



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

UOW SAFE@WORK

MANAGING THE RISK OF PLANT GUIDELINES

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1. Introduction

A planned system of inspection, testing and monitoring ensures that the work environment, plant or equipment conforms to any legislative requirements, standards, codes or specifications. Once hazards are identified from the inspection, testing and monitoring process an assessment should be undertaken to determine appropriate corrective action with appropriate responsibility identified using SafetyNet hazard and incident report form.

2. Scope

This guideline applies to the inspection, testing and monitoring requirements for plant used by employees, contractors and other authorised personnel, specified plant and/or equipment and processes and establishing uniform inspection, testing and monitoring requirements for all of University locations.

3. Definitions

| | |
|--------------------------------|---|
| <i>Alter</i> | Change the design of, add to or take away from the plant if the change may affect health or safety, but does not include routine maintenance, repair or replacement |
| <i>Boiler</i> | A vessel or an arrangement of vessels and interconnecting parts, in which steam or other vapour is generated, or water or other liquid is heated at a pressure above that of the atmosphere, by the application of fire, the products of combustion, electrical power or similar high temperature means, including superheaters, re-heaters, economisers, boiler piping, supports, mountings, valves, gauges, fittings, controls, the boiler setting and directly associated equipment but does not include a fully flooded or pressurised system in which water or other liquid is heated to a temperature lower than the normal atmospheric boiling temperature of the liquid |
| <i>Competent Person</i> | A person who has acquired through training, qualification, experience, or a combination of these, the knowledge and skill enabling him/her to correctly perform the required task, and who is registered or licensed by a recognised body acknowledging the training, qualification, experience or skills |
| <i>Erect</i> | Includes altering the structure of the plant |
| <i>Equipment</i> | Refer to plant |
| <i>Fault</i> | A break or defect that may cause plant to present an increased risk to health and safety and, in the case of a fault in the design of plant, means an aspect of the design that may cause the plant to be a risk to health and safety if manufactured in accordance with the design specifications |
| <i>High Risk Work Licence</i> | A licence issued in accordance with Part 4.5 of the WHS Regulation 2011 |
| <i>Plant</i> | A general name for all machinery, tools, appliances and equipment. Types of plant include lifts, electrical equipment, power tools, computers, hand held tools, hand trolleys and workshop equipment |
| <i>Inspection / Monitoring</i> | Observations of work environment, work practices, equipment used, work posture or reported hazard and may be done with or without an inspection checklist |

| | |
|----------------|---|
| <i>Testing</i> | Use of standardised tests to check equipment, plant operation, process control, performance and effectiveness |
| <i>Repair</i> | Restore plant to an operating condition, but does not include routine maintenance, replacement or alteration |
| <i>Use</i> | Work from, operate, maintain, inspect or clean |

4. Responsibilities

4.1. Workers

Workers have a responsibility to:

- report all hazards associated with plant, including risk assessments and implementing corrective action to eliminate or control the risks associated with hazards, and
- to ensure that they are adequately and appropriately trained in the safe operation of the plant they are required to use.

4.2. Supervisors

Supervisors are responsible ensuring that the requirements set out in this guideline are implemented within the area they are responsible for. Responsibilities include:

- organising the inspection, testing and monitoring of plant, equipment and processes in their operational areas, including:
 - ensuring workers, contractors, students and visitor are aware of their responsibilities and are provided with adequate information, instruction and training
 - establishing and maintaining a register and test schedule of plant, equipment, processes and work locations where testing and monitoring is required
 - ensuring legal requirements to undertake specific activities, perform work or operate equipment including the need for licences, certificates of competency, notification process, registration, approvals and other relevant requirements.

4.3. Executive Deans, Directors, Heads of Schools and Managers of Units

Executive Deans, Directors, Heads of Schools and Managers of Units are responsible for ensuring these guidelines are implemented within their area of responsibility.

4.4. Personnel Conducting Inspection, Testing and Monitoring

Personnel conducting inspection and testing procedures are required to:

- be competent to complete inspection and testing requirements. The majority of these requirements will be detailed in legislation, codes of practice or Australian standards, See Appendix 2 for minimal competency requirements, and
- conduct inspecting and testing procedures in accordance with any legislative, code of practice or Australian Standard requirements.

4.5. WHS Unit

The WHS Unit is responsible for:

- the preparation and maintenance of these guidelines
- assisting areas with implementation of these guidelines, and
- verifying the implementation of these guidelines using audit processes.

5. Managing the Risk of Plant

5.1. Purchasing and Hiring Plant

All purchasing of plant must be in accordance with the [WHS Purchasing Guidelines](#) and the [Purchasing and Procurement Policy](#). Any hazards that new plant will introduce into a workplace must be eliminated or controlled. In order to document this process the purchaser should complete a pre-purchase risk assessment.

The NSW WHS Regulation 2011 requires that a supplier of plant, new or second hand, must ensure, so far as is reasonably practicable, that any faults that may give rise to health and safety risks are identified. The supplier must provide information in writing about the condition of the plant and any identified faults, or if the plant is supplied only for spare parts or scrap, that is not to be used as plant. If this is not possible a competent person should be engaged to assess the plant and develop this information.

When plant is hired both the parties must ensure, so far as is reasonably practicable, that the plant is safe to use. During the time that the plant is being used by a UOW worker it is their responsibility to ensure the safe use of the plant.

5.2. Installation and Commissioning of Plant

Any new item of plant must be commissioned by a competent person prior to use which includes:

- verification that the plant does not contain health and safety risks
- inspections are undertaken to ensure that the risks are monitored.

The competent person is to be provided with all information necessary to minimise risk to health and safety. If plant is imported from overseas a qualified electrician needs to inspect the plant to ensure that it conforms to AS 3000. The [Imported Electrical Equipment Inspection Checklist](#) should be completed to demonstrate this process.

5.3. Instruction, Training and Supervision

Any UOW worker who is responsible for using, installing, commissioning, testing, maintaining, repairing, decommissioning, dismantling or disposing of plant need to be provided with instruction, training and supervision so they can perform this task safely.

5.4. Using Plant

Any person who is responsible for the management or control of plant must:

- prevent unauthorised alteration to or interference with the plant
- use the plant only for the purpose it has been designed for
- ensure all safety features are used in accordance with instructions and information provided.

Plant can be used for other purposes for which it has not been designed for if a competent person has assessed that the proposed use does not increase the risk of health and safety.

Certain types of plant require the operator to hold a high risk work licence in order to operate. Schedule 3 of the WHS Regulation outlines the classes of high risk work licences.

5.5. Altering Plant

Risk management process need to be adopted when performing any work that involves altering the design of plant. It is recommended that any person making alterations to plant, consult with the designer and manufacturer to ensure all relevant safety issues have been considered. Any person making alterations to plant will assume the same obligations of a designer or manufacture. If the original designer is not available to be consulted with then a competent person should carry out alterations in accordance with the relevant technical standards.

5.6. Inspecting Plant

Any person in control of plant must ensure that maintenance, inspection, and if necessary testing, of plant is carried out by a competent person. Maintenance, inspection and testing must be done in accordance with the manufacture's recommendations, or if those are not available, in accordance with recommendations made by a competent person. In most cases required competencies will be outlined in legislation, codes of practice or Australian Standards.

Appendix 2: UOW Inspection and Testing Matrix details the inspection requirements for common items of plant, equipment and facilities used in the University operations. Due to the extensive diversity of items requiring inspection in the University environment, the matrix should be used as a guide to identify inspection needs. The matrix will be expanded through the course of identification of further inspection and testing needs and any recent amendments to statutory requirements.

Planning activities should occur to ensure inspection requirements are implemented. Planning should consist of:

- identifying the range of operational activities undertaken
- ascertaining what testing, inspection and monitoring requirements are contained in the inspection, testing and monitoring matrix or as stated in legislation, Australian standards, codes of practice and/or operating manuals, and
- developing a schedule for inspection, testing and monitoring activities.

Specialised equipment used for inspecting plant should meet requirements of the relevant Australian standard, code of practice or other related document. The equipment should be calibrated and adjusted according to intervals in accordance with relevant standards and manufacturers requirements. Storage environments can also affect the integrity of the equipment and its calibration. If the equipment is supplied and used by external consultants, there should be confirmation that the equipment has been correctly calibrated and maintained.

Records of inspections are required to be maintained in accordance with the [WHS Records Handling Guidelines](#) and made available to relevant management, workers and contractors. The record keeping requirements for items requiring inspection are derived from legislation, codes of practice and Australian standards and are listed in the inspection and testing matrix. As a minimum, records should include details of inspections, maintenance, repair, calibration and alteration of plant.

Qualifications, licences or other accreditation of personnel conducting inspection and testing are required to be kept by the person responsible overseeing the inspection and testing.

Any plant as listed in *Appendix 3: Plant Requiring Records to be Maintained* must have records kept of any tests, maintenance, inspections, commissioning or alteration of plant relevant to controlling risks arising from the plant.

5.7. Maintenance, Repair and Cleaning of Plant

Unsafe plant and equipment can be identified via a number of methods recommended in the [UOW risk management guidelines](#). Common techniques include:

- equipment inspections
- pre-operational checks, and
- hazard and incident reporting.

Once the unsafe plant/equipment is identified it is to be withdrawn from service or quarantined, isolated or 'locked out' so that it cannot be operated. For further information on isolation and lock out procedures please refer to the FMD Procedure: [Isolation \(Danger Tagging & Locking\) Procedure](#).

In particular if a repair to plant/equipment is required to be completed by Facilities Management Division (FMD) this should be reported through BEIMS by contacting the FMD service centre. Additionally if the plant/equipment is deemed to be unsafe the hazard is to be reported in SafetyNet in accordance with the [WHS Risk Management Guidelines](#).

Specifications for the maintenance and repair of plant are generally established by the manufacturer. In the absence of such specification, plant needs to be repaired and maintained in accordance with the recommendations of a competent person. Any maintenance, repair and cleaning must be performed by a competent person. In most cases these competencies will be outlined in legislation, codes of practice or Australian standards. Examples of minimal competency for maintaining and repairing plant/equipment can be seen in Appendix 2: UOW Inspection and Testing Matrix.

Where plant or equipment requires to be cleaned, serviced, repaired or altered, controls should be implemented to ensure the safety of persons working on the equipment and others such as members of the public.

Plant should be isolated from power before maintenance or cleaning commences in accordance with [Isolation \(Danger Tagging and Lockout\) Procedure](#). When there is a need to operate plant during maintenance or cleaning, provisions must be made to ensure that the operator's controls allow the safe operation of the plant while a person is undertaking the maintenance or cleaning. Lock out devices or other suitable controls must be in place to prevent equipment being accidentally started in an unsafe state.

If the risk of hazards cannot be eliminated a risk assessment must be undertaken prior to the completion of the work to ensure that appropriate controls are used to protect persons working on or near plant during cleaning, maintenance, alterations or repairs.

5.8. Storing Plant

When plant is not in use it must be left in a state that does not create a risk to the health or safety of any person. When plant is left in storage, risk management practices should be undertaken to ensure that control measures are implemented in order to minimise the risk of damage to the plant. Any relevant health and safety information supplied by the designer or manufacturer needs to be provided to the person who is storing or dismantling the plant.

5.9. Decommissioning, Dismantling and Disposing of Plant

When plant is demolished or dismantled it must be done so by a competent person in a manner that is free of risk to health and safety so far as is reasonably practicable. If there is any relevant health and safety information that will assist in eliminating or minimising risk to health and safety, it must be provided to the competent person. Regular inspections need to be carried out so that risks associated with decommissioning and dismantling can be monitored.

5.10. High Risk Activities

There are a range of activities and task performed at the University which involve a high degree of risk. Some of these are considered high risk, an example is forklift operation. To ensure these high risk activities are performed by licensed operators a register will be maintained.

Any person who operates or uses equipment (as listed below) must hold a High Risk Work Licence or recognised equivalent for the following:

- scaffolding
- dogging and rigging
- crane and hoist operation (tower cranes, self-erecting tower crane, derrick crane, portal boom cranes, bridge and gantry crane, vehicle loading crane, non-slewing mobile crane, slewing mobile cranes, materials hoist, personnel and materials hoist, boom-type elevating work platform, vehicle-mounted concrete placing boom)
- forklift operation
- pressure equipment operation (boilers, turbine, reciprocating steam engine operation)
- load-shifting equipment (front-end loader/backhoe, front-end loader – skid steer type, excavator)
- formwork
- explosive-powered tools.

A full list of high risk Work licences and classes of high risk work can be found in [Schedule 3](#) of the WHS Regulation 2011.

5.11. Return to Service

The normal operating conditions and safety features of plant after repair or alteration is required to be checked by a competent person before being returned to service. Before returning plant/equipment to service the competent person is to sign a maintenance report or similar indicating that the item is safe to return to service.

Should the item not meet the necessary requirements to enable safe return to service the item shall remained out of service until further corrective actions are completed to make the item safe. Examples of minimal competencies for maintaining and repairing plant/equipment can be seen in Appendix 2: UOW Inspection and Testing Matrix.

6. Specific Control Measures

6.1. Guarding Plant

A guard is a physical or other barrier used to prevent contact with moving parts or dangerous areas of plant, screen harmful emissions, minimise noise, or finally to prevent ejected parts or off-cuts from striking people. The NSW WHS Regulation 2011 places certain provision around the use of

guarding. Provisions are based around the permanency of guarding as well as the makeup and the integrity of the structure that the guarding is comprised of.

If access to the area of plant requiring guarding is not necessary during operation, maintenance or cleaning, then guarding needs to be permanently fixed to the plant. If access is necessary during operation, maintenance or cleaning, the guarding must be an interlocked physical barrier. If it is not reasonably practicable to apply the above provisions then guarding must only be able to be removed by the use of a tool. If it is not reasonably practicable to apply a permanent fixed barrier, an interlocked physical barrier or a physical barrier in a fixed position then guarding must include a presence-sensing safeguarding system.

The makeup of guarding must comprise of the following:

- a solid construction that is securely mounted and can resist impact or shock
- an ability to prevent by-passing or disabling of the guard
- not introduce an additional risk to the plant, for example obstruct vision
- be properly maintained
- be able to control risks associated with a potential breakdown or ejected parts and work pieces
- allow for servicing, maintenance and repair to be undertaken with relative ease, and
- if removed, enable the plant to be in-operatable until the guarding is refitted or replaced.

6.2. Operator Controls

The careful design of operator controls is essential to minimising the possibility of unintentional and unsafe operation of plant. Operator controls of University controlled plant must be:

- clearly identifiable indicating the nature, function and direction of operator controls
- located in a position so that the plant can be readily and conveniently operated as well as prevent unintentional activation
- able to be locked into the “off position to allow for disconnection from energy sources.

6.3. Emergency Stops

For any plant that contains an emergency stop control, the following provisions must be applied:

- the stop control must be prominently displayed and immediately accessible to each operator of the plant
- the stop control must be coloured red
- the functionality of the stop control must not be able to be adversely affected by electrical or electronic circuit malfunction.

6.4. Warning Devices

Warning devices need to be positioned on plant when there is a likelihood of moving plant colliding with other plant or workers located in the near vicinity of the plant. The following is an example of warning devices:

- automatic audible alarms
- motion sensors
- lights
- flashing lights
- percussion alarms
- radio sensing devices
- air horns.

6.5. Isolation of Energy Sources

When taking plant out of service for maintenance, repair, installation and cleaning it must be appropriately isolated to manage any risk associated with an unexpected release of energy. The person responsible for the plant should be notified on about the reason and likely duration of the isolation. The damage to the equipment should be recorded in SafetyNet or the unit's local maintenance register identifying the issue, associated hazards and recommended controls.

The damaged plant/equipment should be stored in a location where it is not accessible to staff. A competent person should ensure the damaged component of the plant/equipment is verified and effectively isolated and that energy is dissipated. A danger tag should then be fixed to the damaged plant/equipment informing other operators what the problem is. This process will allow easy identification of unsafe plant.

Testing of the isolation control should occur to ensure health and safety. In order to effectively isolate plant a device should be used that effectively locks out the isolation points. Devices can include switches with built in locks and lock-out circuit breakers, fuses and valves. Other devices can include chains, safety lock-out jaws (also known as hasps) and safety padlocks.

6.5.1 Safety Tags

Two types of safety tags used on University of Wollongong sites are Danger Tags and Out of Service Tags:

- **Danger Tags:** Danger tags are applied by any worker who will be working on energy supply services, i.e. electrical, water, gas and hydraulics. A danger tag on plant or equipment is a warning that operation may endanger users. In some situations lock-outs may also be used to prevent the equipment from being used. Note: Danger tags are to be used in conjunction with all lock out devices.
- **Out of Service Danger Tags:** An out of service tag is a notice that distinguishes equipment out of operation for repairs or alteration, or plant that is still being installed or commissioned. Do not operate equipment whilst this tag is in use.

Areas that do not have a safety tag to identify unsafe equipment should place an [Out of Service Danger Sign](#) on the equipment to identify the risk. This process should be reflected in the local area's plant inspection and monitoring procedures or other applicable procedure.

Refer to [Isolation \(Danger Tagging & Locking\) Procedure](#) for further information on the requirements for use of Danger Tags and Out of Service Tags.

7. Plant Registration

The University's [WHS Design and Modifications Guidelines](#) should be referred to for assistance in managing the risk associated with the design of plant. Appendix 1: Items of Plant Requiring Registration.

7.1. Design and Altered Design Registration

If plant design has not already been registered or has been altered as a result of modifications to the plant and the alterations could affect health and safety, then the plant design must be registered. The design must be verified by a competent design verifier who provides a statement that the design has been produced in accordance with published technical standards or engineering principles specified by the designer.

Additionally if a registered plant design is altered and required any new control measures then the altered design must be registered. A full list of plant requiring registration of design has been outlined in Appendix 1

7.2. Item Registration

All plant items requiring registration have been outlined in Appendix 1. Any person managing plant items listed in appendix one must apply to WorkCover to register the item of plant. I item must be inspected and a statement provided by a competent person stating that the plant is safe to operate. If the design of the plant was also required to be registered then the design registration number must be included with the application.

8. Records

All records for design or item registration, tests, inspections, maintenance, commissioning, decommissioning, alterations, and any other relevant information on plant must be kept for the period that the plant is used or until the no longer in use or controlled by the University. Records must be available for inspection and for any person whom might relinquish control of the plant.

Any records for presence sensing safeguarding system at a workplace must also be kept. Records of safety integrity tests, inspections, maintenance, commissioning, decommissioning, dismantling or alteration must be kept for the life of the plant or until control is relinquished or in any other case for 5 years.

9. Monitoring

9.1. Control Measures

The effectiveness of control measures implemented to minimise the risk of identified WHS hazards are to be monitored as per the [WHS Risk Management Guidelines](#). This includes:

- post implementation follow-up of corrective actions
- scheduled workplace inspections and testing by local units
- review of incident and hazard reports
- WHS verification audits.

9.2. Reporting

Any hazards that are identified with unsafe plant need to be reported on [SafetyNet](#)

10. Program Evaluation

In order to ensure that these guidelines continue to be effective and applicable to the University, the program will be reviewed triennially. However, more frequent reviews may be required as per legislative changes, corrective actions or continuous improvement.

Following completion of any review, these guidelines will be revised in order to correct any deficiencies. Any changes will be consulted via the WHS Committee.

11. Related Documents

- [WHS Risk Management Guidelines](#)
- [WHS Design and Modifications Guidelines](#)
- [Hazard and Incident Reporting](#)
- [Development of Safe Work Procedures Guidelines](#)
- [WHS Records Handling Guidelines](#)
- [Records Management](#)
- [Workplace Safety Inspection Guidelines](#)
- [Air and Health Monitoring Guidelines](#)
- [WHS Training Guidelines](#)
- [WHS Purchasing Guidelines](#)

12. Reference Material:

- [NSW WHS Act 2011](#)
- [NSW WHS Regulation 2011](#)
- [National Standard for Plant, NOHSC: 1010, 1994](#)
- AS2550 Cranes, hoists and winches
- AS1576 Scaffolding
- AS1735 Lifts, escalators and moving walks
- AS3788 Pressure equipment
- AS1636 Tractors - Roll-over protective structures

13. Version Control Table

| Version Control | Date Released | Approved By | Amendment |
|-----------------|----------------|-------------|--|
| 1 | January 2006 | Manager WHS | Document created |
| 2 | April 2008 | Manager WHS | Document reviewed with minor changes |
| 3 | November 2009 | Manager WHS | Plant and Equipment Guideline and Inspection and Testing Guideline combined. Monitoring added. |
| 4 | April 2010 | Manager WHS | Minor review no significant changes |
| 5 | August 2010 | Manager WHS | Document updated to incorporate the Personnel name change to Human Resources Division |
| 6 | April 2012 | Manager WHS | Scheduled review, amended Section 5.7 Safety Tags |
| 7 | November 2012 | Manager WHS | Reviewed and updated to meet requirement of WHS legislation. |
| 8 | March 2013 | Manager WHS | Scheduled review minor changes only. |
| 9 | September 2014 | Manager WHS | Major updates to matrix in Appendix 2 to ensure alignment with legislation and Australian Standards. |
| 10 | May 2015 | Manager WHS | Updated to incorporate changes resulting from amendments that were made to the NSW WHS Regulation 2011. The changes came into effect in NSW on 13 February 2015. Updated to meet requirements of the National Audit Tool Version 3. |
| 11 | July 2016 | Manager WHS | Rebrand. Change National Certificate of Competency to High Risk Work Licence. |

Appendix 1: Items of Plant Requiring Registration.

Plant Requiring Registration of Design:

- Pressure equipment, other than pressure piping, and categorised as hazard level A, B, C or D according to the criteria in Section 2.1 of *AS 4343 Pressure equipment – hazard levels*
- Gas cylinders covered by Part 1.1 of *AS 2030.1 Gas cylinders - General Requirements*
- Tower cranes including self-erecting tower cranes
- Lifts, including escalators and moving walkways
- Building maintenance units
- Hoists with a platform movement exceeding 2.4 metres, designed to lift people
- Work boxes designed to be suspended from cranes
- Amusement devices covered by Section 2.1 of *AS 3533.1:2009 - Amusement Rides and Devices*, except Class 1 structures (see below)
- Concrete placement units with delivery booms
- Prefabricated scaffolding
- Boom-type elevating work platforms
- Gantry cranes with a safe working load greater than 5 tonnes or bridge cranes with a safe working load of greater than 10 tonnes, and any gantry crane or bridge crane which is designed to handle molten metal or Schedule 10 hazardous chemicals
- Vehicle hoists
- Mast climbing work platforms
- Mobile cranes with a rated capacity of greater than 10 tonnes

Note: The plant listed as requiring design registration does not include:

- A heritage boiler
- Any pressure equipment (other than a gas cylinder) excluded from the scope of AS/NZS 1200:2000 (Pressure equipment)
- A crane or hoist that is manually powered
- A reach stacker
- An elevating work platform that is a scissor lift or a vertically moving platform
- A tow truck
- Certain Class 1 structures including:
 - playground structures
 - water slides where water facilitates patrons to slide easily, predominantly under gravity, along a static structure
 - wave generators where patrons do not come into contact with the parts of machinery used for generating water waves
 - inflatable devices that are sealed
 - inflatable devices that do not use a non-return valve.

Plant Items Requiring Registration:

- Boilers categorised as hazard level A, B or C according to criteria in Section 2.1 of AS 4343:2005 (Pressure equipment—Hazard levels).
- Pressure vessels categorised as hazard level A, B or C according to the criteria in Section 2.1 of AS 4343:2005 (Pressure equipment—Hazard levels), except:
 - gas cylinders; and
 - LP gas fuel vessels for automotive use; and
 - serially produced vessels.
- Tower cranes including self-erecting tower cranes.
- Lifts, including escalators and moving walkways.
- Building maintenance units.
- Amusement devices covered by Section 2.1 of AS 3533.1:2009 (Amusement rides and devices—Design and construction), except devices specified in clause 4(2).
- Concrete placement units with delivery booms.
- Mobile cranes with a rated capacity of greater than 10 tonnes.

Note: The plant listed as requiring design registration does not include:

- Any pressure equipment (other than a gas cylinder) excluded from the scope of AS/NZS 1200:2000 (Pressure equipment), or
- A crane or hoist that is manually powered
- A reach stacker
- Amusement devices including
 - class 1 devices
 - playground structures
 - water slides where water facilitates patrons to slide easily, predominantly under gravity, along a static structure
 - wave generators where patrons do not come into contact with the parts of machinery used for generating water waves
 - inflatable devices, other than inflatable devices (continuously blown) with a platform height of 3 metres or more.

Appendix 2: UOW Inspection and Testing Matrix

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|---------------------------------------|----------------------------------|--|---|--|--|
| Fire Protection Systems and Equipment | Automatic Fire Sprinkler Systems | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via facilities management contractor.</p> | <p>As per AS1851, Section 2 – specifically:</p> <p>Table 2.4.2.1 Table 2.4.2.3</p> <p>Table 2.4.2.2 Table 2.4.2.4</p> <p>Table 2.4.3.1 Table 2.4.3.2</p> <p>Table 2.4.3.3 Table 2.4.3.4</p> <p>Table 2.4.4.1 Table 2.4.4.2</p> <p>Table 2.4.4.3 Table 2.4.4.4</p> <p>Table 2.4.5.1 Table 2.4.5.2</p> <p>Table 2.4.5.3 Table 2.4.5.4</p> | AS 1851 | <p>Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404)</p> <p>Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404)</p> <p>Certificate III in Fire Protection (BCP30503)</p> <p>Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704)</p> |
| | Fire Pumpsets | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via facilities management contractor.</p> | <p>As per AS1851, Section 3 – specifically:</p> <p>Table 3.4.1 Table 3.4.5.1</p> <p>Table 3.4.2 Table 3.4.5.2</p> <p>Table 3.4.3</p> <p>Table 3.4.4</p> | AS 1851 | <p>Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404)</p> <p>Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404)</p> <p>Certificate III in Fire Protection (BCP30503)</p> <p>Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704)</p> |
| | Fire hydrant systems | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via</p> | <p>As per AS1851, Section 4 – specifically:</p> <p>Table 4.4.1</p> <p>Table 4.4.2</p> | AS 1851 | <p>Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404)</p> <p>Certificate III in Asset Maintenance (Fire Protection Equipment</p> |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|----------|---|---|--|--|---|
| | | facilities management contractor. | Table 4.4.3 Table 4.4.4 | | PRM30404) Certificate III in Fire Protection (BCP30503) Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704) |
| | Water Storage Tanks for Fire Protection Systems | Manager Maintenance, Facilities Management Division. | As per AS1851, Section 5 – specifically: Table 5.4.1 Table 5.4.2 Table 5.4.3 Table 5.4.4 | AS 1851 | Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404) Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404) Certificate III in Fire Protection (BCP30503) Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704) |
| | Fire Detection and Alarm Systems | Manager Maintenance, Facilities Management Division. IC Management via Facilities Management contractor. | As per AS1851, Section 6 - specifically: Table 6.4.1.2 Table 6.4.1.3 Table 6.4.1.4 Table 6.4.1.5 Table 6.4.3.1 Table 6.4.3.2 Table 6.4.4.1 Table 6.4.3.3 Table 6.4.2.2 Table 6.4.2.3 | AS 1851 | Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404) Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404) Certificate III in Fire Protection (BCP30503) Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704) |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|----------|-----------------------------|---|--|--|---|
| | Special Hazard Systems | Manager Maintenance, Facilities Management Division. IC Management via Facilities Management contractor. | As per AS1851, Section 7 – specifically: Table 7.4.2 Table 7.4.3 Table 7.4.4 Table 7.4.5 | AS 1851 | Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404) Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404) Certificate III in Fire Protection (BCP30503) Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704) |
| | Delivery Lay Flat Fire Hose | Manager Maintenance, Facilities Management Division. IC Management via Facilities Management contractor. | As per AS1851, Section 8 – specifically: Table 8.4 | AS 1851 | Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404) Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404) Certificate III in Fire Protection (BCP30503) Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704) |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|----------|---|--|---|--|--|
| | Fire Hose Reels | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via Facilities Management contractor.</p> | <p>As per AS1851, Section 9 – Specifically:</p> <p>Table 9.4.1</p> <p>Table 9.4.2</p> | AS 1851 | <p>Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404)</p> <p>Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404)</p> <p>Certificate III in Fire Protection (BCP30503)</p> <p>Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection PRM40704)</p> |
| | Portable and Wheeled Fire Extinguishers | <p>Manager Maintenance, Facilities Management Division.</p> | <p>As per AS1851, Section 10 – Specifically :</p> <p>Table 10.4.1</p> <p>Table 10.4.2</p> <p>Table 10.4.3</p> | AS 1851 | <p>Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404)</p> <p>Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404)</p> <p>Certificate III in Fire Protection (BCP30503)</p> <p>Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704)</p> |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|----------|----------------------------------|--|--|--|--|
| | Fire Blankets | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via Facilities Management contractor.</p> | <p>As per AS1851, Section 11 – Specifically: Table 11.4</p> | AS 1851 | <p>Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404)</p> <p>Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404)</p> <p>Certificate III in Fire Protection (BCP30503)</p> <p>Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704)</p> |
| | Passive Fire and Smoke Detectors | <p>Manager Maintenance, Facilities Management Division.</p> | <p>As per AS1851, Section 12 – Specifically: Table 12.4.1.1 Table 12.4.3.2 Table 12.4.1.2 Table 12.4.4 Table 12.4.1.3 Table 12.4.5 Table 12.4.1.4 Table 12.4.6 Table 12.4.2 Table 12.4.7 Table 12.4.3.1</p> | AS 1851 | <p>Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404)</p> <p>Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404)</p> <p>Certificate III in Fire Protection (BCP30503)</p> <p>Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704)</p> |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|----------|---|---|--|--|---|
| | Fire and Smoke Control Features of Mechanical Systems (Smoke Hazard Management Systems) | Manager Maintenance, Facilities Management Division. | As per AS1851, Section 13 – Specifically: Table 13.4.1.2 - 26 Table 13.4.2.2 - 9 Table 13.4.3.2 - 4 | AS 1851 | Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404) Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404) Certificate III in Fire Protection (BCP30503) Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704) |
| | Emergency Planning in Facilities | Manager Maintenance, Facilities Management Division. IC Management via Facilities Management contractor. | As per AS1851, Section 14 – Specifically: Table 14.4.1 Table 14.4.2 Table 14.4.3 | AS 1851 | Certificate II in Asset Maintenance (Fire Protection Equipment PRM20404) Certificate III in Asset Maintenance (Fire Protection Equipment PRM30404) Certificate III in Fire Protection (BCP30503) Certificate IV qualification in Asset Maintenance (Fire Protection Systems Inspection) (PRM40704) |
| | Emergency Escape Lighting and Exit Signs for Buildings | Manager Maintenance, Facilities Management Division. IC Management via Facilities Management contractor. | As per AS2293.2, Sections 2 and 3. | AS/NZS 2293.2:1995 | Must be completed in accordance to procedures outlined in AS/NZS 2293.2:1995. Competencies not defined. |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|---------------------|--|---|--|--|--|
| Plant and Equipment | Standby power systems | Manager Maintenance, Facilities Management Division. IC Management via facilities management contractor. | AS3009, Appendix B. | Nil Guidance: AS3009 (hospitals) NFPA 110 US | |
| | Lifts | Manager Maintenance, Facilities Management Division. IC Management via Facilities Management contractor. | As per AS 1735.2 Registration – Yearly. | WHS Regulation 2011: Clause 236 AS1735.2 | Qualified Lift Inspector |
| | Electrical Appliances, Leads and RCD Units | Management of local areas | As per UOW Electrical Safety Guidelines . | WHS Regulation 2011: Part 4.7; UOW Electrical Safety Guidelines; AS3190. | Understanding requirements of AS/NZS 3190:2011 |
| | Electrical Protection Devices | Management of local areas | As per AS3760, Table 4. As per UOW Electrical Safety Guidelines | AS3190; UOW Electrical Safety Guidelines. | Understanding requirements of AS/NZS 3190:2011 |
| | Water Temperature Controls | Manager Maintenance, Facilities Management Division. IC Management via Facilities Management contractor. | As per AS4032.3, Section 2. | AS4032.3-2004. | Understanding requirements AS 402.3-2004 |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|----------|------------------------------|--|---|--|---|
| | Backflow Prevention Devices | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via Facilities Management contractor.</p> | As per AS2845.3, Section 2. | AS2845.3 | Understanding requirements AS 2845.3:2010 |
| | Boilers and Pressure Vessels | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via Facilities Management contractor.</p> | <p>As per AS3788, Sections 2 and 4.</p> <p>Registration – Yearly.</p> | AS3788; WHS Regulation 2011: Part 2, Section 3 | Competency of a person or body may be demonstrated through an appropriate combination of the evidence listed in Table V1 in AS/NZS 3788:2006 (e.g. relevant knowledge, experience, training, third party assessment or certification, etc). |
| | Cooling Towers | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via Facilities Management contractor.</p> | As per AS3666.3, Section 3. | AS3666.2; AS3666.3; Local council requirements. | Understanding requirements AS/NZS 3666.3:2011 and AS/NZS 3666.2:2011. |
| | Fume Cupboards | <p>Manager Maintenance, Facilities Management Division.</p> <p>IC Management via Facilities Management contractor.</p> | As per AS2243.8, Section 5.5 and Appendix F. | AS2243.8 | |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|----------|---|---|--|--|---|
| | Machinery controls, interlocks and guarding including emergency stop points | Management of local areas OR Manager Maintenance, Facilities Management Division. | As per AS 4024.1 | As per AS 4024.1 | |
| | Fall Arrest Systems | Manager Maintenance, Facilities Management Division. IC Management via facilities management contractor. | As per AS 1891.4, Section 9. | AS1891.4 | Height safety operator who has been trained and assessed as competent in carrying out the operator inspections specified in clause 9.2 in AS/NZS 1891.4:2009. |
| | Synthetic Fibre Rope Slings | Manager Maintenance, Facilities Management Division. Management of local areas | As per AS4497.2, Section 9. | AS4497.2 | Competent user who understands requirements of AS 4497.2-1997. |
| | Flat Synthetic-Webbing Slings | Manager Maintenance, Facilities Management Division. Management of local areas | As per AS1353.2, Section 9. | AS1353.2-1997 | Person competent in inspecting and testing flat synthetic webbing slings according to requirements in AS1353.2-1997 |
| | Chain Slings | Management of local areas | As per AS3775.2, Section 9. | AS3775.2-2004 | Person competent in inspecting and testing chain slings according to requirements in AS 3775.2—2004 |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|----------|---|--|---|--|--|
| | Wire-rope slings | Management of local areas | As per 1666.2, Section 10. | AS1666.2 | Periodic inspection shall be conducted by a competent who understands the requirements of AS 1666.2—2009 person and appropriate records shall be kept. |
| | Autoclave | Management of local areas | As per AS2243.3, Section 6.6.3(k) | AS2243.3 | Person competent in inspecting and testing an Autoclave according to requirements in AS/NZS 2243.3:2010. |
| | Biological Safety Cabinets | Management of local areas | As per AS2243.3, Section 6.7.4.1(d) | AS2243.3 | Person competent in inspecting and testing an Biological Safety Cabinets according to requirements in AS/NZS 2243.3:2010. |
| | Emergency Eyewash and Shower Equipment | Management of local areas IC Management via Facilities Management contractor. | As per AS4775, Sections 6, 7 and 8. | AS4775:2007 | Person competent in inspecting and testing safety showers and eyewash facilities according to requirements in AS/NZS 4775:2007. |
| | Powered Industrial Trucks (Forklift Trucks) | Management of local areas | As per AS 2359.2, Section 6; UOW Forklift Truck Checklist Making Your Forklift Work For You Checklist | AS2359.6 | |
| | Compressor | Manager Maintenance, Facilities Management Division. | | | |

| Category | Item | Responsibility | Inspection and Testing Requirements, Records and Frequency | Applicable Legislation, Codes of Practice or Standards | Minimum Competency Requirements for Testing and Inspecting and Return to Service |
|---------------|--|--|--|---|--|
| | Gas Cylinders | Management of local areas IC Management via Facilities Management contractor. | AS2030 Gas cylinders | | Person competent in inspecting and testing gas cylinders in accordance with the relevant parts of AS 2030, of AS 2337.1, and of the other relevant Parts of AS 2337. |
| | Cranes, hoists and winches | Management of local areas | AS1418 Cranes, hoists and winches AS2550 Cranes, hoists and winches | | Person competent in inspecting and testing cranes, hoists and winches in accordance with the applicable parts of AS 1418.1, 2550.1. |
| Facilities | Physical containment facility (Levels 1-4) | Management of local areas GTRC | As per AS2243.3 and yearly GTRC Inspections | AS2243.3; Gene Technology Act and Regulation | Person competent in inspecting and testing requirements outlined in 2243.3:2010. |
| | Radiation laboratory | Management of local areas | As per AS2243.1 | AS2243.4; AS2243.5 | Person competent in inspecting and testing requirements outlined in 2243.4. |
| Miscellaneous | First aid kits | WHS Unit UOW Nominated First Aid Officers | As per UOW First Aid Guidelines , Section 11. | WHS Regulation 2011; First Aid Code of Practice (WorkCover NSW); UOW First Aid Guidelines | UOW Nominated First Aid Officer. |

Appendix 3: Plant Requiring Records to be Maintained

- Boilers categorised as being of hazard level A, B or C according to the criteria in Section 2.1 of AS 4343:2005
- Pressure vessels as categorised as being of hazard level A, B or C according to the criteria in AS 4343:2005 except the following:
 - Gas cylinders
 - LP gas fuel vessels for automotive use covered by AS/NZS 3509:2009, serially produced pressure vessels covered by AS 2971:2007,
 - pressure vessels that do not require periodic internal inspection in accordance with the criteria in Table 4.1 in AS/NZS 3788:2006
- Tower cranes
- Lifts (including escalators and moving walkways)
- Building maintenance units
- Concrete placing units (truck mounted with boom)
- Personnel and material hoists
- Concrete placing units
- Industrial lift trucks
- Mobile cranes
- Gantry cranes with a rated capacity greater than 5 tonnes
- Bridge cranes with a rated capacity greater than 10 tonnes
- Gantry cranes and bridge cranes designed to handle molten metal or dangerous goods (within the meaning of the Australian Dangerous Goods Code)
- Boom type elevating work platforms
- Hoists, with a platform movement in excess of 2.4 metres, designed to lift or support people
- Mast climbing work platforms
- Vehicle hoists
- Amusement devices