls planned and used)	NO

Appendix F: Reference and further reading

Internal documents

- Control of Work Manual
- Managing contractors and access to workplaces
- Managing Risk
- MHF safety management system (enquire at Ardmore WTP)
- Isolation procedure
- AA Form
- JSA Form

Legislation

- Gas Act 1992
- Health and Safety at Work (HSW) Hazardous Substances Regulations 2017
- HSW Major Hazard Facility Regulations 2016
- HSW General Risk and Workplace Management Regulations 2016
- Electricity Safety Regulations (2010)

Guidance

- Workplace exposure standards and biological exposure indices
- Approved Code of Practice (ACOP) Management of substances hazardous to health in the place of work
- Best practice guidelines for working at height in New Zealand
- Guidelines for Hazardous materials and preventing fires or explosions.
- Best Practice guidelines for safe use of machinery