

# Procedure: Plant and equipment safety management

## Purpose

The purpose of this procedure is to define the requirements for Plant and Equipment to control the risk of injury at Australian National University (ANU) and to ensure compliance with the Work Health and Safety Act, 2011 (Cth), the Work Health and Safety Regulations, 2011(Cth) and the University's Work Health & Safety (WHS) Management System. This procedure provides a clear and consistent framework for local areas to safely manage plant and equipment systems and is linked to Australian National University's Work health and safety policy and is one of the Safe Work Procedures within the WHS Management System.

## Definitions

**Competent Person** means a person who has acquired, through training, qualifications, experience, or combination of these, the knowledge and skill enabling the person to inspect, test or repair machinery/equipment or installation.

**Local area** refers to a College, Research School or Service Division area of the University.

**Like-for-like plant/equipment** mean plant/equipment that is functional equivalent for an existing plant/equipment that the University owns. It may be similar in design, use and maintenance, whether or not from the same manufacturer.

**Plant** is defined in the [Work Health & Safety Act 2011](#) as:

- a. any machinery, equipment, appliance container, implement and tool; and
- b. any component of any of those things; and
- c. anything fitted or connected to any of those things.

Plant used at the University ranges from complex installations to portable equipment and tools. The plant may be purchased, created for, and employed in, any aspect of University business. Plant at the University may include:

- plant under pressure e.g. autoclaves, boilers, gas cylinders;
- plant with moving and rotating parts e.g. presses, lathes, milling machine;

- powered mobile Plant e.g. electric vehicles; vehicle hoists;
- plant designed to lift or move e.g. cranes, forklifts, hoists and elevating work platforms; earthmoving machinery;
- industrial robots and other remotely or automatically energised equipment;
- lasers and laser products;
- non-powered hand tools e.g. screwdriver, chisel, hammer etc. small office equipment; and
- University vehicles e.g. forklifts, golf carts, off road vehicles, cars etc.

**Worker** refers to anyone who carries out work for the University. A worker includes staff, volunteers, contractor, students and visitors at the University.

## Procedure

### Scope

1. The procedure applies to all plant, equipment and systems under the control of the University. It applies to the following:
  - all University workers who are involved in the importation, supply, installation/erection, commissioning, use, alteration, dismantling, storage and disposal of University controlled plant; and
  - plant, which includes any machinery, equipment (including scaffolding), appliance, implement or tool and any component or fitting thereof or accessory thereto.

### Responsibilities

2. The local area is responsible for:
  - ensuring a hazard assessment undertaken prior to and following the commissioning stage;
  - ensuring that effective consultation has been undertaken with affected workers during the design, acquisition and purchasing stages of any plant;
  - ensuring that all plant is recorded within a local area plant register;
  - ensuring that operating procedures are available for workers for each hazardous/duty involving the use of plant;
  - ensuring that users, operators and those workers responsible for maintaining plant are competent and have received the necessary training in order to fulfil their job duties;
  - maintaining of plant is undertaken in accordance with manufacturer's specifications and any other requirements identified, i.e. via a hazard

assessment; and

- provision of appropriate information to the dismantler or new owner during the decommissioning, dismantling and disposal stages;

3. Workers are responsible for:

- obtaining the necessary training and competencies prior to undertaking all required tasks associated with plant;
- ensuring effective hazard management strategies are in place prior to the use and operation of plant; and
- using the plant only for the purpose for which it is intended and designed.

### **Designing or manufacturing of plant**

4. When a local area within the University engages in activities that include the design and construction of plant (usually in support of research and teaching), the person responsible for that activity is responsible to ensure that the University fulfils its duties as a designer and manufacturer of plant.

5. Prior to the commencement of design and construction of the plant, the person responsible for the activity is to ensure that [hazard assessment](#) as described in the WHS Hazard management procedure is undertaken for the plant. All statutory requirements for design and/or registration must be in place with regulatory authorities and in alignment with the [Code of Practice Managing Risks of Plant in the Workplace](#).

6. The person responsible for the design and manufacture of the plant in a local area is to ensure that the design is consulted on and approved prior to manufacture.

### **Acquisition, purchase or sale of plant**

7. The person responsible for the purchase, hire or acquisition of plant and equipment in a local area shall:

- ensure that a [Plant pre-purchase assessment checklist](#) is completed;
- ensure that a [Hazard assessment](#), is conducted and documented via the [Plant risk assessment and management strategy \(PRAMS\) form](#), or [Hazard assessment form](#) or other equivalent local area Hazard assessment documentation;
- ensure any statutory requirements are met for design and/or registration with regulatory authorities and the [Work Health and Safety \(Managing Risks of Plant in the Workplace\) Code of Practice 2015](#).

8. When purchase, hire or acquire like-for-like plant/equipment, the person responsible shall:
- ensure a [Plant pre-purchase assessment checklist](#) is completed;
  - review the hazard assessment of the existing/replaced functionally equivalent plant/equipment, identify, assess and control new hazards, if any, and/or implement existing controls accordingly as appropriate;
  - ensure any statutory requirements are met for design and/or registration with regulatory authorities and the [Work Health and Safety \(Managing Risks of Plant in the Workplace\) Code of Practice 2015](#).
9. The plant pre-purchase assessment checklist identifies acquisition, hiring and purchase requirements and potential problems of an item of plant. This information potentially reduces inappropriate commitment of University finances and/or exposure of workers to hazards due to unsuitable plant. Reputable suppliers, manufacturers and retailers of plant may assist in completing the checklist and may provide a demonstration or trial of plant to ascertain the suitability to workplace requirements.
10. Where the supply/ importation/sale of plant is for the purpose of scrap or spare parts, accompanying documentation and a marking of the plant confirming this is required prior to the plant being supplied. This is to ensure that the University does not place the plant or equipment into service.

## **Installation**

11. University workers responsible for the installation or erection of plant in a workplace will take all reasonably practicable steps to ensure that hazards identified with plant have their associated risks effectively controlled. This is to occur before the plant is commissioned for use.
12. The installer, erector and other people engaged in the installation process will follow designer/manufacture instructions or the advice of a competent person and all statutory requirements/standards and the [Code of Practice Managing Risks of Plant in the Workplace](#) are to be met.
13. Prior to any excavation work, concrete cutting or coring, an application form [Clearance to Excavate on Property of The Australian National University](#) is to be obtained and authorised by Facilities and Services.
14. Plant purchased directly from overseas is assessed for suitability for use in Australia prior to purchase. Attention to the operating voltage and frequency ranges is essential (particularly in the case of three – phase equipment, whether the rated voltages refer to phase to phase or phase to neutral connection – if the

frequency is incorrect, some devices within plant may overheat, lose time or otherwise fail).

## Commissioning

15. Prior to commissioning, plant is checked, tested, and appropriately inspected to minimise risk to health and safety, in accordance with manufacturer and designer recommendations. Plant is not to be placed into operation until the commissioning and testing process is complete to ensure that the plant is:

- appropriate for the task;
- installed or erected suitably to enable work to be undertaken.
- confirmed by a certificate that it is working according to design and manufactures' specifications.

16. Essential precautions required during the testing and initial start-up to ensure safeguards are maintained at a minimum include:

- all electrical wiring meets the requirements of AS/NZS 3000 Electrical installations (AS/NZ Wiring Rule). For plant with an electrical power supply, the Local Area is responsible for the electrical aspects and must also comply with the [Electrical safety management procedure](#);
- backup power, fire-fighting and other emergency response equipment are in place during the initial commissioning;
- interconnecting utilities and services are checked for satisfactory operation and integration; and
- all guarding and interlocks are in place and working as designed.

17. The Local Area commissioning the installation of new plant and equipment via the responsible person will ensure that:

- a consultation process has been completed involving all stakeholders affected;
- written operational procedures are available for start-up and shutdown operations;
- Local area Piping and Instrumentation Drawings (P and ID) are modified according to any changes;
- the new item of plant is added to the local area plant register and a comprehensive risk assessment is completed with agreed controls in place;
- all relevant workers receive appropriate training and instruction on any residual risks, operational, maintenance, and emergency procedures relating

to first use and aspects directly affecting the relevant tasks; and

- an appropriate hazard assessment is conducted prior to and following the commissioning stage.

## Existing plant and equipment

18. A risk management process is undertaken on existing items of plant to achieve safety, compliance and best use of University resources. The evaluation is best incorporated into the operating procedures and/or associated guidance material for the plant.

19. All existing plant are included in the local area plant register.

## Operating procedures

20. Operating procedures are required for each hazardous duty/task involving the use of plant.

21. Safe work procedures are documented by the responsible person of a local area in conjunction with the manufacture's instruction manual(s).

22. Each responsible person of a Local Area with plant and equipment will ensure that:

- the risks, which may arise from the use of plant, and associated systems of work, are minimised to an acceptable level;
- each item of plant has a pre-work risk assessment or checklist associated with it;
- methods to prevent the unauthorised use of plant are implemented to minimise the risk to health and safety;
- workers are prevented from coming into contact with plant with moving parts through appropriate risk control (e.g. [Fixed plant and equipment – machine guarding procedure](#));
- any personal protective equipment required shall be incorporated within the standard operational procedures for that plant; and
- maintenance, isolation and cleaning procedures of plant are carried out in compliance with the procedure.

## Duties of an operator

23. Workers are not to use any plant unless necessary instruction, training, and supervision is provided to minimise risks to health and safety during its operation. Workers will take all reasonably practicable steps to ensure they:

- immediately report all incidents, injuries, near misses or hazards associated with an item of plant to supervision.
- comply with all requirements relating to plant that they are operating and any related University procedure;
- conduct a pre-work hazard assessment or inspection prior to working;
- use the plant only for the purpose for which it is designed, or where a competent person determines its purpose is safe to do so;
- have appropriate and current high risk work licence or competency to operate plant (where required) ([Licensing of high risk work](#) procedure);
- use as intended all appropriate safety features and warning devices;
- use any required personal protective equipment (e.g. safety glasses, footwear etc.);
- notify their immediate supervisor verbally of any defect or other hazard on the plant being operated, and lodge a hazard report via the Workplace incident and hazard reporting tool as per the [WHS incident management procedure](#). The supervisor must act to eliminate the hazard or control the risk, as reasonably practicable. The plant must be isolated or 'Out of Service tagged' as per the [Isolation and danger tagging procedure](#) until repaired.

### **Maintenance (statutory, preventative and corrective)**

24. The person responsible in a Local Area is responsible to maintain plant in their areas in a safe working condition according to manufacturer's specifications. Maintenance of plant includes statutory maintenance (required by outside authorities), preventative maintenance (recommended by manufacturers) and corrective maintenance (repair).

25. Repairs on plant are undertaken by a competent person, who has the necessary trades experience, knowledge and skills for the repair. All repairs and/or maintenance on plant are recorded and entered onto the local area plant register. Repairs are carried out in a manner that does not alter the original design of the plant (otherwise design, construct and manufacture applies).

26. Competent persons verify that plant and equipment is safe before being returned to service after repair or alteration.

27. Maintenance is carried out in accordance with the requirements prescribed in the [Isolation and danger tagging procedure](#). Maintenance of Machine guarding on fixed plant and equipment is carried out as per the [Fixed plant and equipment – machine guarding procedure](#).

## Decommissioning, dismantling and disposal

28. Disposal of radiation apparatus (e.g. laser and x-ray equipment) requires specific approval by the regulator (ARPANSA). Contact a local area Radiation Safety Officer or the [WEG for guidance](#).

29. Some plant may contain hazardous materials. The person responsible is to undertake an inspection of the plant, or a review of any necessary documentation, which may include hazard assessments and manufacturers guidelines. The inspection will take place in the planning stage prior to decommissioning, dismantling and disposal to identify any hazardous materials. If the presence of hazardous materials is suspected or confirmed, the person responsible will contact the WEG for further guidance.

30. If plant is dismantled, decommissioned or otherwise sold for disposal, the local area person responsible for the plant and equipment will ensure all relevant information provided by the designer and manufacturer is passed onto the competent person to dismantle and or the new owner.

## Records

31. Local area records and documentation, such as hazard assessments, pre purchase hazard assessments, PRAMS and safe operating procedures are to be stored within the Enterprise Records Management System (ERMS) as per the [WHS Documentation management procedure](#).

## Sources

Legal and other requirements
<i>Work Health and Safety Act 2011 (Cth)</i>
<i>Work Health and Safety Regulations 2011 (Cth)</i>
<i>Work Health and Safety (Managing Risks of Plant in the Workplace) Code of Practice 2015</i>
Comcare Guidance Material Guide for manufacturing of safe plant
AS/NZS 3000: 2007 <a href="#">Electrical installations (known as the Australian/New Zealand</a>

Wiring Rules)

## Document information

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