THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

The University of Newcastle

Permit to Work System

UON IFS 002

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THE UNIVERSITY OF NEWCASTLE AUSTRALIA

Infrastructure and Facilities Services

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1. Introduction

The University of Newcastle (UON) Infrastructure and Facilities Services (IFS) is committed to ensuring the health and safety of employees, students, visitors and contractors. The Permit to Work (PTW) system is a structured process designed to control the risks applicable to specific activities of employees and contractors on all University-controlled sites, or when a site controlled by another entity has the ability to impact the University's core business, for example excavating near underground high voltage cabling or gas mains.

The PTW system supports the University's Health and Safety Management System, aiming to minimise and continually reduce the incidence of occupational injuries and illnesses and to ensure the use of safe working practices in high-risk activities undertaken on behalf of the University.

The PTW system applies when high risk work is carried out including but not limited to any work in confined space, demolition, excavation, hot works, entry to a substation, penetration, isolation, working at heights, asbestos and tree trimming, pruning or removal.

The PTW system as referred to in this document is embedded in the Universities Contractor Induction system **Beakon**, To access the PTW system within **Beakon**, a contractor company must have a current active account in the Beakon software system, a contractor employee requiring a permit to work must also have an active compliant employee account with all required inductions completed.

Registration in Beakon:

https://www.newcastle.edu.au/engage/business-and-industry/do-business-with-us/tenants-and-vendors/induction

2. Purpose

This document is designed to provide a guide and overview of the PTW system. The PTW system is a formalised process to identify high risk activities and to ensure that appropriate controls are in place to remove or control the risks. The PTW system is designed to prevent the occurrence of incidents, illness or injuries to University personnel, students, visitors or contractors; and to prevent damage to University property. This document supplements the mandatory Induction requirements for all contractors.

3. Scope

The PTW system applies to all University campuses; and any designated high risk maintenance or capital works activities which are undertaken within areas controlled by the University. This guide outlines the University's PTW system, and is applicable to all staff and contractors undertaking works activities on University-controlled property.

4. Definitions

Asbestos A group of silicate minerals belonging to the serpentine and amphibole mineral groups which have crystallized in the asbestiform habit, causing them to be easily separated into long, thin, flexible, strong fibres when crushed or processed. Used in construction works from 1945 - 1980; and known for its potential to cause lung cancers.

Beakon The Universities electronic software solution for Contractor Induction and capture all PTW applications and permits as issued.

Confined Space An enclosed or partially enclosed space that is not intended for human occupancy and may have restricted entry or exit. There may be risk of:

- an oxygen concentration outside the safe oxygen range;
  an atmosphere containing potentially harmful contaminants such as flammable gases or airborne materials, that may result in fire, or cause impairment, loss of consciousness or asphyxiation; engulfment in a stored free-flowing solid or a rising level of liquid that may cause suffocation or drowning.

Construction Work Any work carried out in connection with the construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure.

Contractor Responsible Person The person from the contracting firm who has responsibility to ensure the work is performed in a safe manner and in accordance with the documentation provided, including the PTW application.

Danger Tag/Lock Danger Tags/Locks are intended to give personal protection to an individual working on a system that has the capacity to become energised and cause injuries. Tags/Locks are attached to the point of isolation of the system whenever personal danger could arise from that system becoming energised. They warn others that any use of the device may endanger the worker who attached the tag/lock. Tags/locks should only be in place whilst work is underway and can only be removed by the person who attached the tag/lock. Each person working on the circuit must attach their own tag/lock. Each person working on the circuit must attach their own tag/lock.

Demolition The complete or partial dismantling of a building or structure, by pre-planned and controlled methods or procedures.

Disruption Notice	Any works which have the potential to stop or disrupt normal University business must be planned and assessed prior to proceeding. A Disruption Notice is part of the Disruption Notice / Permit to Work application, and must be completed and authorised prior to these activities moving forward.
Disruption Notice / Permit to Work application (DN / PTW application)	The Disruption Notice / Permit to Work application represents the process to be undertaken for any works which have the potential to disrupt University business; and/or are deemed high risk activities for which a permit is required. The process includes capturing all procedures and documentation that must be undertaken and completed prior to undertaking such tasks or work. The process authorises work only after safe procedures have been defined and they provide a clear record that all foreseeable hazards have been considered
Excavation	Excavation work generally means work involving the removal of soil or rock from a site to form an open face, hole or cavity using tools, machinery or explosives. Trenches, bores and tunnels are all excavations.
GFIS / GIS	Graphical Facilities Information System (GFIS) / Geographical Information System (GIS) is a system designed to capture, store, manipulate, analyse, manage and present all types of spatial or geographical data. UON maintains a GFIS / GIS of the spatial survey data relevant to the Callaghan site and physical survey information for the Ourimbah site.
Hazard Identification	A document or process used to identify any High Risk works that require a full SWMS be completed before work commences.
Hot Works	Grinding, welding, thermal or oxygen cutting or heating, and other related heat-producing or spark-producing operations.

High Risk Works

High risk works includes the 18 hazards identified by Worksafe NSW under high risk construction work. Works that:

- involves a risk of a person falling more than 2 metres, or
- is carried out on a telecommunication tower, or
- involves demolition of an element of a structure that is load-bearing or otherwise related to the physical integrity of the structure, or
- involves, or is likely to involve, the disturbance of asbestos, or
- involves structural alterations or repairs that require temporary support to prevent collapse, or
- is carried out in or near a confined space, or
- is carried out in or near:
    i. a shaft or trench with an excavated depth greater than 1.5 metres, or
    ii. a tunnel, or
- involves the use of explosives, or
- is carried out on or near pressurised gas distribution mains or piping, or
- is carried out on or near chemical, fuel or refrigerant lines, or
- is carried out on or near energised electrical installations or services, or
- is carried out in an area that may have a contaminated or flammable atmosphere, or
- involves tilt-up or precast concrete, or
- is carried out on, in or adjacent to a road, railway, shipping lane or other traffic corridor that is in use by traffic other than pedestrians, or
- is carried out in an area at a workplace in which there is any movement of powered mobile plant, or
- is carried out in an area in which there are artificial extremes of temperature, or
- is carried out in or near water or other liquid that involves a risk of drowning, or
- involves diving work

High risk works additionally includes any other activities identified as high risk by risk assessment.

Isolated

Disconnected from all possible sources of energy supply and rendered incapable of being made energised without premeditated and deliberate action.

Isolation

A method that blocks the flow of liquid, gas, electrical current or other stored energy to ensure that a device or area is rendered safe for maintenance activities.

IFS Representative	A UON employee who has engaged a contractor to undertake works; or an employee of the UON maintenance and facilities services contractor who has engaged a contractor to undertake works for UON.
Lock-out/Tag-out	A work safety procedure designed to safeguard employees from the unexpected powering or start-up of machinery and equipment or the release of stored energy during service or maintenance. Lock-out refers to the lock which is placed on the machinery or equipment by the person undertaking the work; and which must only be removed by that person.
Out of Service Tags	Out of Service tags are installed on equipment, plant or machinery that is inoperable, faulty or unsafe and must not be used. Equipment or machinery on which an Out of Service tag has been placed must not be used or operated. Tags should remain on the equipment until it is deemed safe after repair and testing. Out of Service tags must never be used for protection of a person/s. Out of Service tags can be removed by anyone who has first-hand knowledge that the equipment has been made safe since the tag was placed.
Penetration	Causing a hole, irrespective of size, in concrete or masonry floors or walls, ceilings or roofs.
Permit	The electronic document issued in the Beakon software authorising a person to undertake specific activity in a designated area.
Permit to Work System	The Permit to Work software (Beakon) system is a formalised process implemented to control work and access to identified areas designed to prevent incidents in the workplace. The software system is used to control certain types of work or work areas that are potentially hazardous.
Permit applicant	A person who completes the Permit application
Permit issuer	A person who is authorised to finalise and issue a Permit
Permit receiver	A person to whom a Permit is issued.
Risk assessment (RA)	A document or process used to identify, assess and control risk.
Roof access	Access to a building roof for designated work.
Safe Work Method Statement (SWMS)	A document that sets out the high risk construction work activities to be carried out at a workplace, the hazards arising from these activities and the measures to be put in place to control the risks.
Safe Work Procedure (SWP)	A document which is prepared for repetitive tasks. It identifies hazards and details the step by step procedures to be followed to control the risks. An SWP will generally be prepared for individual tasks rather than larger complex jobs.

Visitor A visitor is any person who has not undertaken the Contractor General Induction. Visitors may not conduct any work on site and must always be accompanied by a fully inducted contractor or IFS Representative.

Working at heights Any work which is undertaken at an elevated level. The risk of serious injury is significantly increased when working at heights greater than 2 metres. Additional risk is presented from falling objects.

Urgent Work Work which is required to be undertaken without delay to respond to, prevent or minimise risk to people or property; or is required to prevent significant financial or reputational loss.

UON Contact UON staff member who is responsible for the works which are to be undertaken. This may be the Project Manager, Facilities Coordinator or other relevant person who has instructed these works be done.

UON Representative UON staff member who is allocated responsibility to undertake the Permit review

5. Roles and Responsibilities

The PTW system is designed to control the risks from the potential hazards associated with identified high-risk activities. To ensure this system works effectively, individuals involved must understand and actively work to meet their responsibilities. Specific responsibilities detailed below must be followed:

5.1 Legislation

The legal aspects and requirements in this guide are imposed by the *NSW Work Health and Safety Act 2011* and the *NSW Work Health and Safety Regulations 2011.*

5.2 Permit applicant / Permit receiver

The Permit applicant must have a full understanding of the activities to be undertaken; and be competent to complete the Permit application, ensuring:

- They understand the requirements of the Permit.
- All hazards associated with the proposed job have been identified, assessed and controlled.
- An accurate description of work is provided in sufficient detail to identify all of the risks for appraisal by the Permit Issuer. This may be provided as a SWMS or Risk assessment attached to the application in the Beakon software.
- Safe systems of work, in the form of Safe Work Method Statements (SWMSs) have been prepared and provided for the high risk activities to be undertaken. When the Permit application is submitted by a Principal Contractor, the Principal Contractor shall instead provide their review of the applicable SWMSs.
- Risk Assessments have been prepared and provided for works requiring a Permit which are not deemed high-risk work, eg fire isolation.
- The SWMSs and RAs reflect and appropriately control the hazards specific to this job.

- All personnel associated with the activity are competent; have been fully trained; and are appropriately licensed to undertake the planned activities.
- Consultation has occurred with workers who will carry out the work or are likely to be directly affected by the work activities.
- All personnel associated with the activity have completed the University Contractor Induction / or equivalent Induction included as part of Principal Contractor's induction software system (Beakon); and are in possession of Construction Induction White cards.
- A Beakon Permit application is completed identifying each of the hazards associated with the activity; and confirming the measures to be undertaken to control the risk.

Following receipt of the authorised Permit response from the Beakon

Software, the Permit receiver must ensure:

- Coordination with the responsible IFS Representative for the commencement of activities.
- Required Personal protective equipment (PPE) is available to, and being used by the contractor personnel as required. The recipient shall also ensure that personnel are trained in the correct use of the PPE; and that it is maintained in good condition.
- All equipment detailed in the Permit application and associated documentation is provided; is in good working order; calibrated as required; and fit for purpose.
- Atmospheric testing for Confined Space activities and Hot work activities is performed as identified on the Permit application.
- Supervision of activities is undertaken by a person who is responsible for the safe execution of all operations; has the authority to enforce safe work methods; and comply with any requirements of the Permit.
- Activities are completed in a safe manner, in line with the advice provided in the Permit application.
- Any accidents or incidents are notified immediately to the relevant IFS Representative and University Security where applicable.
- Any changes in conditions which would affect or alter the conditions under which the Permit was issued are notified back to the Permit Issuer for further review.
- Following completion of the task, the work area is made safe; returned to its original condition if reasonable; or that the responsible IFS Representative is notified of any inability to achieve this requirement. The status of the Beakon PTW must altered to reflect completion of the works.

5.3 Permit Issuer

The Permit issuer must review the DN / PTW application for completeness, ensuring:

- All potential hazards have been identified.
- The SWMSs and RAs are specific to the activities outlined in the Permit application; and appropriately address the hazards.
- Contractor personnel are appropriately inducted, qualified and licensed for the planned activities.
- The Permit applicant is made aware of any deficiencies in their application and the required remedial actions, so these can be rectified and the application resubmitted.
- Coordination of review of the application with internal experts, such as electrical assessor, security etc. to facilitate the processing of the application.
- Liaison with University personnel potentially affected by the proposed activity to understand the potential disruption to local University business continuity.

Permit issuers must themselves be familiar with the intended tasks so that they can provide an informed evaluation of the Permit application or refer the permit review to a subject matter expert.

Permit issuers must ensure the impact of the planned work on University activities are assessed and coordinate a suitable time and duration for the activity to occur which considers both the extent of disruption; and the urgency of the activity proceeding.

Permit issuers authorise the application when satisfied that hazard identification and control has been undertaken appropriately; that personnel are appropriately qualified for the tasks to be undertaken; and that a satisfactory time period can be coordinated to minimise disruption.

Permit issuers will conduct periodic inspections of contractor works to ensure that activities are being conducted in line with the commitment made in the Permit application.

5.4 IFS Representative

The IFS Representative is the person responsible for managing and/or co-ordinating the contract or work order. The IFS Representative may also act as the Permit Issuer. The IFS Representative will:

- Confirm the contractor is inducted in the Beakon Software and qualified to complete the required duties
- Confirm the contractors engaged by the University are aware of their responsibilities under the NSW WHS legislation
- Monitor the contracted work by random inspection, verifying that work is undertaken in accordance with the identified safe systems of work. Should any deviation from these safe systems be found, the IFS Representative will take any necessary steps to remedy the situation
- Ensure the completion of contracted works in accordance with the Beakon PTW software system.
- Periodically audit for compliance with the Permit documentation.
- Ensure the contractors have current Workers Compensation insurance as uploaded in the Beakon software.
- Ensure the contractors have current Public Liability insurance to the limits set by the University as uploaded in the Beakon software.
- Ensure consultation and communication is undertaken with local University Representatives potentially affected by the planned works
- Ensure all relevant approvals for works have been obtained and recorded in the Beakon PTW software.

5.5 IFS

Infrastructure and Facilities Services is responsible for:

- Managing the Contractor Induction process in the Beakon software.
- Managing the Permit to Work system in the Beakon software.
- Maintaining a register of roof condition across the University, identifying roof materials, condition and provision of anchor points and static lines.
- Maintaining a register of Confined Spaces.
- Conducting random audits and inspections of contractor records, documents and activities to verify commitments made in Beakon PTW application are being fulfilled.
- Maintaining a register of restricted spaces.
- Maintaining a register of authorised entry spaces.
- Maintaining a register of buildings in which hazardous materials, including asbestos containing materials have been identified in the University.

5.6 HR Health and Safety

The Human Resources Health and Safety Unit is responsible for development and communication of work health and safety policies, procedures and programs to the University community; ensuring that such policies are disseminated, implemented, evaluated and improved; and supporting the safety responsibilities of all units by assisting in identifying and resolving health and safety problems. They provide technical health and safety advice; and recommend remedial action to ensure compliance with standards.

HR Health and Safety will:

- Provide expertise and regulatory guidance to responsible persons.
- Provide technical guidance on the application of the PTW system.
- Determine the requirement to notify, communicate and assist with WorkCover NSW.

5.7 Principal Contractor

Principal Contractors may be granted exemption from the Beakon PTW software process (excluding Excavation Permits) for works taking place within a site for which they have taken control. Refer to Section 12 for details pertaining to Excavation Permits. A Beakon software PTW application is still required for any activities undertaken on behalf of the Principal Contractor external to the controlled site; or which could result in Disruption to University business continuity or normal University activities; or pose a risk to any personnel or property external to the controlled site including but not limited to noise, fumes, isolation within the compound affecting services external to the compound, blocking of roads, excessive traffic etc.

Principal Contractors shall only be granted exemption from the Beakon software PTW application following presentation and review of a thorough Safety Management System and Permit to Work system developed for the site over which they will take control.

6. Inductions

6.1 Contractor Management and worker Inductions

The University of Newcastle has an contractor management induction process in place for all contractors and consultants who perform work at the University. All contractors and consultants must complete the University Contractor compliance and worker inductions prior to performing any work. A visitor does not require an induction if fully escorted by an appropriate officer, not conducting any work, and the ‘visit’ is a once- only event of short duration.

Principal contractors may comply with this requirement by choosing to include the University Contractor Worker Inductions as part of their own General Site Induction. In such instances, completion of the Principal contractor’s General Site Induction will be considered equivalent to completing the University Contractor Induction.

In order to perform work at the University the following applies:

- No construction work will be performed by contractors unless the employee has a valid General Induction for Construction work Certificate ID (White Card);
- The Contractor will complete the University Contractor Induction system (or equivalent); this induction is valid for a 12 month period

- Further inductions will need to be completed for activities where there is a potential for an elevated risk. To complete these Site Specific Inductions you will need to contact your IFS Representative.

The UON Contractor Induction can be accessed at the following link:

https://www.newcastle.edu.au/engage/business-and-industry/do-business-with-us/contractors-and-suppliers/induction

Once the company compliance and worker induction is completed the induction certificate can be printed. The contractor/consultant must attend the IFS Services Building reception with all required identification and qualifications. If deemed suitable, a UON Contractor photo-ID card will be prepared for them.

6.2 LV Electrical and SK Key Induction

The LV Electrical and SK Key Induction can be accessed by the Worker from the Beakon Software system.

Any contractors who will be performing electrical work on site, e.g. working on electrical equipment or switches; needing access to an SK key for entry to plant rooms or distribution boards; or who will be inducted to receive a HV1 or HV2 key must complete this induction. This Induction module is designed to ensure contractors are aware of the hazards and procedures for work on or near low voltage (LV) electrical equipment and substations. Any personnel accessing these areas will be required to undertake this induction.

6.3 Site Specific Inductions

Additional site specific induction may be required for work areas at the University, such as PC2 QC2, NIER laboratories, animal facilities or construction sites. The responsible IFS Representative will advise of site specific induction requirements.

7. General Requirements

Contractors must complete a Beakon Software PTW application for all activities which could potentially disrupt the normal business operation of the University, including traffic or pedestrian access; and for designated high risk maintenance or capital works activities on University-controlled property. The Beakon Software system PTW application can be found:

https://www.newcastle.edu.au/engage/business-and-industry/do-business-with-us/contractors-and-suppliers/induction

7.1 Permits

By reference to legislation, codes of practice, standards, industry practice and Risk Assessments, the University has determined that a Permit is required for the following activities:

- Hazardous Materials related activities
- Confined Space access
- Demolition works
- Excavation work (deeper than 100mm or using mechanical digging).

- Hot works
- HV and LV switch room access
- Isolation of Services - including energy isolation and Isolation of fire detection equipment
- Penetrations (greater than 12mm/½inch width or which will penetrate through a single surface into a cavity)
- Working at heights including roof access
- Tree Management

7.2 Authorisation

Work on activities requiring a Permit may only commence after the appropriate Permit has been authorised and issued by IFS through the Beakon software system.

Authorisation will be cancelled should any conditions change. A review of the Permit will be required in consideration of the new conditions; and a new Permit must be issued prior to work recommencing.

7.3 Associated Documents

A Safe Work Method Statement must be attached to each PTW application for all high risk activities. The only exception to this requirement being, where the permit application is made by a Principal Contractor, the Principal Contractor may instead submit a review of the applicable SWMSs.

Where hazards are identified which do not meet the criteria of high risk works, risk assessment should be undertaken as part of the safety management process. The contractor must demonstrate the way in which relevant hazards are managed under their safety management process by provision of risk assessments, safe work procedures, Job Safety Analysis or other applicable documentation relevant to the Permit application.

Prior to the submission of a PTW application for Excavation, all Services must be located by use of the University's current service provider. Evidence of the location of services must be attached to the PTW application. High risk excavations require positive identification.

Further documentary evidence of safety management systems, training, licensing, equipment maintenance and calibration, must be available for review by the IFS Representative or other authorised University staff-member on request.

7.4 Consultation

NSW Work Health and Safety legislation specifically requires that all personnel whose safety is likely to be affected by activities are consulted prior to these activities being undertaken. Such consultation is required to minimise the impact of these activities and to ensure a safe workplace.

So far as is reasonably practicable, Consultation should be considered with:

- the contractor's own workers or Health and Safety Representatives (HSRs) who are directly affected by the activity;
- Infrastructure and Facilities Services by means of the PTW application;
- other workers who may be affected by the planned activities - to be coordinated by the IFS Representative
- independent experts, designers; other affected PCBUs; managers, OHS Committees as required.

7.5 Preparation of Work Area

Work areas shall be prepared to eliminate or minimise the risk of incident, taking into account the security of the work area for both workers and the public; and the potential for fire, explosion, or exposure of persons to hazardous substances.

Emergency procedures must be developed including means for rescue of persons incapacitated or injured during these work activities; and for response to other emergency incidents such as fire.

The provision of rescue equipment, communication equipment; and other emergency equipment such as required for fire-response shall be made by the contractor in preparation for the work.

Where there is any possibility that the atmosphere of the work area could be restricted or contaminated, atmospheric testing of the work area must be undertaken to identify any flammable or hazardous vapours; and oxygen levels.

The contractor shall identify the need for isolation of any energy sources, such as electrical, hydraulic, compressed air, or gas in their Permit application; and ensure that these sources are fully isolated prior to any work commencing. The University's lockout/tag-out system must be implemented to ensure the safe isolation of these services.

Isolation of fire-detection systems must be identified in the PTW application and coordinated with the IFS Representative and UON Security prior to works commencing.

7.6 Atmospheric Testing, Retesting and Monitoring

Atmospheric testing is required for all Confined Space Permits and for Hot works Permits in hazardous areas. Testing shall be conducted by a person trained and competent in the operation and use of the gas testing equipment. A staged entry into the space for testing may be required where probes cannot access the furthest extent of a space, with initial testing inside the entry to confirm a safe atmosphere, followed by testing of the more remote regions.

Gas testing equipment must be properly maintained and calibrated. Evidence of calibration shall be displayed on the unit. Evidence of calibration shall be made available to the IFS Representative on request.

Atmospheric testing can be conducted prior to commencement of works to assist in identifying the controls to be implemented on the day. Testing for flammable vapours shall take place as late as possible prior to the commencement of Hot works, and no longer than two hours before. This includes continuous testing on all potential sources.

Retesting and monitoring of the atmosphere may be necessary due to the release of hazardous gases or vapours as a result of the works. Retesting or monitoring of the oxygen levels and presence of flammable gases should be made at targeted intervals.

Records shall be maintained of the results of equipment maintenance and calibration; of all atmospheric testing, including the date and time of testing, and the name and signature of testing officer. Records shall be made available to the IFS Representative on request.

7.6.1 Atmospheric testing - Hot Work

For Hot Works the concentration of any flammable gas or vapours shall not be more than 5 per cent of its lower explosion limit (LEL)

7.6.2 Atmospheric testing - Confined Space

Prior to entry to a Confined Space, it shall be ensured:

- Oxygen levels are safe (between 19.5% and 23.5% by volume).
- Any flammable gas or vapour is less than 5% of its LEL; or
- If the flammable gas or vapour is greater than 5% and less than 10% of its LEL, then a suitably calibrated, continuous-monitoring flammable gas detector can be used in the space. If such a gas detector is not available, then all persons must leave the Confined Space.
- The atmosphere is free of airborne contaminants; or
- Any airborne contaminants are below their allowable exposure limit (if any).

Where oxygen levels are below 19.5% or atmospheric contaminants cannot be reduced to below their allowable exposure limits, then entry should only be considered with use of suitable PPE including supplied air.

When oxygen levels exceed 23.5%; and/or flammable gas or vapour exceeds 5% (or 10% as described above), then all persons must leave the Confined Space.

If work ceases for a period of one hour or more, then a new atmospheric test must be conducted.

7.7 Permit Receipt

Following authorisation, the Permit will be electronically issued via the Beakon PTW software system.

7.7.1 Acceptance

Acceptance of the Permit confirms the contractor's understanding of the work to be undertaken; the hazards involved; and the commitment to undertake works according to the controls identified in the application.

7.7.2 Communication

It is the responsibility of the Permit holder to communicate the Permit requirements, including the safe methods of work, to any workers involved in the work identified by the Permit.

Any changes to the conditions in the workplace must be communicated to the Permit Issuer, and the works ceased until such time as a reassessment of the risks can be completed and the Permit reissued.

Communication with local Representatives affected by the work will be coordinated by the IFS Representative.

7.7.3 Arrival at site

Permits must be carried by relevant personnel either electronically or by PDF copies. These Permits provide evidence that authorisation has been given to commence work and must be carried at all times. Contractors are reminded that they are also obliged to carry their UON Contractor Induction Card and Construction White Card.

Contractors should contact the relevant IFS Representative and notify their presence on site, preferably backing up this notice with an email. When working outside normal University operational hours, Security and other relevant staff are required to be informed. Arrangements for access out of normal hours will need to be made in advance with Security via the IFS Representative.

7.7.4 Work commencement

Prior to commencing work, the PTW receiver must ensure that the site is controlled and where required, access barriers and signage are erected to manage the safety of both workers and the public, as identified in the PTW application.

Work must be completed as detailed in the PTW application, and the requirements of the contract or work order. Disruption to University business must be managed as detailed in the Notice of Disruption where applicable.

Coordination of Services isolation; and isolation of fire detection systems, must be managed via the IFS Representative or other personnel as identified by the IFS Representative.

7.7.5 Incomplete works

Should work not be completed within the duration of the Permit, the PTW receiver must communicate this in good time, to the IFS Representative. Together they should determine whether a new PTW can be provided to extend the work; or whether work must cease and the work site be made safe until such time as an additional PTW can be coordinated and authorised.

The PTW receiver must ensure that a new PTW is received before the existing PTW expires, for continuation of the job. Work must not continue without a current PTW.

7.8 Duration

PTW's are valid for a limited period of time, dependent on the nature of the work. If work has not been completed prior to the PTW expiry, a new PTW application must be submitted.

Hot works Permits and Confined Space Permits are valid for a maximum of 8 hours.

7.9 Cancellation

When a PTW is no longer required, the IFS Representative should be informed and the PTW cancelled.

7.10 Work Completion

On completion of the work, and prior to leaving the work site, the contractor is required to make the site safe, and return the site to its original condition if reasonable If there is any impediment to this occurring; the contractor must consult with the IFS Representative.

As part of the Beakon PTW *Completion* process, the contractor must verify that all isolated services have been reconnected, and fire detection systems have been reactivated.

The IFS Representative will notify any contacts within the building or area affected by the work that the work has been completed and that normal operations can resume.

Once activities identified in the PTW are completed, the Permit receiver is required to complete the PTW in the Beakon Software system.

The IFS Representative will verify that the work has been completed to the satisfaction of the project specification or the work order; and that the site has been made safe. This being so, they will sign off the PTW as completed in the Beakon software system.

Should the IFS Representative not be satisfied that the work has been performed to a satisfactory standard, or with the condition of the site, then they will inform the Permit receiver of any remedial actions required.

On completion of work, and prior to the site being returned to service the following check should be completed:

- The work has been completed.
- Any temporary fencing, barricades, excavation holes etc. have been removed and the area made safe.
- All personnel and equipment have been accounted for.
- The PTW has been signed off as being completed by both Permit receiver and UON Representative.
- All affected services and fire-detection systems have been reactivated, inspected and tested as operational.

8. Disruption Notice

A Disruption Notice must be submitted in the Beakon software system for any works which have the potential to disrupt University business. This includes any emergency management procedures such as evacuation routes and assembly points.

All foreseeable impacts must be listed in the Impact section of the permit for review by an IFS representative prior to the activity taking place. Consultation with the IFS Operations team; Health & Safety team and/or Risk team may be required to fully understand the impact on services and business operations; and plan any required mitigation measures.

Disruption may be caused directly by such causes as interruption of traffic flows or emergency evacuation routes; or indirectly by requiring interruptions to Services.

Disruptions from interruptions to power, gas, water, communications and air conditioning can cause serious loss to ongoing University business. Depending on the time of year, the affected service, and/ or function of that service, the extent of disruption notification periods may be anything from immediate for service failure, to several weeks.

For site wide interruption OR whole of building interruptions, extensive notice periods apply. The longer the interruption the greater the notice required.

9. Hazardous Materials

Staff and contractors are required to comply with the UON Hazardous Materials PTW system.

The identification of materials containing asbestos or suspected of containing asbestos must be **immediately notified** to IFS. IFS will ensure that University HR Health and Safety are informed and coordinate an appropriate response.

Both the contractor and the PTW issuer shall confirm whether the works to be undertaken are located in the vicinity of Hazardous Materials. If this is not the case, then an Hazardous Materials PTW is not required, and standard safety procedures apply. If planned activities will be in the vicinity of asbestos or ACM, then the University's **Asbestos Management Plan** shall be consulted to determine appropriate actions.

An Asbestos Management Plan has been developed for works where asbestos contamination is suspected or discovered. The management plan is available to any worker, PCBU or Health and Safety Representative associated with works at the University and must be abided by all workers on University property. When asbestos-related materials are identified or suspected to be present, all work shall immediately cease and the site be secured. A professional assessment of the materials and site shall be conducted through sampling and analysis, and based on the findings, a safe work procedure is to be documented, which may include the engagement of an appropriately licensed asbestos removal contractor and the formulation of an Asbestos Removal Control Plan.

9.1 Asbestos Removal

Any contractor undertaking **asbestos removal** on behalf of the University of Newcastle must be a **licensed** asbestos removalist in line with WorkCover requirements; and have fully developed safe systems of work.

Contractors must complete a WorkCover Commencement of Work Notice, and obtain WorkCover approval for all asbestos removal activities. A copy of the WorkCover Commencement of Work Notice must be submitted to the IFS Representative and be sighted by the IFS Representative prior to any such works commencing.

10. Confined Spaces

Confined Spaces present a real life-threatening hazard to anyone entering them. Examples of potential Confined Spaces can include tanks, pipes, ducts, shafts, trenches, tunnels, pits, sewers, deep narrow drains and other similar structures. Spaces entered through a small hatchway or access point may also classify as Confined Spaces, such as water tanks on trucks, oil tanks, boilers, pressure vessels, bridges, silos and other 'void' spaces.

Staff and contractors are required to comply with the UON Confined Space Permit system. A DN / PTW application must be submitted for any works involving Confined Spaces. ***Confined Space*** shall be

identified **as a hazard** in the **Activity** Section of the Permit application; and the application submitted and authorised by a Permit issuer prior to commencing any works within the Confined Space. The only exception being where the site is controlled by a Principal Contractor who has their own WHS Management System and Permit systems.

If you are required to enter a Confined Space, you must ensure that work methods are developed and completed in accordance with the NSW WHS Regulation, Code of Practice and AS 2865-2009.

10.1 Personnel

At minimum two persons must be available for activities in Confined Spaces: the first to enter the Confined Space; and the second to act as a ***Stand-by*** person, to observe, raise the alarm and give assistance if required. Only contractors and employees who have been ***trained and accredited*** in Confined Space procedures and assessed as competent, may enter Confined Spaces and/or act as Stand-by. Records of training and accreditation must be maintained by the Contractor and made available to the IFS Representative on request.

The Stand-by person shall:

- Continually monitor the wellbeing of those inside the space.
- Be able to recognise the signs and symptoms that workers in the space may experience as a result of specific hazards.
- Remain outside the Confined Space and not participate in any activities which may impair their ability to continually monitor the workers inside the Confined Space.
- Have all the required rescue equipment immediately available.
- Have the authority to order workers out of the space should a hazardous situation arise.
- NOT enter the Confined Space to attempt rescue.
- Activate Emergency procedures when required.

10.2 Communication

A *communication* system is required to enable communication between the Stand-by person and the worker in the Confined Space; and to raise the alarm in the event of an emergency. The methods of communication to be used shall be listed on the Permit application. Communication methods include: voice; two-way radio; hand signals; lifeline; telephone.

10.3 Emergency planning

Emergency plans, including a ***rescue plan*** must be developed for any work in Confined Spaces, and provide appropriate means for removing an unconscious person from the space. All personnel associated with activities in Confined Spaces should be trained and competent in implementation of the rescue plan.

Emergency contact numbers must be provided and listed on the PTW application, Numbers provided as emergency contact must be assured of being manned throughout the Confined Space activity, so that the persons contacted can initiate appropriate emergency measures.

10.4 Safe atmosphere

A ***safe breathing atmosphere*** must be confirmed, by use of ***atmospheric testing*** prior to entry into a Confined Space. Refer to Section 7.6 Atmospheric testing.

Hazardous atmospheres in Confined Spaces may include:

- ***Oxygen deficiency***, due to welding and associated works, chemical reactions, rusting of components or natural bacterial reactions;
- ***Flammable atmospheres*** as a result of excess oxygen; flammable gas, vapour or dust;
- ***Toxicity***, due to build-up or residual / stored liquids, vapours, gases, mists, solids e.g. carbon monoxide generated from fuel exhaust;

A safe atmosphere must be ensured for workers in the Confined Space for work to take place. A safe atmosphere could be achieved by use of methods such as purging, cleaning or ventilation.

10.4.1 **Purging** uses inert gases such as nitrogen to clear flammable gases or vapours and airborne contaminants. Purging and ventilation equipment designed for use in hazardous areas must be used.

10.4.2 ***Ventilation*** of the Confined Space may be required by natural or mechanical means to provide fresh air and a safe temperature for as long as the Confined Space is occupied.

10.5 Safety Equipment

Workers undertaking work in Confined Spaces are to be provided with and use Safety equipment, including Personal Protective Equipment **(PPE)** suitable for the task.

As a minimum the following safety equipment should be included:

- Gas detector,
- Life lines
- Harness
- Warning signs
- Barricades
- Traffic management signs
- Fire extinguisher

Further safety equipment to be considered includes:

- Breathing apparatus
- Gloves
- Boots
- Eye protection
- Respiratory protection
- Overalls
- Chemical suit
- Hearing protection
- Ladder
- Self-rescue respirator
- Lighting
- Helmet
- Fall arrest
- Platform
- First aid

Signage must be erected to indicate that the entry person has entered the Confined Space.

10.6 Entry/Exit Logs

Logs of each entry into and exit from the Confined Space must be maintained, recording the names of the persons, the date and time of each entrance and exit. At the end of each work period the entry log must be verified to confirm that all personnel have exited the Confined Space. Entrance Logs should be retained as evidence of adherence to Confined Space procedures and be made available to the IFS Representative on request.

10.7 Limited duration permits

Confined Space Permits shall have a duration period maximum of ***8 hours*** on any nominated day. Should further Confined Space work be required; or works not be undertaken on the day specified on

the PTW, a new PTW must be obtained prior to any Confined Space works commencing / recommencing.

10.8 Hazard identification and control

Consideration should be given to each of the following hazards pertaining to Confined Spaces and their appropriate control:

- Restricted entry or exit
- Harmful airborne contaminants present initially or created by the works
- Unsafe oxygen levels
- Fire and explosion
- Electric shock, from presence of electrical services or portable electrical equipment;
- Crushing, engulfment by drowning or burial, e.g. moving mechanics, stormwater, cave-in.
- Biological hazards
- Mechanical hazards
- Skin contact with hazardous substances
- Noise
- Manual tasks
- Radiation
- Poor lighting / visibility
- Barriers to communication between the worker and Standby person
- Environmental hazards such as extremes of temperature
- Falling from heights
- Hazards outside the confined space
- Additional demands on the physiological or psychological well-being of the worker

Tasks to be conducted within Confined Spaces, such as Hot works can increase the risk to the worker. All tasks planned to be undertaken for a particular job, must be assessed as part of the SWMSs / Risk assessment process. Consideration should always be made of whether the activities are required, whether alternate safer methods could be undertaken instead; and whether all or part of the activity might be conducted external to the Confined Space.

Each hazard found to be present for a particular hazard must considered in the SWMS / Risk assessment and appropriately controls determined prior to any Confined Space activities.

11. Demolition

Staff and contractors are required to comply with the UON Demolition Permit system. A DN / PTW application must be submitted for any activities involving demolition of structures or buildings which are load-bearing or otherwise related to the physical integrity of the structure. ***Demolition*** shall be identified **as a hazard** in the **Activity** Section of the DN / PTW application; and the application submitted and authorised by a Permit issuer prior to commencing any demolition works. The only exception being where the site is controlled by a Principal Contractor who has their own WHS Management System and Permit systems.

Demolition work is considered to be Construction Work under the NSW WHS Regulation and is classified as a high risk activity. All demolition works must comply with the NSW WHS Regulation 2011 and reference should be made to the Safe Work Australia model code of practice – Construction Work.

Principal Contractors will be expected to include demolition works in their Contractor Management Plans. A SWMS must be prepared before the demolition activity starts.

11.1 WorkCover NSW notification and licensing requirements

Demolition work which involves any of the following is notifiable to WorkCover NSW under the WHS legislation.

- The demolition of a structure or part of a structure which is load-bearing or otherwise related to the physical integrity of the structure, and of at least 6 metres in height;
- Involves load shifting material on a suspended floor; or
- Involves explosives

Demolition licensing is required by WorkCover NSW under two categories: Restricted Demolition and Demolition. All demolition work undertaken on behalf of the University of Newcastle must comply with WorkCover notification and licensing requirements.

11.2 Hazard identification and control

When assessing the risks associated with demolition work the following should be considered:

- The structure to be demolished and its structural integrity;
- The method of demolition including its sequencing;
- The scheduling of the work;
- The layout of the workplace, including whether there are fall hazards both for people and objects;
- What plant and equipment will be used and the skill and experience required by the people who will use it safely;
- What exposures might occur, such as to noise or ultraviolet (UV) rays;
- The number of people involved;
- Local weather conditions.

If demolition work involves working with asbestos or explosives, then a risk assessment must be conducted. Consideration should include:

- Identification of which workers are at risk of exposure;
- Determining what sources and processes are causing the risk;
- Identification of what kind of control measures should be implemented;
- Verification of the effectiveness of existing control measures.

Workers undertaking Demolition work are to be provided with and use suitable ***Personal Protective Equipment*** for the task.

Other specific risks associated with the demolition, for example: asbestos, isolation of services, or working at heights are addressed separately in this document and reference should be made to each relevant section.

12. Excavation

Staff and contractors are required to comply with the UON Excavation Permit system. A PTW application must be submitted for any activities involving excavation deeper than 100mm or by mechanical digging. ***Excavation*** shall be identified **as a hazard** in the **Activity** Section of the PTW

application; and the application submitted and authorised by a PTW issuer prior to commencing any excavation.

When a site is controlled by a Principal Contractor who has their own WHS Management System and Permit system an Excavation Permit to cover the area within the contractor compound for the period of the works can be issued at the start of the project. This permit will state the conditions that the contractor can excavate without advising UON during the project. Any excavation within the contractor compound that is outside these previously agreed conditions requires an additional Excavation Permit.

All excavation works must comply with the NSW WHS Regulation 2011; and the WorkCover Excavation Work Code of Practice.

Excavations include trenching, tunnelling, boring, digging, shovelling, crow baring, picking, driving a stake or pole, sparging etc. where a depth of 100mm will be exceeded.

12.1 Potential Severe Consequence Excavation

If any of the services below are shown on GIS to be within 8 meters of the intended excavation, an approved service locator must be used to identify the location of the services. If the excavation is within 2 meters on the service location identified by the service locator, non-destructive potholing is required to positively identify the exact location of the Service.

- Electrical Service above 1000 Volt to 11kV.
- Electrical Service below 1000 Volt with a rated current above 200 amps.
- Gas line
- High-pressure Sewage line.
- Fibre Data services.

Once the exact location of the service is positively identified, no powered excavation is to take place within 600mm of the service. Spud bars are also not to be used within 600mm of an identified service. Within 600mm of the service location, hand tools only are to be used for excavation, non-conductive tools only are to be used within 300mm of Electrical Services above 1000 Volt.

12.2 Potential Major Consequence Excavation

If any of the services below are shown on GIS to be within 3 meters of the intended excavation, an approved service locator must be used to identify the location of the services. If the excavation is within 1 meter of the service location identified by the service locator, non-destructive potholing is required to positively identify the exact location of the Service or, the excavation can be hand dug.

- Electrical services under 1000 Volt
- Water services under 50 mm
- Copper data services
- Atmosphere/low pressure sewage
- Storm water Drain
- Booster Fire Water services
- Fire water services.

If non-destructive potholing has been completed and service location has been positively identified, powered excavation can be used to within 300mm of the service.

12.3 Excavation PTW Support Documentation

When submitting an Excavation Permit the following documentation should be attached to the submission to assist the assessor in approving the excavation. If the any of the information below is omitted, approval can be delayed.

- A completed PTW application in the Beakon software.
- A concise accurate description of the works being undertaken including the excavation depths and intended excavation method (Non-destructive, excavator, hand dig).
- Attachment of UON GIS survey showing all services, marked up with the location of the intended excavation. The Aerial Layer should be turned OFF.
- A photo of the area being excavated marked up with the location of the intended excavation.
- Attachment of an approved Service locator report.
- Site specific SWMS or SWMS reviews to be attached in the Beakon software.
- Any supporting documentation to be attached in the Beakon software.

The University reviewed and issued excavation electronic PTW or a hard copy, including any associated documentation, must be held by the work crew during any excavation works.

12.4 Hazard identification and control

Planning and consultation shall consider:

- An assessment of the nature and condition of the ground or working environment.
- Any potential contamination of the soil by chemicals or wastes.
- As assessment of other risks, such as:
  - A person falling into the excavation
  - A person becoming trapped by the collapse of the excavation
  - A person working in the excavation being struck by a falling item.
  - A person working in the excavation being exposed to an airborne contaminant.
- The nature of the work and other activities that may affect safety.
- Static and dynamic loads near excavation.
- Interactions with other trades.
- Safe place for excavated materials.
- Provision of suitable access and egress to and from the excavation, such as consideration of slope and traction on ramps leading into the excavation.
- Provision of safe access and egress to and from the general work site.
- Clear definition of the general work area by use of fencing and warning signs to ensure public safety.

- Provision of lighting, barricades or handrails around the excavation itself to ensure safety of personnel within the work site.
- Marking the exact location of the excavation.
- Shoring, benching or sloping the excavation walls to minimise the risk of collapse.
- Ensuring that any in-ground services are identified, located, and accurately marked by use of the University's preferred survey contractor.
- Contact with Dial 1100 Before You Dig (if applicable) at least 2 working days prior to permit application.
- Identification of above ground overhead services which might impact the work activities.
- The type of equipment to be used for excavation work.
- Management of surrounding vehicular traffic.
- Consideration of the potential for the works to affect the structural integrity of surrounding infrastructure and buildings including ground vibration.
- Site security when work is left unattended.
- Establishment of emergency and rescue procedures in the event of an emergency.

The advice of structural or geotechnical engineers should be considered during the consultation process to identify the optimal work method and determine the provision of safeguards.

All excavation must be adequately shored and safe access provided. Trenches must be protected against collapse whenever necessary

Prior to backfilling an excavation, the contractor will ensure that the IFS Representative is notified for inspection of the services performed. The UON Representative shall witness service depth, the placing of any identification tape, or slabbing over services before any trench is closed.

On completion of the excavation work, the Contractor shall accurately mark up on drawings any changes to services and return the marked-up drawings to the IFS Representative for inclusion in the University GIS. Marked-up drawings must clearly identify the name and company of the person completing the mark-up.

It is preferred that contracts include for surveyed as-builts of in-ground works.

13. Fire Detection Systems Isolation

A PTW application must be submitted for any works involving the inactivation of fire detection systems. Such isolation should be considered if dust, smoke, sparks/flame or heat will be generated during the works.

Both, the ***Notice of Disruption Section*** and service isolations sections of the PTW must be completed.

Upon receipt of the PTW application, the IFS Representative shall determine the level of risk associated with isolating fire detection systems, and notify relevant parties as required, e.g. Risk and Insurance, and Security where areas are required to de-activated for long periods of time or may affect an occupied area.

The University's fire-isolating contractor should be notified of the requirement to isolate the fire systems and must coordinate the isolation with the contractor.

The full extent of works must be communicated to the fire isolating contractor so that they are aware of the potential effect on services and can determine the extent of fire isolation required. For example, dust works may require the isolation of an entire building, with potential that dust in one room could

spread through the building's AC system, therefore potentially triggering alarms well-separated from the works.

14. Hot Work

Hot works include, but are not limited to works generating: heat, open flames, sparks or other ignition sources which may cause smoke or fire, or which may trigger detection systems. Hot works activities include: grinding, welding, heat-shrinking, thermal or oxygen cutting, applying roofing materials with torches, or heating and other heat or spark producing operations.

Staff and contractors are required to comply with the UON Hot Work Permit system. A PTW application must be submitted for any works involving Hot work. The application must be submitted and authorised by a Permit issuer prior to commencing any Hot works. The only exception being where the site is controlled by a Principal Contractor who has their own WHS Management System and Permit systems and no disruption will be experienced outside that site.

Hot work within hazardous areas is classified as a high risk activity under the NSW WHS Regulation. All demolition works must comply with the NSW WHS Regulation 2011 and reference should be made to AS 1674-1997 Safety in welding and allied processes. A SWMS shall be prepared before the hot work activity starts.

14.1 General requirements for Hot Works

The following general requirements for Hot works should be considered as part of the Safe Work Method Statements:

- All workers carrying out hot work must have been ***trained in performing hot works safely***
- Work involving the use of naked flames in the open will be subject to ***Total Fire Ban Day*** Restrictions.
- A trained ***Observer / Fire Watch*** shall be provided to monitor the areas around the Hot work, both during the activity and **for a minimum of 30 minutes after the activity has ceased**. ***In the event of a fire*** or detection of smoke, the Observer / Fire Watch shall direct work to cease; raise the alarm; and participate in the implementation of Emergency procedures.

If at any time there is the risk that a spark could cause a fire (eg. there is a change of wind while welding is being conducted outdoors), ***work should be stopped immediately***.

14.2 Emergency planning

Emergency procedures shall be prepared, with all personnel associated with the activity appropriately trained in these activities; and in the use of fire-fighting equipment.

If the fire system is activated and the Fire Brigade is called out unnecessarily, the contractor will be charged the callout fee.

14.3 Limited duration permit

Hot Work permits shall have a duration period maximum of ***8 hours*** on any nominated day. Should further Hot works be required; or works not be undertaken on the day specified on the Permit, a new Permit must be obtained prior to any Hot works commencing / recommencing.

14.4 Hazard identification, prevention and control

Prior to the commencement of any Hot works, the following precautions shall be considered:

- Isolation of the Hot work area from combustible materials by:
  - Removing any loose combustible materials from the area.
  - Checking any pipes, ventilation ducts and adjacent areas for flammable materials.
  - Covering penetrations in walls and floors to prevent access of sparks.
- Protection of permanent equipment in the area from damage from heat or sparks.
- Isolation of the work area where the Hot work is to be conducted with ***safe entry and exit*** provided. ***Barricades and signs*** shall be erected as required.
- Interim replacement of smoke detectors with heat detectors prior to the work commencing; or
- Isolation of fire alarms and smoke detectors (Contact the IFS Representative prior to the works commencing so that the fires systems can be isolated).
- Testing for ***flammable atmospheres*** in hazardous areas as detailed in Section 7.7 Atmospheric Testing.
- Contractors shall provide at least one ***portable fire extinguisher*** in a location at or near each Hot work activity, to control any inadvertent fires (correct type of extinguisher for application).
- Confirmation of the locations of ***other firefighting equipment*** in the vicinity.
- Verification of ***adequate ventilation*** to remove build-up of gases or fumes. Where required, forced or induced draft ventilation should be considered.
- The provision of ***welding screens*** to prevent sparks from flying into adjacent areas and to screen nearby workers and others from welding flash and any hot waste produced during the welding process.
- The hot work area shall be ***patrolled for a period of at least half an hour*** after the work is completed to ensure that there are no smouldering embers that could cause a fire.
- Provision and use of ***Personal Protective Equipment*** suitable for the task:
  - Aprons
  - Leather sleeves
  - Eye protection
  - Welding spats (or flameproof overalls)

15. Isolation of Services

The University of Newcastle has a ***no work live policy.*** All sources of energy must be isolated before any work is carried out on any equipment, services or infrastructure. This policy excludes basic testing / measurements of an electrical circuit which does not modify, disconnect or otherwise change the electrical characteristics of the circuit. To manage any interference of this policy with University core business, and ensure that any potential deviations from this policy are identified, justified and assessed, a DN / PTW application must be authorised prior to any service isolation.

> If for any reason a contractor proposes live work on an energy system be undertaken, then an Isolation permit application MUST STILL BE SUBMITTED with justification why the works would be conducted in this manner, and accompanied by sufficient documentation to assess why a deviation from the ***no work live policy*** would be considered, emergency planning and identification of emergency service isolation points.

Sources of energy for which an **Services Isolation Permit** application must be submitted include:

- Hydraulic – oil and water under static or powered supply
- Gas – natural (town) or any industrial gas
- Electrical – fixed, generator, solar or battery, HV and LV
- Air – compressed or fan-forced
- Radiation – microwave, x-ray etc.
- Steam
- Gravitational
- Mechanical

For any other Service Isolation, even where no hazards are identified and the risk of isolation is assessed to be low risk, there is still potential for the isolation to cause business disruption to the University, so the **Notice of Disruption Section** of the Notice of Disruption / Permit PTW application must be completed and submitted.

Relevant services include but are not limited to:

- Electrical – HV
- Electrical - LV
- Water
- Natural gas
- Reticulated gases
- Telephone
- Wet fire services
- Dry fire services
- Sewer
- Steam
- Deionised water
- HVAC
- Communication network
- Security systems
- Building management systems

Any ***energised equipment*** to be worked on, shall be isolated to ensure the energy is removed or controlled; to render it safe for maintenance activities; and to prevent incidents. Energy may be in the form of liquid flow; gas, electrical current or other stored energy.

Isolation of services such as gas, water or hydraulic systems shall be completed at the nearest point to the place of work, using a Danger Tag and/or lock.

Where electrical isolation is effected, at a removable or rack-out circuit breaker, or combined fuse switch, if possible it must be racked out or removed, then locked open and Danger Tagged.

Following isolation, test to ensure that the equipment or apparatus targeted is fully isolated and discharged of any stored energy that may be present. Electrical equipment must be tested to ensure that it is not live, prior to commencement of any works on that equipment.

To test electrical equipment:

- Use a volt stick for an indication;
- Use a Physical Contact multimeter.
- Test the equipment on a known live source.
- Attempt to switch on or start the de-energised equipment
- Place personal lock and danger Tag, ensuring danger tag is dated with the current date.

Prior to the commencement of any electrical work, the contractor shall verify that all electrical contractors have a current Electrical Contractor’s License, and maintain records of the worker’s name license number and expiry. Records shall be made available to the IFS Representative on request.

Critical areas are regularly provided with several sources of power including standby generators. This may assist in service isolation OR can provide an additional level of complexity requiring additional isolations.

Critical areas include: data centres, research laboratories, glass houses, animal holding areas.

If a generator or other equipment is being used to provide backup power to the installation in the event of a power loss and that equipment will be relied on to provide power during an electrical isolation, the equipment must be tested or run before the isolation takes place.

All isolations to backup services shall be fully tested on completion of work to ensure emergency backup function operates effectively.

15.1 Services Isolation PTW Support Documentation

When submitting an Services Isolation Permit the following documentation should be attached to the submission to assist the assessor in approving the isolation. If the any of the information below is omitted, approval can be delayed.

- Document the point of isolation. In the case of electrical isolation, this will include the circuit number, DB name and room number of the area that houses the DB. In the case of a valve or other isolation device it should include the isolation device name (If any) and exact location.
- The “likely effect” of the isolation. The actual consequences of the isolation will be establish by UON.
- The name of the person completing the isolation.
- A Clear picture of the DB or area containing the isolation point.
- A Clear picture of the escutcheon or circuit breaker group containing the CB to be isolated.
- A Clear picture of the Point of Isolation (Circuit Breaker, Valve etc) to be isolated.
- A Clear picture of the legend listing all circuits that could be affected by the isolation.
- A clear description of the work to be completed.
- A non-generic SWMS that specifically addresses the risks involved with the intended task.
- If this is an isolating for personal protection, a list/description of the locks and tags to be placed and by whom.

15.2 Timing of Service Isolation

Interruptions to power, gas, water, communications and air conditioning can cause serious loss to ongoing University business. Depending on the time of year, the affected service, and/ or function of that service, the extent of disruption notification periods may be anything from immediate for service failure, to several weeks.

For site wide interruptions OR whole of building interruptions, **extensive notice periods apply**. The longer the interruption the greater the notice required.

For service (electrical, gas, air conditioning or water) interruptions to critical areas, isolation and associated activities may need to be delayed until times of minimal usage OR at night OR until specific times of the year which cause least impact and risk to ongoing operations.

The IFS Representative will consult with affected personnel to target an appropriate time of interruption which would cause minimal disruption / loss of normal UON operations.

The IFS Representative will also consider the extent of the disruption/isolation in determining the whether to consult with Risk and Insurance in the event the service being isolated incurs a risk to the UON, i.e. temporarily have a fire hydrant out of action for a particular area may require a fire impairment notification to be lodged.

The University requires **5 business days notification** for service isolations except in extenuating circumstances.

15.3 Prior to commencement of Isolation

Test isolation on valves prior to proceeding to full service interruption as replacement valves / switches may be required.

Ensure that all people who are involved in the planning or performing the work have been consulted on the methods of work and other safety issues. In the event of high risks works, the IFS Representative should be invited to the toolbox talk undertaken with the Contractor staff.

Plan and detail the following:

- Services will be isolated by……..……
- Danger Tags will be placed on the isolation switch/ valve/ system by..... (List all workers affected)
- The retest that the circuit /system has been isolated will be performed by…….
- Determine appropriate supervision.

Ensure that all tags have been removed at the end of isolation.

15.4 Lockout / Tagout

IFS has instituted a Tagout system, however, wherever possible a locked isolation should be employed. As a minimum the use of a tag is acceptable.

Danger Tags are used to identify that an individual is working on a system that has the capacity to become energised and cause injuries. The Danger Tag must be attached to the point of isolation of the system whenever personal danger could arise from that system becoming energised. Danger Tags shall only be placed on positive isolation devices. Push buttons, control, switches or emergency stop switches are not considered to provide positive isolation.

Switches, valves and other positive isolators shall never be operated when there is a Danger Tag attached.

Each person working on the system shall place and remove their own Danger Tag. Danger Tags shall be ***removed*** at the completion of work and at the ***end of every shift***. If the work is not finished or the equipment is not ready to be re-energised, an Out of Service tag shall be placed on the equipment with a description of the equipment status.

If a danger tag is left in place when you leave the work site, you will be recalled to remove it.

Contractors which utilise their own Lockout/Tagout System shall advise the IFS Representative of this system and coordinate its integration with the University's system to ensure there is a consistent and well-understood approach to managing this risk.

16. HV / LV Switch Room Entry PTW

Entry to HV / LV switch rooms may involve entry within the designated safe working distances of live HV equipment. To manage the risks inherent in such work, a site Specific Induction must be completed prior to any Entry and is current for a period of 12 months only. The Network Controller should be contacted to arrange this induction.

The building or low voltage electrical works covered by this permit are in the HV and LV switch rooms. Although all electrical equipment is enclosed, care should be taken to observe the following points:

- Keep any part of your body or equipment at least 1.2 metres away from any exposed HV terminations inside chain wire fence OR 300mm way from any low voltage terminations.
- Do not touch any electrical equipment unless specifically instructed to by the IFS Representative.
- Do not operate any switches except light switches and GOPS.
- Do not leave the switch rooms open or unattended.
- Do not carry long conductive material into the HV switch room, i.e. metal conduits or metal painting planks.
  Note: any extension to painting devices, broom handles etc. is to be non-conductive.
- Any ladders or scaffolds used are to be non-conductive and suitable for electrical use.
- It is recommended that non-polyester long trousers and long sleeve shirts be worn when working in HV switch rooms.
- No eating/drinking allowed in substations.
- Work method statements to be completed for all types of work and to be submitted to the relevant IFS Representative before starting work.

NOTE: An HV Access Permit is separate to this Entry Permit, and is provided solely for working within safe working distances of apparatus connected to a HV Network. The HV Access Permit is issued separately by the University Network Controller as per the University of Newcastle High Voltage Safety Management Plan.

16.1 Substations, High Voltage Switch Rooms

NOTE: An Isolation Permit does not give the holder authority to isolate High Voltage supply under any circumstance.

A PTW application must be submitted for access to HV Substation Switch Rooms. ***Access to HV or LV Switch Rooms*** *shall be identified as* the **hazard** in the **Activity Section** of the PTW application and the application submitted and authorised by a Permit issuer prior to any Access.

Contractors requiring access to HV Substation Switch rooms shall must not enter a High Voltage (HV) switch room of a substation unless accompanied by a University authorised HV Operator. If access is required to the HV switch room, you must first make contact with the HV Network Controller. A HV Operator will attend the site with you, as soon as they are available.

Only University HV Operators may switch HV equipment in accordance with a HV Switching Permit.

For contractors to complete works on any HV equipment, they must have a worker that has completed HV permit receiver training onsite at all times. Contractors engaged to carry out work on high voltage

installations must work under a HV access permit which has been issued to an authorised High Voltage Access Permit Receiver. This receiver must have proof of training from an authorised training authority.

HV switch rooms are locked using a 'HV1'key. This key is only available to University HV operators. It will not be issued to any contractor, since a HV operator will be present with the contractor at all times.

Access to a high voltage substation will require at least **3 business days' notice**.

16.2 Substations – Low Voltage Switch Rooms

A DN / PTW application must be submitted for access to LV Substation Switch Rooms. ***Access to HV or LV Switch Rooms*** *shall be identified as* the **hazard** in the **Activity Section** of the PTW application and the application submitted and authorised by a Permit issuer prior to any Access.

Only authorised staff may enter a Low Voltage switch room of a substation.

While inside a LV switch room you must NOT:

- Operate HV remote switching panel unless part of a switching permit issued by the HV Network Controller;
- Cross within safe working distances;
- Use interconnecting doors between LV and HV switch rooms to gain access to HV switch rooms, except in an emergency.

LV switch rooms are locked using a 'HV2'key. This key is only available to staff or contractors who have completed a LV substation site specific induction.

17. Penetrations

Staff and contractors are required to comply with the UON Penetrations Permit system. A PTW application must be submitted for any works involving Penetrations greater than 12mm / ½ inch width or depth or which penetrate through a single surface into a cavity. ***Penetrations*** shall be identified as a **hazard** in the **Activity Section** of the DN / PTW application; and the application submitted and authorised by a Permit issuer prior to commencing any Penetration works. The only exception being where the site is controlled by a Principal Contractor who has their own WHS Management System and Permit systems.

All penetration works must comply with the WorkCover Code of Practice – Cutting and Drilling Concrete and Other Masonry Products 1997.

Works requiring penetration of concrete or masonry floors or walls, ceilings or roofs may require isolation of the electrical supply to the local area or the entire building, and reference to Section 14 of this document – Isolation of Services. If the location of any mains/sub mains supplying distribution equipment in the area cannot be positively located, those cables must be isolated prior to penetration.

Contractors shall ensure that prior to any penetration, a suitable detection device is used to identify any services or structures within the area of penetration which might be damaged or cause injury to the worker.

Drills must be guarded or marked to ensure minimum penetration through a surface.

18. Working at Heights / Roof Access

Staff and contractors are required to comply with the UON Working at Heights Permit system. A PTW application must be submitted for any activities involving working at heights greater than 2 metres. ***Working at Heights*** shall be identified **as a hazard** in the **Activity** Section of the PTW application; and the application submitted and authorised by a Permit issuer prior to commencing any work at heights, including roof access. The only exception being where the site is controlled by a Principal Contractor who has their own WHS Management System and Permit systems.

Work which involves a risk of a person falling more than 2 metres falls under the definition of high risk construction works and is considered a high-risk activity under NSW WHS legislation. This can include work on roofs, scaffolding, suspended ceilings, ladders and elevated work platforms. All work that is to be performed at heights at the University must comply with applicable Codes of Practice such as Work Cover NSW Managing the risk of falls at workplaces code of practice July 2015, and relevant Australian Standards.

Contractors are reminded that during the planning process, consideration should be given to whether the activity needs be conducted at height; or whether all or part of the work could be conducted at ground level. Safe means of access and egress from the work height must be provided; and the risk of falls minimised. Risk minimisation could be assisted by use of a fall prevention device; work position system; or fall-arrest system.

For work which involves a risk of a person falling more than 2 metres, a SWMS must be completed; and submitted along with the PTW application. The Risk Assessment must consider all the associated hazards such as:

- Working near power lines or live power;
- Any guarding or hand rails to be erected;
- Ladders and access requirements;
- Ground safety spotters;
- Any specialist rigging etc;
- Rated anchor points or static lines;
- Prevailing weather conditions;
- Appropriate qualifications and training requirements;
- Appropriate PPE requirements;
- Surface and protruding structures;
- The type of fall arrest equipment to be used;
- Load rating of roofs and safety devices.
- Securing of equipment to prevent falling objects.
- If fall arrest is being used as the control for a task, a rescue plan shall be in place and submitted as part of the DN / PTW application.

Persons performing work at heights must be trained in the safety equipment and systems required for the task and have the appropriate licenses and qualifications.

Contractors should supply their own ladders; scaffolding; safety harnesses and lanyards.

Workers undertaking work at heights are to be provided with and use suitable ***Personal Protective Equipment*** for the task.

18.1 Roof Access

The condition of roofs throughout the University structures varies widely. Conditions become more hazardous during adverse weather conditions and as a consequence access to roofs is not permitted when the roof is wet or a storm threatens. Accesses to roof areas have dedicated procedures that are available from the IFS Representative.

The UON maintains a Register of Roofs, and this register should be accessed for each and every roof for which access is required, so that contractors are fully informed of the hazards and likely conditions presented by each roof, and appropriate controls can be planned.

The following minimum requirements should be reflected in the Safe Work Method Statement. These must be met to access and work on roofs.

- The roof must be structurally sound before a person walks on or places a load on a roof
- Minimal disturbance to building inhabitants.
- The roof is not too steep or slippery to access.
- Roof areas shall be kept tidy and clean.
- Rubbish is regularly removed.
- All stored items are appropriately secured.
- The means to ensure safe access to reach the roof, with consideration of any other roofs traversed to obtain access.
- Handling materials and tools on and around the roof to facilitate good manual handling practices and to minimise the risk of objects falling.
- If there is risk of objects falling, a suitable barricaded area with signage must be erected. If it is determined that this risk is high then a spotter must be employed.
- Points of attachment
- Appropriate PPE.

18.1.1 Longer Term Roof Access PTW

Some contractors may require longer term access to one or more UON roofs. In order for such longer term access to be granted, the contractor must complete the PTW application as detailed above; and demonstrate to the Permit Issuer that they can competently perform the type of work required and maintain a safe system of work. Contractors must have access to a health and safety management system that can effectively manage the risk associated with this type of work. Once this has been assessed, the contractor may be granted long term access to specific University roofs. Each Permit shall have a set duration; and contractors must take note when their Access Permit is due to expire and ensure that a new PTW application is completed in good time.

IFS Representatives may inspect or audit contractors to ensure their systems of work comply with University standards and that they are conducting their activities in line with the identified SWMSs.

18.2 Use of Ladders

Persons using portable ladders to access heights during their work must comply with WHS legislation and regulations regarding the use and selection of ladders.

WHS legislation and regulations about ladders cover:

- Ladder selection
- Positioning ladders

- Access or egress and
- Safe use of ladders
- Ladder maintenance
- Administrative controls

18.3 Fall Prevention Devices and Fall-arrest Systems

Safety devices such as temporary work platforms such as scaffolding, perimeter guard rails, safety mesh and fall arrest devices provide control measures to reduce the risk from falls. The selection of safety devices should consider firstly the device which would provide the higher level of safety; and if this is not reasonably practicable, then the next lower level of safety device should be considered. Fall prevention should be given first priority over fall arrest. If fall arrest is the only practical control, a rescue plan must be documented and included with the DN / PTW application.

18.3.1 Scaffolding

All scaffolding and platforms must comply with the WHS legislation / Regulation and Australian Standards regarding:

- Safe methods of locating, erecting, accessing and dismantling scaffolds
- Provision of work platform safety features (toe-boards, guard rails, lighting and warning signs)
- Certification / competency of persons undertaking works
- Selection and fitting of scaffolding components
- Maintenance and inspections
- Scaffold tagging and certification

18.3.2 Fall arrest devices

All workers required to wear fall arrest equipment must be fully trained with the risks associated with the job, and the correct fit and use of fall arrest devices. A rescue plan must be included in the SWMS in the event that someone does fall. Contractors must have a certificate of competency in the use of a safety harness before access to roofs is granted.

When neither work platforms, nor guardrails are available and working at heights or near an unprotected edge in excess of 2 metres in height, an approved fall arrest device consisting of a parachute type body safety harness, with a shock-absorbing lanyard or inertia reel must be worn. The lanyard or inertia reel must be attached to a rated anchorage point at all times.

Anchorage points must be inspected before first use and on a regular basis to ensure they are capable of supporting the load.

19. Authorised Access Spaces / Restricted Spaces

The University has a number of areas such as Data Centres, Plant Rooms and Substations where access is restricted and must be authorised.

In addition the University maintains a register of Restricted Spaces which have been restricted based on both the possible safety risk in the space; and the potential risk that could arise from interruption to activities in these areas.

If you are directed to undertake work in any of these areas, a site specific induction will be required; and permission must be granted by the person responsible for the area prior to access.

Access to Restricted Spaces will also require completion of the UON Restricted Space Induction for Contractors.

The IFS Representative will advise the names and contact details of personnel who should be contacted to arrange access to such areas; and the inductions or training requirements prior to access being granted.

20. Records

Permits and associated documents such as Safe Work Method Statements and Risk Assessments must be stored and retained. Infrastructure and Facilities Services will maintain these records in electronic format for the relevant periods of time required under WHS legislation.

21. PTW Guide Review

To ensure that these Guidelines remain relevant; reflect the current University expectations; and comply with applicable legislation, codes of practice and standards, they will be reviewed on an annual basis by IFS.

More frequent or occasional review may also be triggered as a result of:

- Incidents applicable to the PTW system.
- Identification of further high risk activities or hazards not included in the PTW system.
- Recommendations from the IFS Safety Advisory Group.
- Contractor concerns.

Following completion of the review, the guidelines may be revised or updated. Following authorisation of the changes, the new Version of the Guideline will be posted on the Infrastructure and Facilities website; and both contractors and IFS staff advised accordingly.

22. Related Documents

Work Health and Safety Act 2011

Work Health and Safety Regulation 2011

WorkCover Code of Practice – How to Safely Remove Asbestos 2011

WorkCover Code of Practice – How to Manage and Control Asbestos in the Workplace 2011

SafeWork Australia Code of Practice – Demolition Work 2012

WorkCover Code of Practice – Excavation Work 2000

WorkCover Code of Practice – Confined Spaces 2011

Work Cover Code of Practice – Managing Electrical Risks in the Workplace 2015

Work Cover Code of Practice - Managing the Risk of Falls at Workplaces 2015

Work Cover Code of Practice – Preventing Falls in Housing Construction 2014

WorkCover Code of Practice – Safe Work on Roofs Part 1: Commercial and Industrial Buildings 2009

WorkCover Code of Practice – Cutting and Drilling Concrete and Other Masonry Products 1997

WorkCover Code of Practice – Construction Work 2014

AS 1674.1-1997 Safety in welding and allied processes Part 1 Fire Precautions

AS 2601-2001 The demolition of structures

AS 2865-2009 Confined Spaces