Plant and Equipment Procedure

Section 1 - Preamble

(1) Charles Darwin University ('the University', 'CDU') is committed to fostering a safe workplace and learning environment through the management and maintenance of plant and equipment. This procedure outlines the appropriate measures and administration of property, plant and equipment that is managed and owned by the University.

Section 2 - Purpose

(2) Plant and equipment management includes 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 University locations.

(3) 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.

Section 3 - Scope

(4) This procedure applies to all Charles Darwin University owned and managed, plant and equipment assets.

Section 4 - Procedure

Managing the risk of plant

Purchasing and hiring plant

(5) All purchasing of plant must be in accordance with the University 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.

(6) The Work Health and Safety (National Uniform Legislation) Act 2011 NT 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.

(7) 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 University worker it is their responsibility to ensure the safe use of the plant.

Installation and commissioning of plant

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

a. verification that the plant does not contain health and safety risks;
b. inspections to ensure that the risks are monitored; and
c. inclusion on the Plant Register (if applicable).

(9) The competent person is to be provided with all information necessary to minimise risks to health and safety. If plant is imported from overseas a licensed and qualified electrician needs to inspect the plant to ensure that is conforms to AS/NZS 3000:2018 Electrical installations (Australian/New Zealand Wiring Rules). An Imported Electrical Equipment Inspection should be completed to demonstrate that the item of plant conforms to this Australian Standard.

Instruction, training and supervision

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

Using plant

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

a. prevent unauthorised alteration to or interference with the plant;
b. use the plant only for the purpose it has been designed for; and
c. ensure all safety features are used (guarding, E Stops, barriers) in accordance with instructions and information provided.

(12) Certain types of plant require the operator to hold a high-risk work licence in order to operate. Schedule 3 of the Work Health and Safety (National Uniform Legislation) Regulations 2011 outlines the classes of high risk work licences.

Altering plant

(13) No plant or equipment are to be altered without consultation and approval from the Original Equipment Manufacturer (OEM). Risk management processes must be adopted when performing any work that involves altering the design of plant.

(14) Any person making alterations to plant will assume the same obligations of a designer or manufacturer. Only a competent and certified person should carry out alterations in accordance with the relevant technical standards.

Inspecting plant

(15) 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 Original Equipment Manufacturer's recommendations, or if those are not available, in accordance with recommendations made by a competent, certified person. In most cases required competencies will be outlined in legislation, codes of practice or Australian Standards.

(16) Inspection and Testing Matrix (Appendix 2) details the inspection requirements for common items of plant, equipment and facilities used in the University operations. Due to the 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.

(17) Planning activities should occur to ensure inspection and maintenance requirements are implemented. Planning should consist of:

a. identifying the range of operational activities undertaken;
b. 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
c. developing a schedule for inspection, testing and monitoring activities.

(18) Specialised equipment used for inspecting plant should meet requirements of the relevant Australian standard, code of practice or 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.

(19) Records of inspections must be maintained in accordance with the Records and Information Management Policy and Procedure 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.

(20) Qualifications, licences or other accreditation of personnel conducting inspection and testing must be kept by the person responsible for overseeing the inspection and testing. All plant 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.

Maintenance, repair and cleaning of plant

(21) Unsafe plant and equipment can be identified via a number of methods. Common techniques include:

a. equipment inspections;
b. pre-operational checks; and
c. hazard and incident reporting.

(22) 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.

(23) If a repair to plant/equipment is required to be completed by Property and Facilities this should be reported through the Help Desk system or by contacting the Property and Facilities service representative to discuss. If the plant/equipment is deemed to be unsafe, the hazard is to be reported to Property and Facilities through the Help Desk system or Work Health and Safety using the Hazard Report Form in accordance with the Hazard and Risk Management Procedure.

(24) Specifications for the maintenance and repair of plant are generally established by the manufacturer (OEM). 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 the Inspection and Testing Matrix (Appendix 2).

(25) Where plant or equipment requires cleaning, servicing, repairs or alterations, controls should be implemented to ensure the safety of persons working on the equipment and others such as members of the public.

(26) Plant should be isolated from power before maintenance or cleaning commences. 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.

(27) 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.

Storing plant

(28) 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.

Decommissioning, dismantling and disposing of plant

(29) 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.

(30) The Plant Register must be updated to reflect the decommissioned plant or equipment items.

High risk activities

(31) There are a range of activities and tasks performed at the University which involve a high degree of risk. Some of these are considered high risk, for example forklift operation. To ensure these high-risk activities are performed by licensed operators a register will be maintained of qualifications for all operators.

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

a. scaffolding;
b. dogging and rigging;
c. 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);
d. forklift operation; and
e. pressure equipment operation (boilers, turbine, reciprocating steam engine operation).

(33) A full list of high risk work licences and classes of high risk work can be found in Schedule 3 of the Work Health and Safety (National Uniform Legislation) Regulations 2011.

Return to service

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

(35) Should the item not meet the necessary requirements to enable safe return to service the item shall remain 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 the Inspection and Testing Matrix (Appendix 2).

Specific control measures

Guarding on machinery or plant equipment

(36) 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 prevent ejected parts or off-cuts from striking people. The Work Health and Safety (National Uniform Legislation) Regulations 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.

(37) 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.

(38) The makeup of guarding must:

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

Operator controls

(39) 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:

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

Emergency stops (E-Stops)

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

a. The stop control must be prominently displayed and immediately accessible to each operator of the plant;
b. The stop control must be coloured red;
c. The functionality of the stop control must not be able to be adversely affected by electrical or electronic circuit malfunction; and
d. The control stop must be easily highly visible, accessible and unimpeded.

Warning devices

(41) 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. Warning devices include:

a. automatic audible alarms;
b. motion sensors;
c. lights;
d. flashing lights;
e. percussion alarms;
f. radio sensing devices; or
g. air horns.

Isolation of energy sources

(42) 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 about the reason and likely duration of the isolation. The damage to the equipment should be recorded in the unit's local maintenance register identifying the issue, associated hazards and recommended controls.

(43) To allow easy identification of unsafe plant:

a. The damaged plant/equipment must be stored in a location where it is not accessible to workers;
b. A competent person must verify the damaged component of the plant/equipment, isolate it, and ensure that energy is dissipated; and
c. A Danger Tag or Out of Service Tag must be fixed to the damaged plant/equipment informing other operators what the problem is.

(44) The isolation control must be tested to ensure health and safety. 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.

Safety tags

(45) Two types of safety tags used on University Campus are Danger Tags and Out of Service Tags:

a. 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.
b. Out of Service Danger Tags: Out of Service Danger Tags are applied to equipment that is out of operation for repairs or alteration and to plant that is still being installed or commissioned. Do not operate equipment whilst this tag is in use.

(46) Only the person who placed the Danger or Out of Service Danger Tag on the equipment or plant is authorised by Work Health and Safety Legislation to remove a Tag once fitted. If the person who fitted the Tag cannot be contacted then the Supervisor may remove the Tag once the equipment has been repaired and certified as safe to re-energise and operate. Every effort must be made to try and contact the person who placed the Tag in the first instance.

(47) Areas that do not have a safety tag to identify unsafe equipment should place an Out of Service Danger Tag 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.

Design and altered design registration

(48) Plant design must be registered with NT Worksafe plant registration. A competent design verifier must provide a statement verifying that the design has been produced in accordance with published technical standards or engineering principles specified by the designer.

(49) Altered plant design must be registered if:

a. the alterations could affect health and safety; or
b. the alterations required any new control measures.

(50) A full list of plant requiring registration of design has been outlined in Items of Plant Requiring Registration (Appendix 1).

Item registration

(51) All plant items requiring registration have been outlined in Items of Plant Requiring Registration (Appendix 1). Any person managing plant items listed in Appendix 1 must apply to NT Worksafe plant registration to register the item of plant.

(52) A competent person must inspect the item and provide a statement verifying that the plant is safe to operate.

(53) If registration of the design of the plant was also required then the design registration number must be included with the application.

Records

(54) Records must be kept relating to:

a. Design or item registration;
b. Tests;
c. Inspections;
d. Maintenance;
e. Commissioning;
f. Decommissioning;
g. Alterations;
h. Dismantling;
i. The presence sensing safeguarding system;
j. Safety integrity tests; and
k. Any other relevant information on plant.

(55) These records must be kept for the life of the plant or until the University has not used or controlled the plant for 5 years.

Monitoring

Control measures

(56) The effectiveness of control measures implemented to minimise the risk of identified WHS hazards are to be

monitored as per the Hazard Identification, Risk Assessment and Control Procedure. This includes:

a. post implementation follow-up of corrective actions;
b. maintenance records;
c. scheduled workplace inspections and testing by local units;
d. review of incident and hazard reports; and
e. WHS verification audits and inspections.

Roles and responsibilities

Workers

(57) Workers have a responsibility to:

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

Supervisors

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

a. Organising the inspection, testing and monitoring of plant, equipment and processes in their operational areas;
b. Ensuring workers, contractors, students and visitors are aware of their responsibilities and are provided with adequate information, instruction and training;
c. Establishing and maintaining a Plant Register and test schedule of plant, equipment, processes and work locations where testing and monitoring is required; and
d. 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.

Pro-Vice Chancellors, Directors, Deputy CEOs or Managers

(59) Pro-Vice Chancellors, Directors, Deputy CEOs or Managers are responsible for:

a. ensuring these procedures and guidelines are implemented within their area of responsibility.
b. safeguarding property, plant and equipment directly under their control and for ensuring that the University's procedures in respect of those assets are carried out promptly and effectively.

Personnel conducting inspection, testing and monitoring

(60) Personnel conducting inspection and testing procedures must:

a. be competent to complete inspection and testing requirements. Most of these requirements will be detailed in legislation, codes of practice or Australian standards; and
b. conduct inspecting and testing procedures in accordance with any legislative, code of practice or Australian Standard requirements.

Work Health and Safety

(61) Work Health and Safety is responsible for:

a. the preparation and maintenance of these procedures;
b. assisting areas with implementation of these guidelines; and
c. verifying the implementation of these guidelines using audit and inspection processes.

Section 5 - Relevant Definitions

(62) Competent person means a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task. A competent person has a more specific meaning in the following circumstances:

a. For design verification, the person must have the skills, qualifications, competence and experience to design the plant or verify the design.
b. For inspecting plant for registration purposes the person must have:
    i. educational or vocational qualifications in an engineering discipline relevant to the plant being inspected, or
    ii. knowledge of the technical standards relevant to the plant being inspected.
c. For inspecting mobile cranes, tower cranes, amusement devices and passenger ropeways the person must:
    i. have the skills, qualifications, competence and experience to inspect the plant, and be registered under a law that provides for the registration of professional engineers in jurisdictions where such a law exists, or
    ii. be determined by the regulator to be a competent person.

Section 6 - Non-Compliance

(63) Non-compliance with Governance Documents is considered a breach of the Code of Conduct – Staff or the Code of Conduct – Students, as applicable, and is treated seriously by the University. Reports of concerns about non-compliance will be managed in accordance with the applicable disciplinary procedures outlined in the Charles Darwin University and Union Enterprise Agreement 2025 and the Code of Conduct – Students.

(64) Complaints may be raised in accordance with the Code of Conduct – Staff and Code of Conduct - Students.

(65) All staff members have an individual responsibility to raise any suspicion, allegation or report of fraud or corruption in accordance with the Fraud and Corruption Control Policy and Whistleblower Reporting (Improper Conduct) Procedure.

Status and Details

Status	Current
Effective Date	13th July 2023
Review Date	13th July 2026
Approval Authority	Vice-Chancellor
Approval Date	12th July 2023
Expiry Date	Not Applicable
Responsible Executive	Peta Preo Director People and Culture
Implementation Officer	Peta Preo Director People and Culture
Enquiries Contact	Anthony Clifford Senior Manager Work Health and Safety anthony.clifford@cdu.edu.au Work Health and Safety