

Permit to Work

Table of Contents

Document Control	3
Document Authorisation	3
Revision Details	3
Document Review History	4
References and Associated Documents	5
References	5
Associated Documents	6
1 Purpose	7
1.1 Objectives:	8
1.2 Scope	8
1.3 Types of Work Requiring a Permit	8
1.4 Definitions	9
1.5 Responsibilities	15
2 Permit to Work	18
2.1 Overview	18
2.2 General Requirements for all activities requiring a Permit to Work	19
2.3 Minimum Requirements for common activities requiring a Permit to Work	20
2.3.1 Group or High Voltage Isolation	20
2.3.2 Confined Space Entry	21
2.3.3 Hot Work	21
2.3.4 Working at Height	22
2.3.5 Ground Penetrations/ Excavations	22
2.3.6 Complex Lifts	23
2.3.7 Use of Fire Arms	23
2.4 Training Requirements	24
2.5 AIAL Tenants and Contracted works	24
3 Permit to Work Application Process	25
3.1 Who needs to apply for a Permit	25
3.2 Applying for a Permit	25
3.3 Implementing and complying with the Permit to Work	26
3.4 Permit Status	26
3.4.1 Revalidation of a Suspended Permit	27
3.4.2 Closing the Permit	27
3.5 Urgent/ Out-of-hours work	27
3.5.1 List of Senior People who may approve urgent/out of hours work	28

4	Confined Space Requirements.....	28
4.1	Confined Space controls	28
5	Working at Height requirements	30
5.1	Working at Height Controls	30
6	Hot Works Requirements	33
6.1	Hot Work Controls.....	33
7	Excavation and Ground Penetration requirements.....	36
7.1	Excavation and Ground Penetration controls	36
8	Permit System Audits	38
9	Appendices.....	39

Document Control

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References and Associated Documents

References

Code / Number	Title
Legislation	Health and Safety at Work Act 2015
	Health and Safety in Employment Regulations 1995
	Health and Safety in Employment (Pipelines) Regulations 1995
	Health and Safety in Employment (Pressure Equipment, Cranes and Passenger Ropeways) Regulations 1995
	Health and Safety at Work (Asbestos) Regulations 2016
	Health and Safety at Work (General Risk and Workplace Management) Regulations 2016
WorkSafe NZ Documents	Approved Code of Practice - Asbestos – Management and Removal of Asbestos
	Approved Code of Practice - Boilers
	Approved Code of Practice - Cranes
	Approved Code of Practice – Management of Substances Hazardous to Health in the Place of Work
	Approved Code of Practice – Power-operated Elevated Work Platforms
	Approved Code of Practice – Load Lifting Rigging
	Best Practice Guidance for Demolition in New Zealand
	Best Practice Guidelines for Working at Height in New Zealand
	Best Practice Guidelines for Working on Roofs
	Best Practice Guideline for Scaffolding in New Zealand
	Good Practice Guidelines for Excavation Safety
	Guide for Safety with Underground Services
	Health and Safety in Welding
Standards:	
AS 2865:2009	Confined Space Standard
AS 2444:2001	Portable Fire Extinguishers and Fire Blankets
AS 2380.1:1989	Electrical Equipment for Explosive Atmospheres – Part 1: Explosion Protection Techniques
AS/NZS 3504:2006	Fire blankets
NZS 4781:1973	Code of practice for safety in welding and cutting

Associated Documents

Document Number	Description	Location
SMS 04 04 03	PTW certificate	
SMS 04 04 06	PTW Rescue/ Recovery plan	
SMS 04 04 07	Gas testing sheet	
SMS 04 04 09	PTW audit form	
SMS 04 04 12	Equipment isolation checklist	
SMS 04 04 15	PTW audit report	
SMS 04 04 16	PTW daily register	
SMS 04 04 30	Confined space procedure	
SMS 04 04 60	Hazardous substances procedure	
SMS 04 04 70	Working at heights procedure	
SMS 04 04 80	Isolation procedure	
SMS 04 00 01	Management of hazards and risk standard	

1 Purpose

The Permit to Work ("PTW") system is a safe system of work for authorising all non-routine and high risk (ie. has the potential to cause a fatality or serious injury) work across Auckland Airport. The PTW system ensures the hazards and risks involved in such work, and the controls for those hazards and risks, are in place prior to commencement of the work, and maintained for the duration of the work. The PTW system provides oversight and coordination of high risk and non-routine work across the airport campus, through a Permit coordination office (Permit Office). It does this by:

- Providing authorisation for all types of work activities that require a Permit to Work ("Permit");
- Linking a Permit to other documentation (Certificates etc) required for the Permitted work activity, and ensuring any concurrent and/ or conflicting work has been identified;
- Ensuring there is a designated person in charge of the worksite ("PICWS"), and that they are aware of their responsibilities within the scope of the Permitted work;
- Documenting all information relevant to the task, for everyone who is involved in the work;
- Ensuring there are adequate plans, controls and and sign-offs to return the worksite to normal operations.

The PTW system applies, but is not limited to, non-routine and high-risk work. E.g. entering and working in confined spaces, hot work, demolition work, electrical and mechanical isolations, work at heights.

The Permit to Work documents a contract between the Area Authority, the Permit Issuer and the Person in Charge of the Worksite (PICWS). A Permit to work is issued based on the agreed work scope and associated risk assessment that authorises a person to:

- Carry out specific work activities;
- At a specific location;
- Within a specified time frame;
- Using:
 - Agreed hazard and risk controls;
 - Specified equipment; and
 - Standard work methods / processes.

The purpose of the PTW system is to:

- Exercise control and coordination of Permitted activities;
- Safeguard personnel and property;
- Ensure that the Area Authority, workers and site supervisors have suitable procedures to control high risk or non-routine work;
- Ensure that proper management steps are in place for all possible hazards and risks associated with the work.
- Assess and control concurrent or conflicting works.

Note: The PTW system and the Permit itself do not make the job safe; this can only be achieved by those involved in planning and those doing the job adhering to the requirements of the Permit and ensuring effective controls are in place for all hazards and risks at all times during the work.

1.1 Objectives:

The objectives of the PTW System are to:

- Identify the Permit holder (the PICWS) as the person in charge of the worksite;
- Ensure the proper authorisation of high risk or non-routine work;
- Ensure any hazards or risks involved in the work are identified and assessed;
- Ensure controls are identified and clear to the workers doing the work;
- Ensure that the PICWS is aware of **all** high risk or non-routine work being undertaken;
- Integrate non-operational work with site operations;
- Provides a documented record that; the method of work, the precautions and controls required to perform the work safely are adequately assessed and agreed.

1.2 Scope

This Permit to Work System applies to all high risk and non-routine work at Auckland Airport. The specific types of high risk and non-routine which require a Permit are defined in Section 1.3: Types of Work Requiring a Permit.

Emergency response protocols are not addressed within the scope of this PTW Manual. These are managed through the company's emergency response management plans. Notwithstanding this, some high risk activities require a Rescue/Recovery Plan to be submitted as part of the application for a Permit to Work.

1.3 Types of Work Requiring a Permit

The following section gives a brief description of the types of work requiring a Permit to Work

- a) Confined space entry/ Working in a confined space
- b) Work at height
- c) Ground/wall/ceiling penetrations
- d) Excavations
- e) Hot work
- f) Performing any group isolation or high voltage electrical isolation;
- g) Any work that requires a fire detection/ fire protection system to be isolated, or its function to be impaired in any way;
- h) Demolition work;
- i) Traffic system impairment;
- j) Removal of asbestos;
- k) Work involving the use of firearms (other than routine airfield operations);
- l) Complex crane lifts;
- m) Airfield/runway incursion (intrusion);
- n) Other work - see below.

Other work that may be classified as lower risk - but has the potential to affect the safety of other workers, passengers and members of the public. The following are examples of lower risk work that may require a Permit:

- Closing off or in other ways affecting significant floor space or access/egress ways used by other workers, passengers or the public (e.g. part of work preparation, movement of materials, etc.);
- Significant noise emissions with the potential to exceed 85dB;
- The creation of dust in quantities that may have the potential to be recirculated through a building's controlled air supply;
- The use of cleaning, painting, or similar substances in quantities that may produce fumes, odours or other emissions that have the potential to cause ill health or discomfort to personnel.

1.4 Definitions

Term	Definition
AIAL	Auckland International Airport Limited.
ALARP	As Low as Reasonably Practicable.
Complex lifts	Also called, irregular loads, have one or more of the following characteristics: <ul style="list-style-type: none"> • Unequal weight distribution; • Eccentric loading; • Irregular shape and/or proportions; • No set lifting points.
Concurrent activities	Activities that are taking place at the same time in the vicinity of/nearby the Permitted works.
Conflicting activities	Activities that could create a hazard/risk for the Permitted works e.g. isolation of a fire system in an area where hot work is taking place, or working at height above plant that is undergoing routine maintenance at the same time as the Permitted work.
Confined Space	An enclosed or partially enclosed space that is at atmospheric pressure during occupancy and is not intended or designed primarily as a place of work. In addition, the space: <ul style="list-style-type: none"> • Is liable at any time to: <ul style="list-style-type: none"> • have an atmosphere which contains potentially harmful levels of contaminant; • not have a safe oxygen range; or • cause engulfment; and • Could have restricted means for entry and exit.

Term	Definition
Contractor	Means a person or organisation engaged by AIAL (otherwise than as an employee) to do any work for gain or reward. The 'gain or reward' does not need to be monetary; it can be payment in kind or an exchange of services. Nor does the contract have to be in writing.
Fire system impairment	<p>A situation in which the site/area fire detection/protection systems are not in operation or have a reduction in capacity. Fire protection systems may include:</p> <ul style="list-style-type: none"> • Sprinkler and deluge systems; • Fire hydrants and hose reels, and • Smoke and heat sensors.
Group isolation	<p>Is work on equipment, plant or systems where:</p> <ul style="list-style-type: none"> • More than four energy sources are involved; • More than six workers are involved; • The work will take longer than one shift to complete; • The work has the potential to interrupt or interfere with, the day-to-day operations of the airport and/or its stakeholders; • None of the workers have the specialised technical competence and authorisation to individually determine, carry out and check all the isolations required.
Hazard	Anything that is an actual or potential cause of harm (illness or injury) or damage, and includes the following broad categories: physical, psychological, environmental, chemical, ergonomic and biological.

Hot Work	<p>Any work or activity at an Auckland Airport facility or premises, which may be a source of ignition. Includes but is not limited to the use or operation of:</p> <ul style="list-style-type: none"> • Welding or flame cutting equipment or use of an open flame; • Grinder, electric drill or other non-flameproof or spark-generating electrical equipment; • Hot tapping equipment; • Hand tools that may create a spark.
HSW Act	Health and Safety at Work Act 2015.
HV Isolations	Discontinuation or separation of plant and equipment from high voltage power supply.
Job Safety Analysis (“JSA”)	A step-by-step assessment of the tasks to be completed, the actual and potential hazards and risks associated with each task, and the controls that are required to be in place prior to commencement and for the duration of the task.
Lower Explosive Limit (“LEL”)	The concentration of a flammable contaminant in air, below which a flame does not occur on contact with an ignition source.
Non-routine Work	Activities which are outside the routine operation of the airport and which require a PTW and includes maintenance, construction activities and any high risk activities.
Notifiable Event	Any notifiable injury, illness or incident as defined in section 23 and 24 of the HSW Act.

Particular Hazardous Work

Any restricted work as defined in the Health and Safety in Employment Regulations 1995.

For Auckland Airport's purposes, Particular Hazardous Work includes:

- Construction work with a risk of falling 5 metres or more, but excludes:
 - Accessing an area from a ladder; or
 - Maintenance and repair work of a routine nature.
- Erecting or dismantling scaffolding with a risk of falling 5 metres or more;
- Use of a lifting appliance where the appliance has a lift a mass of 500 kilograms or more a vertical distance of 5 metres or more, excludes work using:
 - An excavator;
 - A fork-lift; or
 - A self-propelled mobile crane;
- Work in any pit, shaft, trench, or other excavation in which any person is required to work in a space more than 1.5 metres deep and having a depth greater than horizontal width at the top;
- Work in any drive, excavation, or heading in which any person is required to work with a ground cover overhead;
- Work involving the use of explosives, or storage of explosives for use;
- Work that in which a person breathes compressed air, or respiratory medium other than air (not diving).

Permit to Work

An official document which incorporates a signed statement that hazard and risk identification, and specified checks or tests have been carried out by an authorised person, and that barriers and controls have been put in place to eliminate or minimise the hazards and risks prior to the work commencing. Information on the Permit includes:

- Details of the work tasks to take place;
- The start and estimated completion times for the work;
- The precise location of the work;
- The potential hazards and risks involved in the work;
- The required controls for those hazards and risks;
- Details of final inspections required;
- Any concurrent or conflicting activities while the work is in progress; and
- The people involved in the work.

Risk	<p>A measure of a hazard's significance in terms of the potential Severity of the consequences, and the Likelihood of occurrence.</p> <p>Controlled Risk – The level of risk assuming all identified controls are in place and are effective sometimes referred to as 'residual' risk.</p> <p>Current Risk – The actual level of risk having regard to the effectiveness of the controls currently in place.</p>
Risk Assessment Matrix ("RAM")	<p>A tool used to quantify the overall level of risk associated with a hazard and used to help determine the relative priority of different hazard and risk controls. The level of risk is determined by quantifying:</p> <ul style="list-style-type: none"> ○ The Severity of the consequences; and ○ The Likelihood of an event occurring. <p>A copy of the AIAL RAM is included in this Manual at Appendix 2.</p>
Safety Watch	<p>A qualified and competent person assigned to remain on watch at the site of hazardous work or a hazardous environment. The work may include the duties of Fire Watch for hot work and/or Safety Observer or Spotter.</p>
SOP	<p>Standard Operating Procedure. Sometimes called a Method Statement, Work Methodology, Safe Method of Work etc. In all cases provides a step-by-step description of how a specific work task is to be performed. May not be deviated from except with the approval of an authorised senior person.</p>
Sub-Contractor	<p>Means a person engaged by a Contractor (otherwise than as an employee) to do any work for gain or reward.</p>
Tool Box Meeting	<p>A job site meeting held with all workers involved in or affected by the work. This meeting must take place at the worksite after the PTW has been issued. The PICWS is responsible for ensuring all those involved in the work take part in the toolbox meeting. The JSA and associated risk controls are reviewed as part of this meeting.</p>
VOCs	<p>Volatile Organic Compounds. VOCs are substances (solvents, fumes etc.) that readily produce vapours that are hazardous to a person's health and/or flammable in low concentrations.</p>
Worker	<p>An individual who carries out work in any capacity, whether an employee, contractor or sub-contractor, an employee of a contractor or subcontractor, a labour hire employee, an out-worker, an apprentice or trainee, a person gaining work experience or carrying out a work trial, or a volunteer.</p>

Working at Height	<p>A Permit to Work is required when:</p> <ul style="list-style-type: none"> • Erecting or dismantling scaffolding >2m in height, in or directly adjacent to a live operational area; • Accessing or working on a roof where there is no physical edge protection; • Working from a structure >2m in height, other than a properly constructed or engineered Working Platform (see definition below).
Working Platform	<p>A Working Platform includes:</p> <ul style="list-style-type: none"> • Scaffold constructed in accordance with SARNZ Best Practice Guidelines for Scaffolding; • Mobile scaffold; • Mechanical Elevated Work Platforms e.g. scissor lift, boom lift, knuckle boom, snorkel boom - provided it is used in accordance with any relevant WorkSafe NZ guidance and/or the manufacturer's instructions; and • Platform ladders
WorkSafe NZ guidance	<p>Documents issued by WorkSafe NZ including:</p> <ul style="list-style-type: none"> • Approved Codes of Practice (ACOP); • Best Practice Guidelines; • Good Practice Guidelines; • Fact Sheets; and • Any other information published by WorkSafe NZ.
Worksite	<p>An area where work is taking place.</p>

1.5 Responsibilities

Managers, supervisors and workers all have responsibilities under the Permit to Work system:

Position / Job Title	Responsibilities
Area Authority	<p>The Area Authority:</p> <p>The AA may be the; AIAL Manager or their delegate, a AIAL Supervisor or AIAL Project Manager and is responsible for;</p> <ul style="list-style-type: none"> Engagement of the work party performing the task and/or for the area that the work is to be performed in; Identifies the PICWS for supervision of the work ensuring completion of the work for which the Permit is to be issued; Reviews the Permit application and all supporting documentation prior to it being sent to the Permit Office; Signs the PTW certificate as the AA Monitors the safety of the work and compliance with the conditions of the permit to work. Ensures all incidents associated with the work are reported and investigated.
Health & Safety Business Partner/Advisor	<p>Provides professional advice, guidance and assistance to the Managers, Supervisors and Workers on matters relating to health and safety at work.</p>
Health and Safety Manager:	<p>Overall owner of the PTW system, including:</p> <ul style="list-style-type: none"> Establishment of the PTW system; Ensuring necessary supporting documents, guidance materials, templates, SOPs, forms, etc. are available and current; Identifying appropriate training for PTW system users; Performing routine audits of the system; Appointment of Permit Issuers. <p>Monitoring the PTW system:</p> <ul style="list-style-type: none"> Routinely monitors the PTW system to ensure it is working effectively; Arranges for periodic independent third party audits of the PTW system.
Permit Issuer	<p>The Permit Issuer is responsible for:</p> <ul style="list-style-type: none"> Applying and improving the PTW system; Authorising all types of Permits to Work at Auckland Airport; Delivering training programmes for PICWS and Area Authorities;

Position / Job Title	Responsibilities
	<ul style="list-style-type: none"> • Maintaining a current register of PICWS, and other appropriate records; • Conducting regular audits of Permits and the PTW system as a whole; • Ensuring that Permit applications are completed correctly; and • Ensuring that suitable control measures are identified prior to signing any Permit; • When required, inspecting worksites prior to commencement of Permitted works to identify any unusual hazards or risks.
<p>Person in charge of the Worksite (PICWS)</p>	<p>The PICWS:</p> <ul style="list-style-type: none"> • Undertakes all required safety training, including: AIAL safety induction and Permit Receiver training (NZQA Standard 17588); • Ensures all tools and equipment to used are serviceable and where required carry current certification; • Leads the development of JSAs (or equivalent) for all work activities requiring a Permit; • Leads the development of a recovery plan / rescue plan / emergency response plan; • Identifies and ensures implementation of control procedures to manage hazards and reduce risks, ensures that all appropriate precautions have been taken so that the work can be carried out safely; • Uplifts the Permit from the Permit Office, displays the PTW at the worksite and upon completion of the work returns the PTW to the PI for closure. • Facilitates a toolbox talk with all personnel involved in the work to ensure, scope of permitted work is understood, the hazards and hazard controls are understood, and personnel understand their responsibility for maintaining hazard controls, what to do in the event of an incident or emergency. The work party sign on to the JSA • Is responsible for the overall safe execution of the workscope; • Raises any safety concerns with the AA and PI, including any concerns about concurrent or conflicting activities; • Is present at the worksite, or represented by an approved second-in-charge, while the Permitted work is being performed; • Ensures that after completion of the Permitted work the worksite is returned to an operational state; • Reports all incidents, near misses and safety observations to the AA.

Position / Job Title	Responsibilities
<p>Safety Watch</p>	<p>May include the duties of Fire Watch for hot work and/ or Safety Observer or Spotter. The Safety Watch:</p> <ul style="list-style-type: none"> • Must complete the AIAL safety induction prior to being appointed as a Safety Watch; • Monitors that conditions and requirements listed on the Permit are complied with at all times; • Maintains a constant watch for hazards or risks related to the tasks being completed, before and during the work; • When necessary, stops all work and keeps the worksite closed until hazards/risks are controlled; • Remains on watch at the site of the Permitted works until all people involved in the work have completed the work and/or left the site; • Anticipates and communicates to the PICWS (or their authorised second-in-charge) any conditions that would be hazardous or pose a risk to workers or others affected by the Permitted work; • Maintains a position that allows clear observation of the work; • Maintains communication with the workers at all times; • Does not leave worksite while work is being carried out, unless properly relieved by an equivalent alternate Safety Watch; • In the case of Hot Work: <ul style="list-style-type: none"> • Ensures the correct type and size of fire extinguisher(s) are at hand; • Determines the appropriate location of all firefighting equipment in the worksite; • Checks that all firefighting equipment is in proper working order and is competent to operate the equipment; • Secures the worksite where hot work has been performed before departing, ensuring there are no smouldering fires or hot spots; • Remains on watch at the site for 30 minutes (or a longer period if required) after the work has stopped.
<p>Workers</p>	<p>All workers must be able to identify the inherent dangers of high risk tasks such working in confined spaces, work at height, hot work and be able to identify any high risk or non-routine work taking place on their work site.</p> <p>All workers must understand that high risk work is prohibited unless a Permit to Work has been issued for that work.</p>

2 Permit to Work

2.1 Overview

A Permit to Work System is an important part of a safe system of work that can help to manage high risk and non-routine work activities. Permits to Work are also used as a method of communication between the people responsible for managing assets and the workers who plan and carry out the work activities.

A Permit to Work:

- Defines the scope of the work;
- Records hazards and assesses the risk(s) involved in the work;
- Records control measures that comply with the “hierarchy of controls” as described in Section 6 of the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016;
- Is authorised by a Permit Issuer.

Full precautions must be taken to safeguard anyone carrying out the work, or others who may be affected by the work, before commencing any non-routine or high risk work on any Auckland Airport facility or premises.

In some instances, the requirements and guidance in this document may require interpretation and good judgment by the Area Authority. In the event of any doubt, refer all queries to an AIAL H&S Business Partner or the AIAL H&S Manager. Contact details are in Appendix 1 to this PTW Manual.

2.2 General Requirements for all activities requiring a Permit to Work

	Description	Permit required	Type of work	Allowable length of Permit
a.	Confined space entry/work	Yes	For all Work	Length of task if under one shift AND there are no personnel changes. If greater than one shift OR personnel changes a new Permit is required
b.	Working at heights	Yes, for some work	Refer to definitions on page 14	Length of task and no greater than one shift (8 hours)
c.	Ground penetration/Excavation	Yes, for some work	For work where the excavation is 300mm or more in depth	Length of task
d.	Hot Work	Yes, for some work	For all hot work not completed in a designated workshop requires a Permit	Length of task and no greater than 7 days at the discretion of the Permit Issuer
e.	Group or High Voltage Isolation	Yes, for some work	For all HV isolations and Group Isolations (refer to definitions on page 11)	Length of task and no greater than one shift (8 hours)
f.	Electrical Work	Yes, for some work	For all High Voltage electrical work or work on systems or equipment that require a group isolation	Length of task, and not greater than one shift (8 hours)
g.	Fire System Isolation	Yes	For all work	Length of task, and not greater than one shift (8 hours)
h.	Demolition	Yes	For all work	Length of the task
i.	Structural Penetration	Yes	For all work	Length of the task
j.	Traffic System Impairment	Yes	For all work	Length of task and no greater than one shift (8 hours)
k.	Working with hazardous substances (other than Asbestos – see below)	Yes, for some work	When working with a. Flammable or explosive substances b. More than 20 litres of hazardous chemicals c. All substances toxic to humans or the environment	Length of task and no greater than one shift (8 hours)
l.	Asbestos	Yes	Removal work	Length of the task

	Description	Permit required	Type of work	Allowable length of Permit
m.	Fire arms	Yes, for some work	Non-routine work	Length of task and no greater than one shift (8 hours)
n.	Complex Crane Lifts	Yes	For all work	Length of task and no greater than one shift (8 hours)
o.	Airfield/ Runway incursion (intrusion)	Yes	Non-routine work affecting airfield operation	Length of task and no greater than one shift (8 hours)
p.	Other	Yes	Low-risk works that have an impact on the operations of the airport e.g. traffic flows, airfield/apron	Length of task

Note 1: Contact the Permit Issuer if you are unsure if the work you are planning requires a Permit.

Note 2: The Permit Issuer may also at their discretion require that a Permit application be made for work that is not described in this section.

2.3 Minimum Requirements for common activities requiring a Permit to Work

This section provides a high level summary of the minimum requirements for some activities that occur frequently at Auckland Airport and which require a Permit to Work. It is not intended to be a full list of all AIAL requirements, and in all cases the relevant ACOP, Standard, AIAL Requirements document, Policy, Standard Operating Procedure and/or other relevant guidance must be consulted.

Other activities not included in this section may also require a Permit to Work; refer to Section 1.3. of this Manual for a list of activities that require a Permit to Work.

2.3.1 Group or High Voltage Isolation

Group Isolations or isolations of High Voltage systems must not proceed unless:

- A valid Permit to Work has been issued by a Permit Issuer;
- The requirements of the Permit are communicated to all workers involved in the work and any others who may be affected by the work;
- There is a clear documented procedure for both the isolation process and the safe removal of isolation(s) and return to normal service;
- All persons involved are qualified and competent to do the isolation work;
- The methods of isolation and discharge of stored energy are agreed and executed by a suitably qualified and competent person(s); and

Work on systems requiring a Group Isolation or High Voltage isolation may only proceed if:

- A system of locks and tags has been installed at isolation points;
- A test has been conducted to ensure the isolation is fully effective;
- The effectiveness of the isolation(s) is regularly monitored.

2.3.2 Confined Space Entry

Entry into and/ or work in a confined space must not proceed unless:

- All other safer options to complete the work have been considered and ruled out;
- A valid Permit to Work has been issued by a Permit Issuer, and the PICWS holds the following minimum New Zealand Unit Standards ("US") relevant to the work that is to be performed (or equivalent qualification):
 - US 17599 – Plan a confined space entry
 - US 18426 – Demonstrate knowledge of hazards associated with confined spaces
 - US 25510 – Operate an atmospheric testing device to determine a suitable atmosphere exists to work safely;
- The requirements of the Permit are communicated to all workers involved in the work and any others who may be affected by the work;
- All persons involved are suitably qualified and competent to do the work;
- All sources of energy, flammable and/or toxic gases and vapours affecting the confined space have been eliminated or reduced to ALARP;
- Testing of the atmosphere is conducted, recorded, verified and repeated as often as required by the Permit Issuer;
- A fully trained and competent Safety Watch is stationed at the entrance to the confined space, and a standby Safety Watch has been appointed;
- Unauthorised entry is prevented;
- WorkSafe NZ have been notified if required;
- A Rescue/ Recovery Plan and rescue equipment is immediately available should it be required.

2.3.3 Hot Work

Hot work must not proceed unless:

- All other safer options to complete the work have been considered and ruled out;
- A valid Permit to Work has been issued by a Permit Issuer, and the PICWS is trained and competent in the use of firefighting equipment available on site;
- All sources of flammable vapours, gases and other flammable materials have been eliminated or removed, and where this is not possible in the case of flammable vapours and gases, reduced to below LEL;
- The requirements of the Permit are communicated to all workers involved in the work and any others who may be affected by the work;
- All persons involved are suitably qualified and competent to do the work;
- If the hot work is being performed in a confined space – the atmosphere is continuously tested and monitored to ensure that it is free of flammable gases, and any risk of toxic contaminants is controlled;
- A fully trained and competent Fire Watch is appointed, and stationed with direct and uninterrupted line of sight to the hot work.

2.3.4 Working at Height

Working at height as defined in this Manual (refer to page 14) must not proceed unless:

- All other safer options to complete the work have been considered and ruled out;
- A valid Permit to Work has been issued by a Permit Issuer, and the PICWS holds the following minimum New Zealand Unit Standards ("US") relevant to the work that is to be performed (or equivalent qualification):
 - US17600 Explain safe work practices for working at heights
 - US 15757 Use, Install, and Disestablish Proprietary Fall Arrest System when working at height
 - US23229 Use safety harness system when working at height;
- An appropriate fall restraint or fall arrest equipment and system that meets NZ Standards is provided to any worker performing the work or present on the worksite;
- If fall arrest equipment is used, it must be designed to limit free fall to less than 2 metres;
- A visual inspection of the fall arrest equipment and system is completed prior to the work commencing and each time it is used, and any equipment that is damaged, defective or (in the case of fall arrest equipment) has previously been activated, is taken out of service and replaced;
- The requirements of the Permit are communicated to all workers involved in the work and any others who may be affected by the work;
- All persons involved are suitably qualified and competent to do the work;
- WorkSafe NZ have been notified if required;
- A Rescue/ Recovery Plan and rescue equipment is immediately available should it be required.

2.3.5 Ground Penetrations/ Excavations

Any work that involves creating a man-made cut, cavity, trench, depression or hole in the ground surface of more than 300mm in depth must not proceed unless:

- All other safer options to complete the work have been considered and ruled out;
- A valid Permit to Work has been issued by a Permit Issuer, which includes a copy of the Ground Penetration Certificate issued by AIAL's authorised Engineering Services representative;
- All underground hazards, i.e. pipelines, electric cables and services etc. have been identified, located and if necessary isolated;
- Ground and environmental conditions are continuously monitored for change;
- The requirements of the Permit are communicated to all workers involved in the work and any others who may be affected by the work;
- There is a reliable means of communication between the operator of any excavation/ ground penetration equipment and other workers on the ground in the vicinity of the equipment;
- All persons involved are suitably qualified and competent to do the work;
- WorkSafe NZ have been notified if required; and

Where persons are required to enter an excavation in order to perform work:

- A further hazard and current risk assessment of the worksite has been completed by a suitably qualified and competent person immediately prior to entry;
- Potential or actual ground movement is controlled and the risk of collapse or engulfment eliminated by systematically shoring, sloping, bracing, benching, etc. as appropriate to the circumstances of the work and the nature of the ground material;
- There is a reliable means of communication between the operator of any excavation/ ground penetration equipment and workers who have entered the excavation;
- A Rescue/ Recovery Plan and rescue equipment is immediately available should it be required.

2.3.6 Complex Lifts

Complex lifts utilising cranes, hoists, or other mechanical lifting devices must not proceed unless:

- All other safer options to complete the work have been considered and ruled out;
- A valid Permit to Work has been issued by a Permit Issuer, which includes a copy of the lift assessment and/ or lift plan signed by a suitably qualified and competent person;
- Rigging of the load is carried out by a qualified and certified competent person;
- Lifting tackle and equipment have been certified for use within 12 months of the date of the lift;
- The load does not exceed dynamic and/or static capacities of the lifting equipment;
- Any tackle installed on or used with the lifting equipment is certified, appropriately maintained and fully operational;
- All lifting devices and tackle have been visually examined by a competent person(s) before each lift, and confirmed free of damage or defects;
- A dogman has been appointed to control the lift;
- An exclusion zone has been established which is effective and will remain in place for the duration of the lifting operation;
- There is a reliable means of communication between the operator of any lifting equipment and other workers on the ground in the vicinity of the lift (eg. Rigger, dogman);
- The requirements of the Permit are communicated to all workers involved in the work and any others who may be affected by the work;
- All persons involved are suitably qualified and competent to do the work;
- A Rescue/ Recovery Plan and rescue equipment is immediately available should it be required.

2.3.7 Use of Fire Arms

Work that involves using a firearm other than for routine airfield operations by Auckland Airport employees must not proceed unless:

- All other safer options to complete the work have been considered and ruled out;
- A valid Permit to Work has been issued by a Permit Issuer;
- The user of the firearm has produced and the Permit Issuer has sighted the user's NZ Firearms Licence;

- NZ Police have been notified of the intention to bring a firearm into an Auckland Airport facility or onto Auckland Airport premises;
- Aviation Security and the NZ Civil Aviation Authority have been notified and granted approval for the use of the firearm (applies whether the work is to be performed either landside or airside);
- WorkSafe NZ have been notified if required;
- The area of live shooting is continuously monitored for any change in conditions;
- The firearm is secured and concealed while in transit;
- The firearm user is escorted by a Skygate Security Officer at all times;
- The requirements of the Permit are communicated to all workers involved in the work and any others who may be affected by the work;
- All persons involved are suitably qualified and competent to do the work.

2.4 Training Requirements

The following table sets out the minimum training requirements for people who may issue or receive a Permit:

Role	Permit Issuer	Permit Receiver	Working @ height	Confined space	Hazard ID	Fire Extinguisher training
	US 17590	US 17588	US 17600 US 23229	US 17599 US 18426 US 25510		
Permit Issuer	✓	✓	✓	✓	✓	
PICWS*		✓	As required	As required	✓	As required

Note 1: The PICWS must also hold qualifications relevant to the work activity for which the Permit is issued.

People responsible for issuing and receiving Permits must have refresher training to ensure familiarity and compliance with any new Regulations, WorkSafe Guidance and maintain competency. Refresher training needs to be conducted:

- Every two years; or
- If there is a significant change made to the PTW system; or
- If the person is away from work for six months or more.

2.5 AIAL Tenants and Contracted works

- All high risk or non-routine work completed by Tenant(s) and/or their Contractors in/or on AIAL facilities or premises must have an authorised Permit to Work;
- Tenants and/or their Contractors are required to apply for a Permit to Work via their AIAL liaison person;
- Construction projects operating, as an authorised “Ring Fenced project” must have their own Permit to Work system, which authorises and controls Permits for all high risk work undertaken within the boundaries of the “ring fenced” area. Any work beyond the ring fence boundary and/or work that infringes on AIAL operational areas must have an AIAL Permit to Work;

- High risk or non-routine work by Tenants or their Contractors in areas that are not authorised as a “Ring Fenced project” **must** use the AIAL PTW system.

High risk work must not be undertaken without a valid Permit to Work.

3 Permit to Work Application Process

3.1 Who needs to apply for a Permit

All AIAL Employees, Contractors and Tenants are required to apply for a Permit for any high risk or non-routine work as described in section 1.3. of this Manual.

Construction projects that are authorised by AIAL as a “Ring Fenced Project” are not required to apply for an AIAL Permit if they have their own system in place to manage high risk or non-routine work.

Construction projects operating as an authorised “Ring Fenced Project” must have their own Permit to Work system which authorises and controls Permits for all high risk work undertaken within the boundaries of the “ring fenced” area. Any work beyond the ring fence boundary and/or work that infringes on AIAL operational areas must have an AIAL Permit to Work.

A copy of the Permit to Work form is included in this Manual at Appendix 3

3.2 Applying for a Permit

The following briefly describes the Permit application process:

- 1) Determine if the type of work to be carried out requires a Permit (refer to guidance provided earlier in this Manual);
- 2) Gather all information relevant to the work, including but not limited to: starting time and date, the expected duration, a description of the task, and the names of those carrying out the work
- 3) Conduct a thorough hazard and risk assessment (e.g. JSA or equivalent) and determine who is at risk, what are the hazards, what control measures are necessary to manage the hazards (using the hierarchy of controls) and the level of controlled (residual) risk.
- 4) Prepare a Permit application and supporting documentation or information including, at minimum:
 - JSA (or equivalent) which includes a Rescue/Recovery Plan if the Permit application is for confined space entry, working at height, complex lifts or excavations;
 - Any necessary pre work precautions e.g. isolation certificate, ground penetration certificate, traffic management plan;
 - A rescue/recovery plan (if required);
 - A list of likely or known concurrent or conflicting activities and how any conflicts will be managed, including methods of communication with the workers involved in the current or conflicting activity(ies);
 - A list of plant, tools and equipment to be used;
 - The names of key people involved in or managing the work;
 - A list of PPE to be used.
- 5) Submit your Permit application either by scanning the Permit application form and all supporting documentation and emailing it to Permit.office@aucklandairport.co.nz or in person by delivering a hard copy to the Permit Office at 2 Walsh Brothers Place, Auckland Airport.

- 6) The Permit to Work application should be submitted at least 3 working days before the planned date of the work, and no later than 24 hours prior (except for urgent or out-of-hours work, refer to section 3.5 on page 27).

After the Permit is issued by the Permit Issuer:

- 7) Brief all workers involved in the Permitted work. Ensure they understand they are required to work in accordance the requirements and conditions of the Permit at all times.
- 8) Ensure that all workers understand that if they see the conditions of the Permit not being followed at any time, they are required to intervene and/or stop the work.

3.3 Implementing and complying with the Permit to Work

Once a Permit is issued and uplifted, the PICWS must:

- 1) Keep a copy of the Permit and all supporting documentation on site at all times while the work is being done;
- 2) Brief each team member on the requirements of the Permit before any work activity commences. Ensure each member of the team understands they must intervene and/or stop the work if the requirements of the Permit are not being followed;
- 3) Observe the work being carried out and monitor compliance with the requirements of the Permit, this includes reviewing hazards, risks and controls regularly.

The PICWS must ensure a copy of all PTW documentation is kept at the worksite for the duration of the Permitted work.

3.4 Permit Status

An issued Permit will be either Active, Suspended or Closed.

- a) **Active Permit** – A Permit is Active when it has been issued by a Permit Issuer and the Permitted work is authorised to take place.

If a new hazard or risk is identified during the work activity, the work must stop, the JSA must be reviewed, and if a suitable control(s) can be applied within the scope of the existing Permit then the work may continue.

- b) **Suspended (invalid) Permit** – No work activity may take place until the Permit is revalidated or reissued. A Permit is automatically suspended when:

- The work is not completed by the authorised end time and date;
- There has been a serious injury or incident, or a significant near miss during or associated with the Permitted work;
- There has been an emergency evacuation (including false alarms and trial evacuations);
- An AIAL employee has reviewed the worksite and PTW documentation and deemed the work activity is non-compliant with the requirements of the Permit;
- Where there has been a change in the scope or method of work;
- A change in the work environment has introduced new hazards or risks which, after revising the JSA, cannot be effectively controlled within the conditions of the existing Permit. E.g. emergent conflicting work, severe weather conditions etc

- c) **Closed Permit** – A Permit is Closed when the scope of the work is completed, all required close-out checks have been made and all signatories have signed it off as Closed.

3.4.1 Revalidation of a Suspended Permit

- 1) Revalidation of a Suspended Permit is required if the Permit is Suspended for any reason given in section 3.4. (b) above, other than as a result of an evacuation (see below). In this case, the PICWS must:
 - Review the JSA; and
 - Return the Permit and all supporting documentation to the Permit Issuer for revalidation.
- 2) Revalidation of a Suspended Permit may not be required **ONLY** in the event of returning to the worksite after an evacuation. In this case, the PICWS must:
 - Review the JSA; and
 - If the conditions of the worksite, the hazards, risks and controls are unchanged from prior to the evacuation the work may recommence in accordance with the requirements of the existing Permit;
 - If there is any doubt, return the Permit and all supporting documentation to the Permit Issuer for revalidation.

3.4.2 Closing the Permit

On completion of the work, the worksite must be cleared by the PICWS and made ready to return to normal operations. Prior to closing the Permit, the worksite must be inspected by the Area Authority, who will ensure that it is safe to return to normal operational use. Closing the Permit includes:

- Confirming that the work has been completed to the required standard;
- Confirming the worksite has been cleared of all equipment and materials related to the Permitted work, and is fit to return to normal operation;
- Signing the End of Job Inspection section of the Permit (PICWS);
- Returning the Permit documentation to the Permit Office;
- Signing the Close Out section of the Permit (Permit Issuer);
- Updating and filing the Permit and all supporting documentation in the Permit Office.

3.5 Urgent/ Out-of-hours work

Auckland Airport is a 24 hour, seven days a week operation and urgent high risk or non-routine work may need to be completed outside normal Permit Office hours.

In such cases the worker who is called in for the urgent work must:

- Be suitably qualified and competent to perform the work;
- Understand and comply with all requirements to complete the work safely;
- Complete a JSA to identify any potential hazards, risks and controls;
- Determine whether any additional resource or equipment is required to complete the task safely;

- Advise by phone one or more of the senior people listed below the nature of the work to be undertaken and a summary of the JSA that has been completed, and obtain approval from the Senior Person; and
- Record the approval in either the documented JSA or the Work Order

prior to commencing any work activity.

3.5.1 List of Senior People who may approve urgent/out of hours work

- On call Engineering Services Manager
- Duty Airport Operations Shift Manager
- Duty Airfield Operations Team Leader
- Relevant Project Manager.

4 Confined Space Requirements

Due to the high risk nature of entering a Confined Space, all entries require a Permit, this includes providing the Permit issuer with the relevant supporting documentation:

- Permit to work application
- Rescue/Recovery plan
- JSA for entry into the Confined Space
- Gas testing record
- Site locations marked up on AIAL site map.

Depending on the work being undertaken in the Confined Space, there may be other Permits required; this will be established through the SOP or JSA documentation.

4.1 Confined Space controls

1. All known Confined Spaces will be identified on the **Confined Space register**.
2. There will be “**Danger – Confined Space**” signage at each **entry point**; and in a location where it is **visible when the Confined Space is open**.
3. Workers must be both **mentally and physically fit**. It is the **workers responsibility** to advise their supervisor or manager if they are not fit to work in a Confined Space.
4. Workers involved in Confined Space work must be **trained** to NZQA standards 17599 and 25510 or an equivalent qualification. They must also be trained to carry out the task assigned to them as required.
5. There must be a **communication plan** in place which enables:
 - Communication between workers inside and the standby person outside the Confined Space;
 - Help to be summoned in an emergency; and
 - Rescue procedures to be implemented in case of an emergency.
6. **Atmospheric testing** must have taken place to ensure that the atmosphere has a safe oxygen level of 20.9% and is free from both toxic and flammable vapours.
7. There must be **ongoing monitoring** of the atmosphere while the work is being undertaken.

8. If **decontamination** of the Confined Space is required, this must be done **before** entering the Confined Space and certified by a trained person.
9. If there is a possibility that **contaminants can enter** the Confined Space then they will need to be **isolated** from the Confined Space. Isolation methods include:
 - Complete disconnection of pipes or ducts;
 - Insertion of blanks;
10. If **mechanical or electrical equipment within the space** could be operated while the workers are in the Confined Space, it needs to be **isolated by the equipment owner** through the lock out process and an isolation checklist should be signed off.
11. **Any method of isolation that is used must be tested to ensure it is reliable, effective and cannot be bypassed by other persons in the vicinity.**
12. At least one **safety observer** must be assigned to the task.
13. All **electrical equipment** used in a Confined Space must be **intrinsically safe**, appropriate to the work performed, **maintained** in proper working order.
14. **Workers are responsible** for ensuring that the equipment is **used and maintained** in accordance with the manufacturer's instructions, checked visually for any defects and/or excessive wear, and confirm any expiry dates.
15. Any equipment that is **damaged, worn or outside of calibration date** shall be immediately **withdrawn from service** and usage prevented (e.g. locked out or disposed of).
16. **Access** to the Confined Space must be large enough to allow **workers wearing the necessary equipment** to climb in and out easily, and provide ready **access in case of emergency**.
17. If **flammable/combustible materials** are required for use in a Confined Space, they must be kept to a **minimum and cannot accumulate**.
18. **Smoking is prohibited in Confined Space.**
19. There must be **adequate and suitable lighting** in the Confined Space.
20. All **electrical equipment** must be protected by **residual current devices (RCD)**.
21. Use of **required PPE and/or RPE** needs to be assessed once other controls have been agreed on.
22. Use of a **breathing apparatus** must be notified to **Worksafe NZ** as particularly hazardous works.
23. There must be an **appropriate emergency/rescue procedure** to facilitate an evacuation or rescue.
24. All workers identified on the PTW must be aware of and trained to the emergency rescue procedures and equipment as specified.
25. On completion of works and the Confined Space entry, the site must be returned to operational use and be safe for any other users of the area.

5 Working at Height requirements

Working of a properly constructed or engineered work platform does not require a Permit, this work can be done by completing a JSA or working under a SOP.

Any other work at heights or instances where Working at Height could affect other workers, airport users etc. will require a Permit.

To be issued a Permit, the Permit Issuer must be supplied with the relevant supporting documentation:

- Permit to work application
- Rescue/recovery plan
- JSA or SOP for the Working at Height
- Site location

5.1 Working at Height Controls

1. All workers Working at Height above 5 metres (measurement taken from the ground to the highest platform a person could fall) are required to have notified Worksafe NZ;
2. Any equipment being used must be checked and functioning properly. Any tools or equipment liable to fall should be suitable constrained or restrained;
3. Barriers and signs should be erected to prevent the passage of other persons in the area;

Work from the ground

Where practicable:

4. Adapt tools and equipment to give workers the ability to work from the ground;
5. Assemble/construct on the ground and lift to height;

Scaffolding

6. Scaffolding needs to be designed and erected to suit the type of work to be carried out, the site conditions and the anticipated workload;
7. A Permit is required if scaffolding >2m in height, is to be erected or dismantled in or directly adjacent to a live operational area;
8. A worker erecting scaffolding over 5m (from the ground to the highest component) must hold the appropriate class of certificate or competence (COC) for that type of scaffolding;
9. Training required for workers erecting scaffolding less than 5m are required to be competent to erect the type of scaffolding:
NZQA standards that can assist in demonstrating competence, these are:
 - US 9184 – Erect and dismantle non-notifiable pre-fabricated frame scaffolding up to five metres in height;
 - US 13016 – Demonstrate knowledge of the erection and dismantling of scaffolding up to five metres in height;
 - US 13053 – Erect and dismantle scaffolding up to five metres in height.

10. Before working from the scaffold erected certified scaffolder, the certified scaffolder must issue the client with a handover certificate;
11. All scaffolds, regardless of height, must have a tag (scaff tag) clearly displaying important safety information at access points (minor scaffold may be excluded from this if appropriate to the situation);
12. Workers erecting the scaffold, who are not within the confines of the scaffold must have appropriate fall protection (i.e. harness systems);
13. Pre-start checks must be completed daily to identify any risks;
14. Scaffolding inspections minimum frequencies:

Scaffold Type	Inspection Frequency	Inspection Done By
All scaffolds, regardless of height, that are in use for a week or more	<ul style="list-style-type: none"> • Weekly while in use; • Monthly while set up but not in use; • After each structural alteration, repair, addition or change of anchorage; • After any storm or event that could adversely affect the safety of the scaffold; 	Certified scaffolder or competent person depending on the type of the scaffolding.
Notifiable scaffolds	As above	Certified scaffolder.
Suspended scaffolds	As above and before first use	Certified scaffolder.
	Daily as part of the pre-start check	The Competent User

15. Any scaffolding that does not satisfactorily meet inspection requirements, or has been damaged must be taken out of service and may not be used until repairs have been done;
16. Under no circumstances is a worker permitted to alter a scaffold erected by a certified scaffolder;

Edge protection

17. Proprietary and guardrail systems are required to be installed by a competent worker;
18. The system need to be appropriate and adequate for the Working at Height risk;
19. All edge protection must have hand rails, mid-rails and toeboards;

Mobile Elevated Work Platform (MEWP)

20. Pick the right MEWP for the job;

21. Never use an MEWP that doesn't have a current and legible certification or a six-monthly test certificate;
22. The worker operating the MEWP must be competent to operate the machine and hold the relevant training. Training can include NZQA unit standard courses or other approved courses;
23. Prior to each use MEWP a pre-operation inspection must be undertaken and recorded in the MEWP's logbook;
24. Harnesses must be used in self-propelled boom lifts, trailer mounted boom-lifts;
25. MEWPs must not be used within 4m of live power lines and if work is required within 6.4m of live power lines a competent Safety Watch must be present;
26. Exclusion zones and/or the use of Safety Watches must be used when working in close confines of other workers or the public;

Forklifts platforms (man cage)

27. Forklift platforms can only be used where it is not practicable to use scaffolding or MEWP's;
28. The forklift must have a load rating five times the weight of the cage plus its SWL;
29. Where there are multiple forklifts on site that may be non-compatible, a system shall be implemented to prevent the cages being used on non-compatible forklifts;

Crane lift platforms

30. There must be clear communication between the operator and workers carrying out the task, through line of site or telecommunication at all times;
31. Workers in crane lift platforms must wear a suitable harness with lanyard attached to the hook;

Harness systems

32. A Permit is required for all harness work;
33. There must be a documented recovery/rescue plan to support the Permit application;
34. All workers working in a harness must be trained and competent in the use of harnesses:
 - NZQA standards that can assist in demonstrating competence, these are:
 - US 23229 – Use a safety harness for personal fall prevention when working at height;
35. All workers involved in planning, installing, operating fall arrest systems and supervising staff must be trained and competent:
 - NZQA standards that can assist in demonstrating competence, these are:
 - US 15757 – Use, install and disestablish proprietary fall arrest systems when working at height;

36. The harness must be inspected before use, and be within its certification date (1 year);
37. Workers must be attached to a certified anchor point, that has been certified and tagged by a competent person;
38. Fall arrest should only be considered when total restraint is impracticable;
39. There must always be another worker present when a worker is working in a harness;

Step platforms

40. Should be considered before using a ladder;

Ladders

41. Ladders must only be used for access and low-risk, short duration tasks;
42. Ladders must be of trade or industrial standard and be rated at not less than 120kg;
43. Ladders must be checked before use and after any incident to ensure they are in good working order;
44. Workers on ladders must at all times maintain 3 points of contact;
45. Ladders for access must be secured at the top and be footed by another worker for the duration of the work.

6 Hot Works Requirements

As Hot Work has the potential to affect airport operations as a whole, a Permit is required for all Hot Work not completed in a designated workshop or temporary hot works area.

To be issued a Permit, the Permit Issuer must be supplied with the relevant supporting documentation:

- Permit to work application
- Rescue/recovery plan
- JSA or SOP for the hot work
- Site location

The length in which a Permit can be issued is up to the Permit Issuers discretion (maximum 7 days).

6.1 Hot Work Controls

Designated Hot Work Areas

It is preferred that all Hot Work is carried out in designated Hot Work Areas, in this situation the Hot Work can be completed without a Permit, using an approved Standard Operating Procedure (SOP).

Designated Hot Work Areas will be clearly signposted and will meet the requirements defined above (Designated Hot Work Area definition).

When planning Hot Work consideration needs to be given to whether the work can be done in the Designated Hot Work area and moved to site, if not, the options below should be considered:

Temporary Designated Hot Work Areas

Temporary designated Hot Work areas may be authorised when necessary for large project/construction works. The temporary designated Hot Work areas must meet the requirements of a designated Hot Work Area and must have:

1. **Defined boundaries** in which the Hot Work will take place;
2. An **assessment** conducted by persons **competent in fire hazards** and endorsed by the H&S Manager;
3. The **approval documented and displayed** at the area;
4. A **monitoring programme established** to ensure compliance with Hot Work conditions;
5. An **annual review**.

Hot Works in Non-Designated Zones

Where it is not practicable to carry out Hot Work in a designated area (permanent or temporary), the following minimum controls must be implemented:

6. A **JSA and Permit** must be completed;
7. A Permit will **not** be issued when relevant authorities issue a "**Total Fire Ban**";
8. The Permit must be supported with a **rescue/recovery plan**;
9. Where there is **adverse weather or environmental conditions** that create a **significant fire risk** (e.g. high temperatures, low humidity or gusty wind) Hot Work should be **rescheduled or additional fire controls** implemented;
10. **Gas cylinders** that are to be used while welding must be **restrained and secured** against movement at all times during **storage, transport and use**;
11. **Gas cylinders** must **not be** positioned across **access ways** or **traffic areas** or **transported within closed vehicles**;
12. All bottles, hoses and connections relating to welding equipment is to be **checked** to ensure they are **connected properly** and **ready for safe use** prior to undertaking Hot Work;
13. **Flash back arrestors**, suitable for the types of equipment used are to be fitted to both **oxygen** and **fuel gas lines** at the **regulator outlet** and **between the blowpipe and hose**;

14. A **Safety Watch** must be assigned to monitor the Hot Work, they must **not have any other duties** and have **direct line of site** with the work being carried out;
15. The **Safety Watch** must be maintained for a **minimum of 30 minutes after** the Hot Work has stopped;
16. Depending on the nature of the Hot Work there may be a **requirements for multiple Safety Watches**, this will be established in the JSA and Permit process;
17. **Gas testing** is required in areas where **flammable gases, liquids (vapours)** are, or have been previously **stored**, prior to and during the Hot Works;
18. **Portable hand-held fire extinguishers** of the appropriate type are required for carrying out Hot Work and must be **readily available** at the worksite;
19. **Fire extinguishers** must be **in addition** to those provided for the normal protection of the building;
20. **Combustible materials** (paper, dusts, rags and flammable spills) must be **cleaned up and moved**, where possible at least a 10m radius for ground level work, and 15m radius for elevated work;
21. If **combustible materials cannot be cleared** from an area, the area must be **covered** with a **fire resistant blanket** to prevent spread of sparks;
22. There must be **adequate ventilation** in place to remove all fumes or gases that are generated as a result of the Hot Work;
23. Any Hot Work carried out in a **Confined Space** must be the minimum requirements of the AIAL Confined Space requirements;
24. If there is the **potential for sparks** and/or **hot materials** to enter **conveyors** and/or **ducting** system they must be **isolated** and **cleared** of all combustible materials;
25. **Appropriate screening** is put in place to safeguard other workers from exposure to **arc flash**;
26. All persons carrying out Hot Work shall wear **PPE** that is fit for purpose for the work being completed;

Hot Work on Airfield Movement Areas

Under no circumstances will hot work be permitted within 50 metres of an aircraft while refuelling. At all other times a 15 metre fire precaution area is to be observed around an aircraft and/or fuelling equipment. No naked flames are to be permitted within this zone.

The relevant airfield rules must be followed and permissions obtained before considering any welding work, hot mix work or maintenance work using heating equipment with naked flame on/adjacent to the airfield movement area.

Hot Work in Prohibition Zones

Where there is no alternative to performing Hot Work in a 'Hot Work Prohibition Zone', a plan will be developed and approved by the Area Manager and Engineering Manager.

Fire Systems Impairment

Where a fire system impairment will be required, a fire systems isolations certificate shall be completed and authorised by the appropriate AIAL Engineering Services or AD&D personnel.

7 Excavation and Ground Penetration requirements

All Excavations or ground penetrations deeper than 300mm require a permit.

To be issued a Permit, the Permit Issuer must be supplied with the relevant supporting documentation:

- Permit to work application
- Rescue/recovery plan
- Ground Penetration Certificate (GPC)
- JSA or SOP for the Excavation Work
- Site location

7.1 Excavation and Ground Penetration controls

1. Any excavation **1.5m or greater**, that has a **depth greater than horizontal width** is required to be notified to **WorkSafe NZ** as **Particular Hazardous Work**;
2. Prior to works commencing an **assessment** needs to be undertaken to determine whether the **soil** requiring excavation is **contaminated**;
3. All **underground hazards** (pipelines, electric cables and services etc.) have been **identified, located** and if necessary **isolated**;
4. A **Safety Watch** must be assigned to the excavation if underground hazards are identified;
5. Consideration should be given to **expose underground services** using **water or air vacuums**;
6. **Hand digging** only within **2m** of identified underground hazards;
7. Any **equipment** (including machinery and plant) being used must be checked and **functioning properly**;
8. All excavations must be **fenced off** with **appropriate signage** to prevent the **unauthorised access** from the public, these fences must:
 - Have a secure supportive top and bottom rail;
 - Have the top rail located at a minimum of 1m above ground level;
 - Have the bottom rail located a maximum of 100mm above ground level;
 - Be continuous around the excavation;
9. A **competent person** must make an assessment as to the best way to **control the risk of collapse** either through **benching** and/or **battering, shoring or trench shields**. Consideration needs to be given to the:
 - Soil type;
 - Soil moisture content;
 - Planned height of the excavated face;
 - Any surcharge loads acting on the excavated face;

10. If **shoring** for an excavation is **designed to carry extra loads** (soil, vehicles and spoil) than there must be **1m between the excavation and loads**;
11. If **shoring** for an excavation is only **designed to carry soil loads**, then **extra loads** (vehicles, spoil etc.) must be a **minimum of 1m outside the zone of influence**;
12. A **competent person** must **regularly inspect** the soil condition and the state of control for **signs of ground collapse**;
13. There must be a **safe means of access** to the excavation;
 - Up to 1.5m deep, provide ladder, stairway or ramp access and egress;
 - 1.5m or more deep, provide ladder or stairway ramp access and egress;
14. There must be controls in place to **prevent workers from falling** into an excavation;
15. All **mobile plant** used must be **fit for purpose** and in **good working order**;
16. Mobile plant **must not operate or travel near the edge** of an excavation unless **shoring can support such loads**;
17. Where practicable, an **exclusion zone** must be set up around mobile plant, if not practicable there must be a **spotter in the immediate area** of the mobile plant. The spotter must be in **constant contact** with the mobile plant operator;
18. All mobile plant must meet **WorkSafe NZ's ACOP for Operator Protective Structures on Self-Propelled Mobile Mechanical Plant**;
19. Mobile plant must **not work within 4m of overhead services**, unless they have received a **close proximity permit** from the service owner;
20. Excavator operators must ensure that the **quick hitch is in good working order** and the **safety pin is securely in place** or the **automatic system has engaged correctly**;

Adequate controls need to be put in place if there is the **potential that water can collect in an excavation**.

8 Permit System Audits

Auditing is an integral part of the PTW system and is a documented activity to verify the requirements of the system are being applied and met:

- Have been established
- Have been documented
- Is effective and being adhered to
- If inconsistent, initiates corrective actions.

PTW audits check for compliance with the system and flags up any non-compliant issues for immediate remediation.

There are three levels of audit that can be applied:

1. Level 3 Weekly Monitoring – this level of auditing examines each individual site for compliance with the PTW system. These checks are conducted in the form of a field audit of a randomly selected permit. The Level 3 audit checks for the following at the worksite:
 - The PTW certificate displayed correctly at the worksite and is valid as per the dates displayed.
 - The certificate authorised and endorsed by the correct permit signatories.
 - Hazard ID and controls are clearly identified through the JSA and associated checklists.
 - All workers on site must be signed onto the JSA.
 - The specified safety equipment is available and functional at the worksite.

The Permit Issuing officers, the Area Authority or a relevant Auckland Airport Manager may conduct Field audits at any time. As a guide 10% of new Permits issued every week shall be audited for compliance with the overall PTW system and any discrepancies brought to the notice of the PICWS or Area Authority. Where required corrective actions may be recorded and assigned in risk manager to the appropriate AIAL person.

2. Level 2 Three monthly audits of the PTW System – this audit checks for the compliance of the PTW management systems. The Level 2 audit checks for the following at the PIO:
 - Non-compliant items from any previous Level 2 audits have been actioned.
 - Level 3 audits are carried out in accordance with this manual.
 - Permit issuers, PICWS and Area Authorities are competent.
 - Relevant PTW documentation is current and easily available at the PIO.
 - Management systems associated with the PTW system are functioning correctly.

The Auckland Airport Compliance manager, H&S Business partners or a suitably trained senior manager may conduct a Level 2 audit. The result of the audit and any non-compliant items shall be recorded in RM and any actions arising shall also be assigned through RM.

3. Level 1 Annual Audit – this is an audit carried out annually at the corporate level by a member of the leadership or senior management team. These audits are to ensure compliance with the relevant legislation and consistent application of the system across the business. The Level 1 audit shall check for the following:
 - The management systems are being applied consistently through the PIO.
 - Training and competency of the users of the system.
 - Documentation in line with the current legislation.
 - Non-compliance issues and action time.
 - Safe work practices.

A record of findings through these audits will be maintained with the Auckland Airport H&S Manager. Persons conducting audits must be familiar with the PTW system or should be assisted by a suitably trained person.

APPENDIX 1

PTW Contact List



Contact	Contact Details	
Permit Office	Phone	09 257 7046
	Email	Permit.Office@aucklandairport.co.nz
	Address	2 Walsh Brothers Place, Auckland Airport
H&S Team	Email	Health&Safety@aucklandairport.co.nz
H&S (PTW) Advisor	Mobile	027 200 8468 027 551 1218
AIAL H&S Manager	Mobile	027 807 3043
AIAL H&S Business Partner	Mobile	027 704 5268
		027 541 7752
AIAL Emergency Services		09 256 8777 or 98777
NZ Emergency Services		111

Risk Assessment Matrix



		Severity				
Likelihood		Environmental	Damage / process disruption	Injury		
		5	4	3	2	1
Almost certain	5	25	20	15	10	5
Highly likely	4	20	16	12	8	4
Possible	3	15	12	9	6	3
Unlikely	2	10	8	6	4	2
Highly unlikely	1	5	4	3	2	1

Permit to Work

**PTW No.**

(Issued by permit office)

This Permit, associated drawings, certificates and documents MUST be displayed at the worksite throughout the length of the permit

Previous PTW No.
(If Applicable)

Print Details of work

Person in charge of Work Site (PICWS)	
Company	
24/7 contact number	

The person identified below has inducted the PICWS to site and has reviewed all PTW documentation before submitting to Permit Issuing Office

Area Authority	
Contact number	
Designation	

Describe Work (Note: Only the below work is to be done)

This permit is valid from (one week max)	Date from	Date to
Work times	Start time	End time

Site/Area/Location:

Tools / Equipment to be used:

The tasks below apply to the work (Rescue and recovery plan to be completed in case of works highlighted with a *):

<input type="checkbox"/> Confined space entry/work*	<input type="checkbox"/> Structural penetration
<input type="checkbox"/> Working at height*	<input type="checkbox"/> Traffic system impairment
<input type="checkbox"/> Ground penetration/Excavation*	<input type="checkbox"/> Working with hazardous substances (other than asbestos)
<input type="checkbox"/> Hot work*	<input type="checkbox"/> Asbestos removal
<input type="checkbox"/> Group or high voltage isolation*	<input type="checkbox"/> Firearms
<input type="checkbox"/> Work on high voltage or group isolated systems*	<input type="checkbox"/> Complex crane lifts*
<input type="checkbox"/> Fire system isolation	<input type="checkbox"/> Airfield/Runway incursion (intrusion)
<input type="checkbox"/> Demolition	<input type="checkbox"/> Other: Please explain

Hazards: As identified on attached JSA or listed below

Is notification of "Particular Hazardous Work" required as defined by Worksafe

☐ Yes ☐ N/A

Apron tower notified (for all airfield works)

☐ Yes ☐ N/A

Date notified:	Type of work notified:	Worksafe Reference number

For any enquiries or assistance contact Auckland Airport Permit Officers at permit.office@aucklandairport.co.nz

List phone numbers to contact in case of an emergency												
Incident Control room	09 256 8777	Emergency meeting point: <i>case of evacuation)</i>										
Airside Security (AvSec)	09 255 6000											
Permit Office	09 257 7046											
Apron Tower	09 256 8990											
Nearest fire extinguisher(s) located at: <i>(List Number, Size & Type e.g. 2 x 9kg Dry Powder)</i>												
Concurrent / Conflicting Activities <i>(List persons/departments notified if any):</i>												
Rescue and Recovery processes (In case of emergency; List equipment) attach additional sheet if required												
List the reference documents and certificates for this task (attach if necessary)		E.g. Traffic management plans, fire system isolation certificates, SOPs etc These must be approved by relevant manager before submission.										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%; background-color: #f0f0f0;">Permit Signatories</th> <th style="width: 30%; background-color: #f0f0f0;">Area Authority</th> <th style="width: 40%; background-color: #f0f0f0;">PICWS</th> </tr> <tr> <td style="vertical-align: top;"> By signing this all signatories confirm that they and all those supervised, understand and agree to abide by the Permit conditions and all applicable attachments <i>(Can be signed off before work date):</i> </td> <td style="height: 40px;"> </td> <td style="height: 40px;"> </td> </tr> <tr> <td colspan="3" style="background-color: #e0f0ff;"> Permit Issuer <i>(Print name & sign)</i> </td> </tr> </table>				Permit Signatories	Area Authority	PICWS	By signing this all signatories confirm that they and all those supervised, understand and agree to abide by the Permit conditions and all applicable attachments <i>(Can be signed off before work date):</i>			Permit Issuer <i>(Print name & sign)</i>		
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Return original Permit and all Forms to the Permit Officer												
Permit Close Out By Permit Issuer: <i>For permit office use only</i>												
Permit Officer Signature	Position	Time	Date									

