
Plant Safety Procedures

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1. Governing Policy

[Work Health and Safety Policy](#)

[Work Health and Safety Management System](#)

2. Purpose

These procedures set out the requirements for managing health and safety risks associated with the use of plant and equipment in University activities.

3. Scope

- a. These procedures apply to:
 - i. all workers and students at workplaces owned, managed or controlled by Flinders University and any place where work is performed by a worker on behalf of the University, and
 - ii. plant and equipment owned, designed, constructed, leased or hired by the University.
- b. These procedures must be read in conjunction with the [Electrical Safety Procedures](#) to ensure that the University's electrical safety requirements are met when working with plant.

4. Definitions

Plant	<p>Includes any machinery, equipment, appliance, container, implement and tool, and includes any component or anything fitted or connected to any of those things. Plant includes lifts, cranes, machinery, conveyors, forklifts, vehicles, power tools and amusement devices.</p> <p><i>Note: Plant that relies exclusively on manual power for its operation and which is designed to be supported primarily by hand (e.g. a screw driver) is not covered by WHS Regulations. However, the general duty of care under WHS legislation applies to this type of plant.</i></p>
Registrable Plant	Plant which must be registered with the relevant WHS Regulator ¹ .
Competent person	A person who has acquired through training, qualification and/ or experience the knowledge and skills to carry out the required task, and where required, who is licenced or registered to be a competent person.
High Risk Work	Forklift operation, pressure equipment operation, crane and hoist operation, dogging and rigging work, Elevated Work Platforms and scaffolding work, all of which require a High Risk Work Licence .
Safe work procedures (SWPs)	Written instructions which outline the step-by-step process to be followed when undertaking a task, and which include WHS hazards and controls to minimise any risk(s) of harm.
Fail safe	A state or condition where if any component or function of the plant fails, a system exists to prevent any increase in the risks.

5. Plant risk management

- a. Risks to health and safety associated with plant must be assessed and managed in accordance with the University's [WHS Risk Management Procedures](#).
- b. The plant risk management process must be undertaken:
 - i. when designing, manufacturing, selling or disposing of plant or equipment
 - ii. before purchasing, hiring, leasing, commissioning, erecting or using the plant or equipment
 - iii. whenever new information becomes available regarding plant or equipment
 - iv. when responding to workplace incidents
 - v. whenever changes are made to plant and how it is used.
- c. Consultation, cooperation and coordination must occur with those who will use the plant and where relevant with other businesses or organisations involved with plant at a University workplace (for example those who carry out installation or repair) or who share the workplace with the University.
- d. Specific controls as required under the WHS Regulations must be in place for the following types of plant:
 - i. powered mobile plant
 - ii. plant that lifts or suspends loads

¹ SafeWorkSA (for South Australia), or equivalent regulator in other States/Territories. For radiation apparatus, Environmental Protection Agency (SA) or equivalent interstate regulator.

- iii. plant used in connection with tree lopping
 - iv. industrial robots
 - v. lasers
 - vi. pressure equipment
 - vii. scaffolds, and
 - viii. plant with presence-sensing safeguarding systems.
- e. The provisions of the Code of Practice *Managing the Risks of Plant in the Workplace* must be followed as a minimum standard for control measures including plant guarding, operator controls, emergency stops, warning devices and isolation of energy sources.

6. Safe work procedures

- a. Safe work procedures must be developed and maintained for the safe operation/use of plant and equipment, taking into account:
- i. plant/equipment risk assessments
 - ii. regulatory requirements, where appropriate
 - iii. standard industry operation, and
 - iv. manufacturer's/supplier's requirements.
- b. Safe work procedures must include instructions, where relevant, on:
- i. preoperational start up checks
 - ii. safe operation of the plant/equipment
 - iii. the correct use of guarding and other control measures
 - iv. who may use an item of plant or equipment (for example, only authorised or licensed operators)
 - v. how to carry out inspections, shutdown, cleaning, repair and maintenance
 - vi. traffic rules, rights of way, clearances and no-go areas for mobile plant, and
 - vii. emergency procedures.
- c. Safe work procedures, including any relevant emergency procedures relating to an item of plant or equipment must be readily accessible to workers and students who use, or are likely to use, the plant.

7. Purchasing and hiring plant

- a. The person purchasing or hiring the plant or equipment must:
- i. check that it is suitable for the intended use, including the environment it will be used in and the workers using it
 - ii. when hiring plant, both the hirer and the person from whom the plant has been hired must ensure, as far as reasonably practicable, that the plant is safe to use. This may involve checking the plant has been inspected and maintained (e.g. via log books or other) according to the manufacturers specification
 - iii. ensure that the supplier provides the manufacturer's operator manuals about the proper use of the plant
 - iv. ensure that all hired plant is installed, inspected and operated by competent workers and risk assessed before use
 - v. ensure a pre-operation check is conducted on the plant to determine that it is in good working condition and all controls and safety features are functional.

b. Before purchasing or hiring plant the following must be determined:

- i. the hazards and risks associated with installation, commissioning, operation, inspection, maintenance, repair, transport, storage and dismantling of the plant
- ii. control measures needed to minimise these hazards and risks
- iii. the manufacturer's recommendations for the frequency and type of inspection and maintenance needed
- iv. special skills required for people who operate the plant or carry out inspection and maintenance, including preventative maintenance, and
- v. special conditions or equipment required to protect the health and safety of people carrying out activities.

(see [Plant Safety](#) website for relevant forms – including Plant equipment pre-purchase WHS Checklist)

8. Installation and commissioning of plant

- a. Plant must be installed by a competent person, according to the manufacturer's instructions.
- b. The plant installation process must include inspections to ensure risks associated with the installation process are monitored, so far as is reasonably practicable.
- c. Any new hazards identified during installation of the plant must be risk assessed and control measures identified and implemented before the plant is commissioned.
- d. Plant must be commissioned (adjusted, tested and inspected) to ensure it is in full and safe working order before it is used.
- e. Ensure that any impact on infrastructure or the surrounding environment has been considered and controlled.

9. Plant requiring registration

- a. Specific items of plant, as listed in [Appendix A](#), must be registered with the relevant regulator.
- b. Applications to the Environmental Protection Authority (or interstate equivalent) must be made for radiation plant.
- c. Registrable plant must not be used in the workplace until it has been registered.
- d. If a registered plant design is altered so as to require any new risk control measures, the altered design must be registered.
- e. Registration of an item of plant may include conditions imposed by the regulator.

10. Licences and permits

- a. Workers who use certain types of plant, such as forklift trucks, materials hoists, pressure equipment and certain types of cranes, as specified in WHS Regulations, must have a [High Risk Work Licence](#) relevant to the work being undertaken before they can operate.
- b. A University Work Permit/Permit to Proceed must be obtained prior to work commencing where work with or on plant involves;
 - i. confined spaces
 - ii. working at heights
 - iii. excavation
 - iv. service isolation
 - v. hot work
 - vi. asbestos

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- c. Workers and students operating ionising radiation apparatus must have an appropriate [radiation licence](#) as prescribed in legislation and available through the [SA Environmental Protection Agency](#) (EPA) or interstate equivalent.

11. Instruction, training and supervision

- a. All workers, students and others who are to use plant or equipment must be trained in its use before they operate the plant.
- b. Managers and supervisors must provide workers, students and others who are to use plant or equipment with information, training, instruction and/or supervision in the correct use of the plant or equipment and any risk control measures. This includes ensuring that users of plant or equipment:
- are appropriately licenced (where required)
 - are trained in, and follow, safe work procedures and/or safe work practices
 - use hazard controls that are in place
 - use safety devices or guards
 - do not remove, override or modify safety devices or guards
 - understand and are able to use emergency procedures and stops, and
 - have an appreciation of the nature of any hazards, the risks associated with them and the reason for the hazard controls.
- c. Safety information must also be provided by the manufacturer or the owner of the plant to persons who are involved in installing, commissioning, testing, maintaining or repairing plant or equipment, as well as decommissioning, dismantling or disposing of plant or equipment.

12. Using plant in the workplace

- a. Managers and supervisors must:
- so far as is reasonably practicable, prevent unauthorised alterations to, or interference with, the plant or equipment
 - take all reasonable steps to ensure that the plant/equipment is used only for the purpose for which it is designed, unless a competent person has undertaken and documented a risk assessment to determine that the proposed use does not increase the risk to health and safety, and
 - ensure that all safety features, warning devices, guarding, operational controls and emergency stops are used in accordance with instructions and information provided.

13. Modifying plant and/or its use

- a. The risk management process of hazard identification, risk assessment and risk control must be used when the design, proposed modification or change in the use of any plant or equipment is being planned.
- b. If the plant is to be used in a different way or for a purpose for which it was not designed, the risks associated with the new use must be assessed and documented by a competent person. If a competent person decides that the plant is not suitable for the proposed task, it must not be used for that task.
- c. If a registered plant design is altered so as to require any new risk control measures, the altered design must be registered.
- d. Changes made to plant must be shown on the plant's technical drawings and/or electrical wiring diagrams where these are available. These documents must be kept for the life of the plant.

14. Inspection and testing

- a. Inspection and testing of plant/equipment must be carried out by a competent person in accordance with the manufacturer's recommendations and considerations of any relevant Australian Standard.

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- b. Each area with plant/equipment that must be maintained, inspected and where necessary, tested, must develop and maintain a plan, which includes a schedule for inspection, testing and monitoring requirements, as specified by legislation, Codes of Practice, Australian Standards and/or operating manuals.
 - c. Control measures implemented, such as guards, interlocking devices, presence-sensing safeguards and warning devices, must be inspected and tested regularly to ensure they remain effective.
 - d. Work processes associated with plant and equipment must be reviewed regularly to identify any unsafe work practices and any inadequacies of control measures that have been implemented previously.
 - e. Reasonably practicable control measures must be implemented to ensure the health and safety of the person conducting the inspection.

15. Maintenance, repair and cleaning of plant

- a. Plant and equipment must be maintained, repaired and cleaned according to the manufacturer's specifications.
- b. In the absence of manufacturer's specifications, plant and equipment must be maintained, repaired and cleaned in accordance with a competent person's recommendations.
- c. Cleaning, repairs and maintenance processes must be risk assessed and documented in the operational SWP or in a separate SWP for such processes.
- d. When the maintenance work involves high or extreme risk then some form of risk assessment process should occur each time prior to the work occurring (e.g. Take 5).
- e. Plant/equipment must be brought to fail safe before maintenance, repair or cleaning begins.
- f. Where plant or equipment cannot be isolated, methods (including effective communication and consultation with affected workers and others) to prevent accidental energising or start-up of the plant or equipment must be implemented to ensure the health and safety of the person undertaking the work.
- g. Effective isolation of plant/equipment must be confirmed prior to any work on plant commencing.
- h. Personal Danger Lock(s) and a completed Personal Danger Tag(s) must be attached to the isolator switch(es), valve(s) or device(s) so as to provide effective isolation.
- i. Where more than one person is to work on the plant/equipment, each person must attach their own Personal Danger Lock and Personal Danger Tag. See [Plant information, out of service, isolation and lockout tags](#) for further information.
- j. Each person must remove their own Lock and Tag when the task has been completed or if required to leave the work site.
- k. If the task is not complete and no persons are remaining to work on the task, a completed Out-of-Service tag must be placed at the isolation points.
- l. Prior to returning plant or equipment to service all safety controls must be reinstated and effective.

16. Isolation of damaged or unsafe plant

- a. Damaged or unsafe plant and equipment must be taken out of service and it must be brought to a state that does not create a risk to the health and safety of any person.
- b. An Out-of-Service tag must be attached securely to the controls of the plant once the plant has been brought to a failsafe state. See [Plant information, out of service, isolation and lockout tags](#) for further information.
- c. An Out-of-Service tag must only be removed by a competent person who has carried out repairs or maintenance to the plant, if the plant has been returned to a condition fit for use; or inspected or tested the plant and found that the plant is in a condition fit for use.

17. Storing plant

- a. Plant and equipment that is not in use must be stored so that it does not create a risk to workers or others in the workplace.
- b. Plant and equipment in storage for extended periods must be re-commissioned by carrying out testing and inspection to ensure a level of safety no less than when it was first commissioned.
- c. Measures must be taken to prevent stored mobile plant from moving on its own accord (e.g. rolling down a slope) or to prevent unauthorised operation.

18. Decommissioning, dismantling and disposing of plant

- a. Plant/equipment must be decommissioned and/or dismantled by a competent person.
- b. Any hazards (e.g. exposure to hazardous substances, electricity, pressure, radiation sources, stored kinetic energy) in the decommissioning and dismantling of plant must be identified, risk assessed and controlled.
- c. All items must be rendered safe before disposal.
- d. Where the plant is to be sold, the seller must:
 - i. ensure the plant is safe to load, transport, unload and store.
 - ii. provide information relating to the plant design, registration, installation, operation and maintenance with the plant to the reseller or buyer.
- e. Where the plant is to be used for scrap or spare parts, the person who is receiving the plant must be advised in writing, or by marking the item of plant, that the plant is being supplied as scrap or spare parts.

See [Plant forms and checklists](#) for further information.

19. Record keeping

- a. Managers and supervisors must establish and maintain the following documentation (e.g. on Plant Register):
 - i. lists of all plant in a particular area
 - ii. all registrable plant and associated certificates of registration
 - iii. records of all tests (including of safety devices), inspections, maintenance, commissioning, decommissioning, dismantling, disposal and alterations of the plant
 - iv. documented safe work procedures and information, instruction and training provided to users of the plant.
- b. All information and documentation gathered as part of the risk management process, including identified hazards, risk assessments, risk controls, must be kept by the manager of the area where the plant is located.
- c. Records must be kept for the period that the plant is used or until the University relinquishes control of the plant (e.g. sells or disposes of the plant).

20. Responsibilities

Vice-Presidents and Executive Deans of College, Portfolio Heads	<p>Ensure that:</p> <ul style="list-style-type: none"> a. these procedures are implemented in their College/Portfolio b. there are adequate resources to manage all aspects of plant safety c. workers, students and others in the workplace are: <ul style="list-style-type: none"> i. aware of their responsibilities in relation to plant and equipment; ii. provided with adequate information, training, instruction and supervision.
Managers and supervisors	<p>Implement these procedures in their area of responsibility, including:</p> <ul style="list-style-type: none"> d. ensure that plant is managed and maintained in accordance with these procedures and legislative requirements e. ensure that where required by legislation, plant is registered with the appropriate authority f. establish and maintain a plant register including a schedule of plant inspection, maintenance and where required, testing g. ensure that users of plant are trained, competent and where required, licenced, and have available, and use, appropriate safety equipment h. inform workers and students they supervise about the safe use of plant, and ensure they understand emergency procedures associated with the plant they use, and i. ensure that contractors demonstrate compliance with legislation relevant to plant which they bring onto University sites, or plant which they use whilst at University sites.
Competent persons	<ul style="list-style-type: none"> j. Ensure that all work they undertake on plant complies with relevant mandatory requirements set down by legislation and the safety standards outlined in these procedures. k. Undertake ongoing training in plant safety, the details of which will be determined by the person's supervisor.
Workers, students and others in the workplace	<ul style="list-style-type: none"> l. ensure they have the appropriate licence or permit when required by legislation m. ensure they have the training and competency necessary to operate the plant n. comply with safe work procedures, including use of any required risk control measures o. comply with any reasonable safe instruction by the manager/supervisor, including the use of supplied PPE p. ensure start-up and shut down checks are undertaken and recorded q. report hazards, and r. not remove any guards or other safety devices.

21. Related documents

[WHS Risk Management Procedures](#)

[Electrical Safety Procedures](#)

Code of Practice – [How to manage work health and safety risks](#)

Code of Practice – [Managing the risks of plant in the workplace](#)

Australian Standards

Users must refer to [SAI Global](#) for the latest version

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*** Unless otherwise indicated, this procedure will still apply beyond the review date.**

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Appendix A – Plant requiring registration

a. Plant items requiring registration with SafeWorkSA (or equivalent interstate regulator):

- Boilers categorised as hazard level A, B or C according to criteria in Section 2.1 of AS 4343 - *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 - *Pressure equipment - hazard levels*, except for gas cylinders; 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 2.1₂ of AS 3533.1:2009 - *Amusement Rides and Devices*, except for certain Class 1 structures (see below).
- Concrete placement units with delivery booms.
- Mobile cranes with a rated capacity of greater than 10 tonnes.

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

- a crane or hoist that is manually powered
- certain Class 1 structures:
 - 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.

b. Plant/equipment items requiring registration with the Environmental Protection Agency (for South Australia), or equivalent authority interstate:

- Radiation apparatus

² Note: continuously blown inflatable amusement devices with a platform height of 3 metres or more must be registered