



# 3.7 Plant/Equipment Safety Management

## IMPLEMENTATION

### Aim

To prescribe the responsibilities and actions required for plant and equipment either University owned, controlled or located on University premises and/or during University-related activities to ensure the University meets the requirements of the Health, Safety and Wellbeing (HSW) Policy principles and the relevant sections of the [Work Health and Safety \(WHS\) Act 2012 \(SA\)](#) and [WHS Regulations 2012 \(SA\)](#).

### 3.7.1 Objectives

- 3.7.1.1 To ensure that the risks of activities involving plant/equipment are identified, assessed and the appropriate control measures are in place to prevent injury and minimise exposure to those risks.
- 3.7.1.2 To ensure that all plant/equipment related incidents/injuries have:
  - been reported and investigated;
  - had control measures reviewed before the activity is conducted again; and
  - had corrective action(s) implemented where required to prevent a recurrence.

### 3.7.2 Scope

#### 3.7.2.1 Inclusions

This process applies to:

- all workers who undertake University of Adelaide related activities, use University of Adelaide facilities and/or are employed or engaged by the University or affiliated with the University in any capacity;
- plant/equipment owned, leased, constructed and hired by the University; and
- explosive power tools that are designed to be supported by hand (e.g. nail gun).

#### 3.7.2.2 Exclusions

This chapter does not apply to:

- manually-powered hand-held plant/equipment (i.e. plant/equipment that relies exclusively on manual power for its operation [e.g. a hammer] and is designed to primarily be supported by hand (except for explosive powered power tools e.g. nail gun) however the requirements to identify, assess and control hazards arising from work still apply. Refer to the HSW Handbook Chapter [Hazard Management](#).
- plant/equipment owned by contractors which is not used by University staff or students; and
- heritage plant/equipment (refer to definitions) which must be managed in accordance with [SafeWork Australia's Guide for managing risks involving heritage plant](#).

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3.7.3 Process: Requirements for the design and manufacture of plant/equipment

Person Responsible		Actions
3.7.3.1	Designer and Manufacturer	<ul style="list-style-type: none"> <li>□ Ensure that the requirements in <a href="#">Appendix K</a> are implemented.</li> </ul>

3.7.4 Process: Purchasing (including importing and hiring), receiving, erecting and installing plant

Person Responsible		Actions
3.7.4.1	All persons identified in the scope of this process	<ul style="list-style-type: none"> <li>□ Refer to the <a href="#">Plant/equipment Acquisition, Installation and Commissioning Checklist Information Sheet</a> to assist with acquisition. This information sheet will guide you through the acquisition, installation and commissioning process. (For assistance with vehicle acquisitions please refer to <a href="#">Vehicle Safety Management Information Sheet</a>)</li> <li>□ Ensure that any infrastructure and/or licensing requirements are considered prior to purchase, installation and commissioning of the plant/equipment (including electrical connection and supply).</li> <li>□ Ensure the Infrastructure Branch is consulted for any purchases associated with the built environment or that requires modification of infrastructure to accommodate the plant/equipment.</li> <li>□ Ensure that you have received from importers and suppliers of plant/equipment the information detailed in <a href="#">Appendix A</a> (as applicable).</li> <li>□ Ensure that the impact of the erection or installation process on the work environment during this process has been considered.</li> <li>□ If contractors are engaged to erect and install plant/equipment follow the process for <a href="#">Contractor Management</a>.</li> </ul>

3.7.5 Process: Hazard management prior to use of the plant/equipment

Person Responsible		Actions
3.7.5.1	<p><b>Head of School/Branch</b></p> <p>(Any or all of these tasks can be delegated to School/Branch staff (e.g. Manager/Supervisor, or Health and Safety Officer), however the Head of School/Branch must monitor the tasks on a regular basis to ensure they take place.)</p>	<ul style="list-style-type: none"> <li>□ Ensure that all areas which contain hazardous plant (see 3.7.6.2) have a supervisor/manager responsible for the activities under 3.7.5.2, 3.7.6.2 and 3.7.10.2 (this is normally the overarching academic or lab/workshop manager – NOTE: it is <b>not</b> appropriate that this person is a student).</li> <li>□ Ensure that workers under your control have current risk assessments or are conducting risk assessments (where required see <a href="#">Appendix B</a>) for plant/equipment items and related tasks as appropriate prior to commencing operation.</li> </ul>

3.7.5 Process: Hazard management prior to use of the plant/equipment (Continued)

Person Responsible		Actions
3.7.5.2	Supervisors/ Managers of areas with hazardous Plant	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that current risk assessments are being conducted (where required see <a href="#">Appendix B</a>) for plant/equipment items and tasks prior to commencing operation.</li> <li><input type="checkbox"/> Ensure that any required controls including emergency equipment are available for plant (including mobile plant) during use where applicable.</li> </ul>
3.7.5.3	All persons identified in the scope of this process	<ul style="list-style-type: none"> <li><input type="checkbox"/> Determine if a Plant/Equipment risk assessment is required using the Plant/Equipment Risk Assessment Decision Tree. (<a href="#">Appendix B</a>).</li> </ul> <p><b>If a risk assessment is required:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify the hazards and complete a risk assessment in accordance with the HSW Handbook Chapter <a href="#">Hazard Management</a>.</li> <li><input type="checkbox"/> Ensure that where control measures are required, they are in accordance with the "Hierarchy of Control", using the highest level of control where possible. Examples are detailed in <a href="#">Appendix C</a>.</li> <li><input type="checkbox"/> Ensure that controls are implemented as dictated by the risk assessment outcomes prior to using the plant or equipment.</li> </ul> <p><b>If a risk assessment exists:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that the risk assessment is read and the controls are implemented.</li> </ul>

3.7.6 Process: Induction and training prior to use of the plant/equipment

Person Responsible		Actions
3.7.6.1	Head of School/Branch (refer to (3.7.5.1) for delegations)	<p><b>Information, Instruction and Training</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that all supervisors/managers of areas with hazardous plant are appropriately inducting, training and supervising their workers (as per 3.7.6.2 below).</li> </ul>
3.7.6.2	Supervisors/ Managers of areas with hazardous Plant	<ul style="list-style-type: none"> <li><input type="checkbox"/> Identify the plant/equipment within your area which requires training before use.</li> <li><input type="checkbox"/> Ensure that all workers under your supervision are:                         <ul style="list-style-type: none"> <li><input type="checkbox"/> inducted into the specific work area (e.g. laboratory/workshop).</li> <li><input type="checkbox"/> instructed as to which equipment requires training before use (this may vary depending on previous experience of worker).</li> <li><input type="checkbox"/> specifically trained on the safe operating procedure (SOP) where identified on the risk assessment as a control measure.</li> <li><input type="checkbox"/> appropriately supervised whilst using plant/equipment until deemed proficient for plant/equipment which you have identified that requires training.</li> </ul> </li> </ul> <p>Ensure that SOPs and/or the manufacturer's operating instructions form the basis of training and ongoing use.</p> <p><i>Note that not all plant/equipment requires a SOP. An SOP is only required if the risk assessment states it as a control measure.</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that all specific training is recorded and is readily available for viewing by the University or regulatory bodies.</li> </ul>

3.7.7 Process: Prior to using electrical equipment

Person Responsible	Actions
<p>3.7.7.1 Head of School/Branch (refer to 3.7.5.1 for delegations).</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that (where appropriate) workers understand and implement the electrical testing requirements outlined in <a href="#">Appendix H</a>.</li> <li><input type="checkbox"/> Where appropriate (see <a href="#">Appendix H</a>) ensure that an item which requires testing and has not been, is not used and is tagged out of service until it is tested and deemed safe to be reinstated.</li> </ul>

3.7.8 Process: Prior to use of the plant/equipment - Electrical work on energised electrical equipment

Person Responsible	Actions
<p>3.7.8.1 Head of School/Branch responsible for the activity (refer to 3.7.5.1 for delegations)</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that electrical work is not carried out on energised electrical equipment unless:                             <ul style="list-style-type: none"> <li>• it is necessary in the interests of health and safety that the electrical work is carried out while the equipment is energised (e.g. it may be necessary for life-saving equipment to remain energised and operating while electrical work is carried out on the equipment), or</li> <li>• it is necessary that the electrical equipment to be worked on is energised in order for the work to be carried out properly, or</li> <li>• it is necessary for the purposes of testing required by <a href="#">WHS Regulation 155</a>, or</li> <li>• there is no reasonable alternative means of carrying out the work.</li> </ul> <p><i>Note electrical work must not be carried out on energised electrical equipment solely for the purpose of convenience.</i></p> </li> <li><input type="checkbox"/> Ensure that before work commences on energised electrical equipment that the worker:                             <ul style="list-style-type: none"> <li><input type="checkbox"/> is competent;</li> <li><input type="checkbox"/> has the correct testing equipment and personal protective equipment;</li> <li><input type="checkbox"/> has completed a new or reviewed an existing risk assessment and safe operating procedure (SOP) which contains the electrical work, hazards and implementation, monitoring and controls.</li> </ul> </li> <li><input type="checkbox"/> Where required, ensure a safety observer, competent in implementing the controls including any required emergency, rescue and resuscitation, is appointed.</li> </ul> <p><i>Note a safety observer is not required if the work consists of testing only and the risk assessment shows there is no serious risk associated with the proposed work.</i></p>

3.7.8 Process: Prior to use of the plant/equipment - Electrical work on energised electrical equipment (Cont)

Person Responsible		Actions
3.7.8.2	All persons identified in the scope of this process	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that before you commence work that you have a suitable reason for carrying out work on energised electrical equipment (see 3.7.8.1 above)</li> </ul> <p><i>Note electrical work must not be carried out on energised electrical equipment solely for the purpose of convenience.</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure a risk assessment and safe operating procedure (SOP) has been conducted prior to undertaking the electrical work in accordance with the HSW Handbook Chapter <a href="#">Hazard Management</a>.</li> <li><input type="checkbox"/> Ensure that work is clearly communicated and signposted/labelled (for tag out requirements please refer to <a href="#">Appendix D</a>.)</li> <li><input type="checkbox"/> Ensure a safety observer (competent in implementing controls in an emergency, rescue and resuscitate) is appointed where required (see 3.7.8.1).</li> </ul>
3.7.8.3	Safety Observer (also see 3.7.8.1)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that you are competent in                             <ul style="list-style-type: none"> <li>• implementing controls in an emergency,</li> <li>• rescue and resuscitation.</li> </ul> </li> <li><input type="checkbox"/> Ensure that you have been assessed in the last 12 months for rescue and resuscitation.</li> </ul>
3.7.8.4	Contractor	<ul style="list-style-type: none"> <li><input type="checkbox"/> Refer to HSW Handbook Chapter <a href="#">Contractor Management</a>.</li> </ul>

3.7.9 Process: Electrical Installations (e.g. power points, cabling, distribution boards, etc)

Person Responsible		Actions
3.7.9.1	Head of School/Branch (refer to 3.7.5.1 for delegations)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that any changes to the infrastructure (e.g. new power-points, hard-wiring of electrical equipment) are arranged by the Infrastructure Branch.</li> <li><input type="checkbox"/> Ensure that re-setting of all fixed circuit breakers and residual current devices is arranged through the Infrastructure Branch or in commercial properties through the property manager.</li> </ul>
3.7.9.2	Director Infrastructure (refer to 3.7.5.1 for delegations)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure systems are in place for the safe management and operation of the electrical supply, reticulation and distribution network.</li> </ul>

3.7.10 Process: Use of Plant/Equipment

Person Responsible	Actions
<p>3.7.10.1 <b>Head of School/Branch</b> (refer to 3.7.5.1 for delegations)</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that plant/equipment is only used for the purpose it is designed or ensure that a risk assessment has been completed for any plant/equipment used in a purpose other than what it was designed for (see <a href="#">Appendix B</a>).</li> <li><input type="checkbox"/> Ensure that plant/equipment is operated, maintained, inspected and tested in accordance with the manufacturer's instructions operations manual (or if none then as risk assessed), and if applicable the SOP.</li> <li><input type="checkbox"/> Ensure that any plant/equipment identified in <a href="#">Appendix E</a> has the appropriate registration before being used.</li> <li><input type="checkbox"/> Ensure that any licences required for the use of plant/equipment (see <a href="#">Appendix E</a>) are sighted and the relevant information recorded before the operator commences.</li> <li><input type="checkbox"/> Ensure that electrical equipment identified in <a href="#">Appendix F</a> is protected with a residual current device (RCD).</li> <li><input type="checkbox"/> Ensure that faulty plant/equipment, or plant/equipment that requires isolation for cleaning, maintenance or repairs, is tagged or locked out as per <a href="#">Appendix D</a>.</li> <li><input type="checkbox"/> Ensure that double adaptors are not used in the workplace.</li> <li><input type="checkbox"/> Ensure that where there are changes to the work environment or work procedures, potential hazards are identified and risks assessed where applicable.</li> <li><input type="checkbox"/> Ensure that fatigue of heavy vehicle drivers is managed according to the <a href="#">Heavy Vehicle National Law (SA) Act 2013</a> see <a href="#">Appendix G</a>.</li> <li><input type="checkbox"/> Ensure that tractors are not used unless have a securely fitted roll-over protective structure (ROPS) and if they do not have a ROPS that it is tagged out and installed before next used.</li> <li><input type="checkbox"/> Ensure that Agricultural plant/equipment used in harvest is used in accordance with <a href="#">Grain harvesting Code of Practice</a>.</li> <li><input type="checkbox"/> Ensure that plant/equipment (especially Agricultural equipment and vehicles) that are used in an environment which has the potential to cause bush/grass fires are managed in accordance with the CFS Code of Practice <a href="#">Grain harvesting operation weather restrictions Code of Practice</a> (please also refer to the <a href="#">Hot Work (Heat or Spark Producing Activities) Information Sheet</a>).</li> <li><input type="checkbox"/> Ensure that the requirements for:             <ul style="list-style-type: none"> <li><input type="checkbox"/> powered mobile plant/equipment are managed in accordance with <a href="#">WHS Regulations 2012 (SA) [section 214 &amp; 215]</a>;</li> <li><input type="checkbox"/> tractors and other agricultural machinery are managed in accordance with:                 <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">WHS Regulations 2012 (SA) [section 214-216]</a>;</li> <li><input type="checkbox"/> <a href="#">Grain harvesting Code of Practice</a>;</li> <li><input type="checkbox"/> <a href="#">Australian Standard (AS)1121 Agricultural tractor power take-offs</a>;</li> <li><input type="checkbox"/> industrial robots and other remotely or automatically energised equipment are managed in accordance with <a href="#">WHS Regulations 2012 (SA) [section 222]</a></li> </ul> </li> </ul> </li> </ul>

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3.7.10 Process: Use of Plant/Equipment (Continued)

Person Responsible	Actions
<p>3.7.10.1 <b>Head of School/Branch</b> (refer to 3.7.5.1 for delegations)</p> <p>Continued</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> lasers are managed in accordance with <a href="#">WHS Regulations 2012 (SA) [section 223]</a> and <a href="#">AS/NZS IEC 60825.14:2011 Safety of Laser Products Part 14: A User's guide</a>;</li> <li><input type="checkbox"/> pressure equipment is managed in accordance with <a href="#">WHS Regulations 2012 (SA) [section 224]</a>, <a href="#">AS/NSZ1200 (2000) Pressure equipment</a>, <a href="#">AS2971 (2007) Serially produced pressure vessels</a> and <a href="#">AS3788(2006) Pressure equipment – in-service inspection</a>;</li> <li><input type="checkbox"/> scaffolds are managed in accordance with <a href="#">WHS Regulations 2012 (SA) [section 225]</a>;</li> <li><input type="checkbox"/> lifts are managed in accordance with <a href="#">WHS Regulations 2012 (SA) [section 236]</a>;</li> <li><input type="checkbox"/> mobile cranes and tower cranes are managed in accordance with <a href="#">WHS Regulations 2012 (SA) [section 235]</a>; and</li> <li><input type="checkbox"/> plant/equipment with emergency stop and warning devices (including guarding and operational controls) are used in accordance with the manufacturers information and instructions and is managed in accordance with <a href="#">WHS Regulations 2012 (SA) [sections 208, 210-212]</a>.</li> </ul>
<p>3.7.10.2 <b>Supervisors/ Manager of areas with hazardous plant</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that where specific local training related to plant/equipment is required to ensure the safety of workers or others in the workplace that the training is identified on the School/Branch Training Needs Analysis, or equivalent system.</li> <li><input type="checkbox"/> Provide specific local training and supervision related to plant/equipment where required and ensure training records (including copies of licences) are forwarded to the person who maintains School/Branch training records (or kept locally within the area).</li> <li><input type="checkbox"/> Ensure the appropriate direct supervision is provided until the person is able to operate the plant/equipment or undertake the task without causing a risk to the health or safety of themselves or others (e.g. proficient or competent).</li> </ul>
<p>3.7.10.3 <b>All persons identified in the scope of this process</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure you are suitably licenced to use the plant/equipment (see <a href="#">Appendix E</a>).</li> <li><input type="checkbox"/> Ensure that you report to your supervisor/manager if any of your licences (required for work) expire and/or are not renewed; are suspended or restricted or have been disqualified.</li> <li><input type="checkbox"/> Operate plant/equipment in accordance with the manufacturer's instructions, operations manual, training and Safe Operating Procedure (where documented).</li> <li><input type="checkbox"/> Assist in the completion of Risk Assessments and Safe Operating Procedures where required.</li> <li><input type="checkbox"/> Do not use plant/equipment that is tagged/locked out.</li> <li><input type="checkbox"/> Do not remove tags/locks without authorisation, or damage them in any way.</li> </ul> <p style="text-align: right;">Continued</p>



3.7.10 Process: Use of Plant/Equipment (Continued)

Person Responsible		Actions
3.7.10.3	All persons identified in the scope of this process  (Continued)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Report damaged or faulty plant/equipment to the relevant supervisor/manager immediately, and “tag out” if necessary (see <a href="#">Appendix D</a>).</li> <li><input type="checkbox"/> Ensure that you are <b>not</b> in a state as to endanger yourself, another person, or cause damage to the plant/equipment or property from the consumption of alcohol or a drug. (See also the <a href="#">Drugs and Alcohol Information Sheet</a>).</li> </ul>
3.7.10.4	Contractors	<ul style="list-style-type: none"> <li><input type="checkbox"/> Follow the process for HSW Handbook Chapter <a href="#">Contractor Management</a> when working on University plant/equipment and in accordance with the contract specifications where applicable.</li> <li><input type="checkbox"/> Notify the relevant University workers (e.g. Contract Manager/Project Manager/Project Officer if:                             <ul style="list-style-type: none"> <li><input type="checkbox"/> the work requires a service isolation (e.g. water, power, gas, essential safety provision) in consultation with the relevant Campus Services staff (North Terrace 8313 4008, Waite Campus 8313 7217, Roseworthy Campus 8313 7937, Thebarton Campus 8313 4471);</li> <li><input type="checkbox"/> an item of plant/equipment is identified as faulty and requires a tag “Out of Service”;</li> <li><input type="checkbox"/> an item of plant/equipment has been tagged out with a “Danger Tag” as part of the work process and you are leaving the site.</li> </ul> </li> </ul>

3.7.11 Process: Modification of Plant/Equipment

Person Responsible		Actions
3.7.11.1	Head of School/Branch (refer to 3.7.5.1 for delegations)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that workers modifying plant/equipment are an authorised person, or are directly supervised by an authorised person.</li> <li><input type="checkbox"/> Ensure that consultation with Infrastructure Branch, occurs if the modification could impact upon infrastructure or building services.</li> <li><input type="checkbox"/> Ensure that plant/equipment under modification is isolated where appropriate (refer to <a href="#">Appendix D</a>).</li> <li><input type="checkbox"/> Ensure that SOPs, training documents and testing programs are modified as required, prior to next use.</li> <li><input type="checkbox"/> Ensure the plant/equipment is risk assessed, inspected and tested by a competent person prior to being returned to service.</li> <li><input type="checkbox"/> Ensure that any certificates of compliance are held where relevant.</li> <li><input type="checkbox"/> Ensure all documents relating to the modification are kept on file.</li> <li><input type="checkbox"/> Ensure the plant/equipment is registered if required (see <a href="#">Appendix E</a>).</li> <li><input type="checkbox"/> If contractors are engaged to modify plant/equipment follow the HSW Handbook Chapter <a href="#">Contractor Management</a>.</li> </ul>

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3.7.12 Process: Maintenance and Repairs

Person Responsible		Actions
3.7.12.1	<b>Head of School/Branch</b> (refer to 3.7.5.1 for delegations)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that programmed/regular maintenance on plant/equipment and equipment is performed at a frequency recommended by the manufacturer or supplier, or as determined by a risk assessment.</li> <li><input type="checkbox"/> Ensure that plant/equipment under the control of the Head of School/Branch is maintained, tested and tagged where relevant.</li> <li><input type="checkbox"/> Ensure that maintenance, cleaning and repairs are only performed by a competent worker or other competent person and that the plant/equipment is stopped or if not stopped safe systems of work are documented and followed.</li> <li><input type="checkbox"/> Ensure that any safety feature or warning device (including guarding) on the plant/equipment is appropriately maintained and tested on a regular basis.</li> <li><input type="checkbox"/> Ensure that faulty plant/equipment, or plant/equipment that requires isolation for cleaning, maintenance or repairs, is tagged out or locked out as per <a href="#">Appendix D</a>.</li> <li><input type="checkbox"/> Ensure that testing of electrical equipment is carried out in accordance with <a href="#">Appendix H</a>.</li> <li><input type="checkbox"/> Ensure that testing of residual current devices (RCDs) is conducted in accordance with <a href="#">Appendix F</a> and <a href="#">Appendix H</a>. If contractors are engaged to maintain and/or repair plant/equipment follow the process in HSW Handbook Chapter <a href="#">Contractor Management</a>.</li> </ul>
3.7.12.2	<b>Director Infrastructure</b> (refer to 3.7.5.1 for delegations)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that electrical switchboards associated with the built environment are kept locked (excluding local fuse board in field stations).</li> <li><input type="checkbox"/> Ensure that access to University switchboards is restricted to qualified Infrastructure Branch staff and those approved by Infrastructure Branch.</li> </ul>
3.7.12.3	<b>Authorised persons (electrical work)</b> (See definitions)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that all electrical work undertaken complies with relevant mandatory requirements set down by legislation.</li> <li><input type="checkbox"/> Inform your Head of School/Branch of any change to your status as an authorised person.</li> </ul>

3.7.13 Process: Administration

Person Responsible		Actions
3.7.13.1	<b>Head of School/Branch</b> (refer to 3.7.5.1 for delegations)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that all documentation summarised in <a href="#">Appendix I</a> is maintained.</li> <li><input type="checkbox"/> Ensure plant/equipment requiring registration is included in the Schedule of Programmable Events (SPE) or an equivalent system. (see <a href="#">Appendix E</a>)</li> <li><input type="checkbox"/> Ensure that risk assessments are reviewed:                         <ul style="list-style-type: none"> <li><input type="checkbox"/> following an incident;</li> <li><input type="checkbox"/> when there are changes to the plant/equipment or process; or</li> <li><input type="checkbox"/> every five years (unless the risk assessment is no longer applicable) <u>unless</u> determined that a more frequent review is required due to the level of risk.</li> </ul> </li> <li><input type="checkbox"/> Ensure that all records are kept for a minimum period of 5 years from the date of last entry.</li> </ul>

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3.7.14 Process: Disposal of plant/equipment

Person Responsible	Actions
3.7.14.1 Head of School/Branch (refer to 3.7.5.1 for delegations)	<input type="checkbox"/> Ensure that plant/equipment is disposed of in accordance with <a href="#">Appendix J</a> .

3.7.15 Performance Measures

The HSW Team will use the performance measures listed below to assist in identifying areas of success and/or where corrective action is required to meet the objectives and targets of this process. The level of compliance with the chapter and effectiveness will be determined during the internal audit process.

References	Measure	Objective Evidence	Frequency	Indicator of success
See objective 3.7.1.1	% of risk assessments held for hazardous plant/equipment. (as required by <a href="#">decision tree</a> )	Risk Assessments.	As per the Internal audit plan.	Success = 100% Less than 100% = Corrective action.
See objective 3.7.1.2	% of plant/equipment related incidents which have been investigated and corrective actions implemented (where required) before the activity is conducted again.	<ul style="list-style-type: none"> <li>RMSS Incident/Injury and investigation reports.</li> </ul> Where applicable: <ul style="list-style-type: none"> <li>Evidence of review of control measures.</li> <li>Evidence that the Risk Assessment and/or Safe Operating Procedure have been reviewed where applicable.</li> </ul>	As per the Internal audit plan.	Success = 100% Less than 100% = Corrective action.

3.7.16 Useful information and resources

3.7.16.1	<p><b>University related documents and resources</b></p> <ul style="list-style-type: none"> <li>HSW Handbook Chapter <a href="#">Contractor Management</a></li> <li>HSW Handbook Chapter <a href="#">Hazard Management</a></li> <li>HSW Handbook Chapter <a href="#">Health, Safety and Wellbeing Training</a></li> <li>HSW Handbook Chapter <a href="#">Radiation Safety Management</a></li> <li><a href="#">Drugs and Alcohol Information Sheet</a></li> <li><a href="#">Electrical Safety Information Sheet</a></li> <li><a href="#">Hot Work (Heat or Spark Producing Activities) Information Sheet</a></li> <li><a href="#">Personal Protective Equipment Information Sheet</a></li> <li><a href="#">Plant/equipment Acquisition, Installation and Commissioning Checklist Information Sheet</a></li> <li><a href="#">Vehicle Safety Management Information Sheet</a></li> <li><a href="#">Chemwatch</a></li> </ul>
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3.7.16 Useful information and resources

3.7.16.2	<p><b>Related Legislation</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Work, Health and Safety Act 2012 (SA).</a></li> <li>• <a href="#">Work, Health and Safety Regulations 2012 (SA).</a></li> <li>• <a href="#">Heavy Vehicle National Law (SA) Act 2013</a></li> <li>• <a href="#">Plumbers, Gas Fitters and Electricians Act 1995 (amended 2009).</a></li> <li>• <a href="#">Heavy Vehicle (Fatigue management) National Regulation 2013.</a></li> <li>• <a href="#">AS 1893 (1977) Code of practice for the guarding and safe use of metal and paper cutting guillotine.</a></li> <li>• <a href="#">Grain harvesting Code of Practice.</a></li> <li>• <a href="#">Grain harvesting operation weather restrictions Code of Practice.</a></li> <li>• <a href="#">Model Code of Practice – Managing electrical risks in the workplace.</a></li> <li>• <a href="#">Model Code of Practice – Managing the risks of Plant in the workplace.</a></li> <li>• <a href="#">AS 1121(2007) Agricultural tractor power take-offs.</a></li> <li>• <a href="#">AS/NZS 1200 (2000) Pressure equipment.</a></li> <li>• <a href="#">AS 1319 (1994) Safety signs for the occupational environment</a></li> <li>• <a href="#">AS 1418.1 -18 (series) Cranes (including hoists and winches).</a></li> <li>• <a href="#">AS 1473-1991: Guarding and safe use of woodworking machinery.</a></li> <li>• <a href="#">AS 1473.1-8 (series) Wood processing machinery.</a></li> <li>• <a href="#">AS/NZS 1576 (2010) Scaffolding – general requirements.</a></li> <li>• <a href="#">AS 1577 (2013): Scaffold decking components.</a></li> <li>• <a href="#">AS 1636.1 to 3 (1996) Agricultural wheeled tractors – roll-over protective structures.</a></li> <li>• <a href="#">AS 1657 (2013) Fixed platforms, walkways, stairways and ladders – design, construction and installation.</a></li> <li>• <a href="#">AS 1735 (series) Lifts, escalators and moving walks.</a></li> <li>• <a href="#">AS 1755 (2000) Conveyors – safety requirements.</a></li> <li>• <a href="#">AS 1788 (1997) Abrasive wheels Part 1 Design, construction and safeguarding, Part 2 Selection, care and use.</a></li> <li>• <a href="#">AS 1873 (series) Power-actuated (PA) hand-held fastening tools.</a></li> <li>• <a href="#">AS/NZS 1891 (series) Industrial fall-arrest systems and devices.</a></li> <li>• <a href="#">AS/NZS 1892 (series) Portable ladders.</a></li> <li>• <a href="#">AS 2030 (series) Gas cylinders general requirements.</a></li> <li>• <a href="#">AS 2153 (series) Tractors and machinery for agriculture and forestry- technical means for ensuring safety.</a></li> <li>• <a href="#">AS 2294.1 (1997) Earth-moving machinery – Protective structures.</a></li> <li>• <a href="#">AS 2359 (series) Powered industrial trucks.</a></li> <li>• <a href="#">AS 2550 (series) Cranes hoists and winches – safe use. AS 2593 (2004) Boilers – Safety management and supervision systems.</a></li> <li>• <a href="#">AS 2971(2007) Serially produced pressure vessels.</a></li> <li>• <a href="#">AS/NZS 3000 (2007) Electrical installations – (known as the Australian/New Zealand Wiring Rules).</a></li> <li>• <a href="#">AS 3760 (2010) In-service safety inspection and testing of electrical equipment.</a></li> <li>• <a href="#">AS/NZS 3788 (2006) Pressure equipment – in-service inspection.</a></li> <li>• <a href="#">AS 3947 (series) Low-voltage switchgear and control gear.</a></li> <li>• <a href="#">AS 4024 (series) Safety of Machinery.</a></li> <li>• <a href="#">AS/NZS 4576 (1995) Guidelines for scaffolding.</a></li> <li>• <a href="#">AS 4991 (2004) Lifting devices.</a></li> <li>• <a href="#">AS 60745 (series) Hand-held motor operated electric tools.</a></li> <li>• <a href="#">AS/NZS IEC 60825.14 (2011) Safety of laser products – a users guide</a></li> </ul>
	Continued

3.7.16 Useful information and resources (Continued)

3.7.16.2	<p><b>Related Legislation (Continued)</b></p> <ul style="list-style-type: none"> <li>• <a href="#">AS 61508 (series) Functional safety of safety related systems.</a></li> <li>• <a href="#">AS 62061 (2006) Safety of machinery: functional safety of safety-related electrical, electronic and programmable electronic control systems.</a></li> <li>• <a href="#">ISO 12100 Safety of machinery – general principles for design.</a></li> <li>• <a href="#">ISO/EN 13458 Cryogenic vessels – static vacuum insulated vessels.</a></li> </ul> <p><b>Other information</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Guide for Managing risks involving heritage plant (2013).</a></li> <li>• <a href="#">National Hazard Exposure Work Surveillance – Vibration exposure and provision of vibration control measures in Australian workplaces (2009).</a></li> <li>• <a href="#">SA Transport Department Heavy Vehicles</a></li> <li>• <a href="#">SA Transport Department National Work Diaries</a></li> </ul>
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3.7.17 Definitions

An **authorised person** means in the context of electrical work:

- a) An 'A' class licensed electrician authorised to work on the electrical installation and electrical equipment;
- b) An air conditioning/refrigeration mechanic authorised to work on air conditioning/refrigeration units capable of being connected to the electrical installation;
- c) An electronics technician authorised to work on electronic appliances capable of being connected to the electrical installation;
- d) Any other person who, by way of qualification, knowledge or experience, is authorised to work on experimental apparatus or electrical equipment capable of being connected to an electrical installation.

**Note:**

- (i) If the authorised person is a student and fits into one of the above categories then they must also have written authorisation from the Head of School.
- (ii) It should be noted that authorised persons as defined in (a) and (b) above are legally bound by requirements of the [Plumbers, Gas Fitters and Electricians Act 1995](#).

A **boiler** – refer to [WHS Regulations 2012 \(SA\)](#).

A **competent person** means-

- a) for electrical work on energised electric equipment or energised electrical installations (other than testing referred to in [WHS Regulations \(SA\) section 150 and 165](#)) - a person registered to undertake the work under the [Plumbers, Gas Fitters and Electricians Act 1995](#).
- b) for design and verification of plant/equipment (under [WHS Regulations \(SA\) section 252](#)) – a person who has the skills, qualifications, competence and experience to design the plant/equipment or verify the design.
- c) for inspection of plant/equipment for registration a person who has the skills, qualifications, competence and experience in an engineering discipline and knowledge of technical standards of the plant/equipment being inspected.
- d) for inspection of cranes and amusement devices a person who has the skills, qualifications, competence and experience to inspect the plant/equipment; be registered as a professional engineer and deemed to be a competent person by SafeWork SA.
- e) for any other case - is a person who has acquired through experience the knowledge and skills to carry out the task.

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### 3.7.17 Definitions (Continued)

**Crushing and crimping** means when physical damage is likely to occur to the cord e.g. when the cord is stuck in a door, exposed to traffic e.g. car or in a walkway; cut etc.

**Decommission** means to remove from service.

**Design** means the design of part or all of the plant/equipment and redesign or modification of a design.

**Designer** means a person who designs plant/equipment, substances or structures that are to be used, or could reasonably be expected to be used, as, or at, a workplace.

**Danger tag** means a tag that indicates plant/equipment isolated from its power source and which cannot be operated. This is to allow maintenance or repair work on the plant/equipment to be performed safely (refer to [Appendix D](#) for the University-approved tag).

**Electrical equipment** means any apparatus, cable, conductor, fitting, insulator, material, meter or wire that –

- a) is used for controlling, generating, supplying, transforming or transmitting electricity at a voltage greater than extra-low voltage; or
- b) operated by electricity at voltage greater than extra-low voltage; or
- c) is a part of an electrical installation located in an area in which the atmosphere presents a risk to health and safety from fire or explosion; or
- d) is, or is part of, an active impressed current cathodic protection system within the meaning of [AS 2832.1 2004 Cathodic protection of metals – pipes and cables](#).

**Electrical installation** means a group of items of electrical equipment that –

- a) are permanently electrically connected together; and
- b) can be supplied with electricity from the works of an electricity supply authority or from a generating source.

**Electrical risk** means risk to a person of death, shock, or other injury caused directly or indirectly by electricity.

**Electrical work** means

- a) connecting electricity supply wiring to electrical equipment or disconnecting electricity supply wiring from electrical equipment; or
- b) work on a non-electrical component of electrical equipment, if the person carrying out the work is not exposed to an electrical risk.

(Note please refer to [WHS Regulations 2012 \(SA\) \[section 146\]](#) for exclusions the definition of electrical work)

**Extra low voltage** means voltage that does not exceed 50 volts alternating current (50V AC) or 120 volts ripple-free direct current (120V ripple-free DC).

**Heritage Plant/equipment** means machinery, equipment, appliances, implements or tools which form part of Australia's industrial heritage. To be considered heritage the plant/equipment must be at least 30 years old and not in productive service.

**Hoist** means an appliance intended for raising or lowering a load or people, and includes an elevated work platform, a mast climbing work platform, personnel and materials hoist, scaffolding hoist and serial hoist, but does not include a lift or building maintenance equipment.

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### 3.7.17 Definitions (Continued)

**Isolation and energy dissipation** means a procedure which consists of all of the four following actions:

- Isolating (disconnecting, separating) the machine (or defined parts of the machine) from all power supplies.
- Where necessary (for instance in large machines or in installations), locking (or otherwise securing) all the isolation units in the isolating position;
- Dissipating or restraining (containing) any stored energy which may give rise to a hazard. **Note-** energy may be stored in:
  - a) Mechanical parts continuing to move through inertia;
  - b) Mechanical parts liable to move due to gravity;
  - c) Capacitors and accumulators;
  - d) Pressurised fluids; or
  - e) Springs.
- Verifying by means of a Safe Operating Procedure that the actions taken according to items 1, 2 and 3 above have produced the desired effect.

**Kinking, coiling and wrapping** means the action that a person uses when packing up a cord for a laptop computer or a portable projector; it is folding or coiling action and does not normally result in internal damage to the cord.

**Mobile crane** means a crane capable of travelling over a supporting surface without the need for fixed runways and relying on gravity for stability.

**Operator** means a proficient or competent person who operates any plant/equipment outlined in this document.

**Out of service tag** means a tag that indicates plant/equipment that either has a fault, or is unsafe to operate and is being removed from service (refer to [Appendix D](#) for the University-approved tag).

**Plant/equipment** means:

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

A **proficient person** means one who has been trained and assessed in a task, and has been deemed able to carry out those duties without supervision.

**Powered mobile plant/equipment** means plant/equipment that is provided with some form of self-propulsion that is ordinarily under the direct control of an operator.

**Pressure equipment** means boilers, pressure vessels and pressure piping.

**Pressure vessel** means a vessel subject to internal or external pressure and includes interconnected parts and components, valves, gauges, and other fittings up to the first point of connection to connecting piping and fired heaters and gas cylinders but does not include a boiler or pressure piping.

**Residual current device (RCD)** means a mechanical switching device designed to make, carry and break currents under normal service conditions, and to cause the opening of contacts when the residual current attains a given value under specified conditions as defined in [AS/NZS 3760 \(2010\) In-service safety inspection and testing of electrical equipment](#).

**Reciprocating steam engines** - refer to [WHS Regulations 2012 \(SA\)](#).

**Residual Risk** means the risk remaining after implementation of risk controls.

**Scaffold** means a temporary structure specifically erected to support access or working platforms.

**Scaffolding work** means erecting, altering or dismantling a temporary structure that is or has been erected to support a platform and from which a person or object could fall more than 4 metres from the platform or structure.

**Tower crane** - refer to [WHS Regulations 2012 \(SA\)](#).

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**3.7.17 Definitions (Continued)**

**Tractor** means a motor vehicle whether wheeled or track mounted, designed to provide power and movement to any attached machine or implement by transmission shaft, belt or linkage system but does not include earth moving equipment machinery.

**Turbine** - refer to [WHS Regulations 2012 \(SA\)](#).

**Work box** - refer to [WHS Regulations 2012 \(SA\)](#).

**Worker** means according to the [WHS Act 2012 \(SA\)](#) a person where the person carries out work in any capacity for a person conducting a business or undertaking, including work as -

- (a) an employee; or
- (b) a contractor or subcontractor; or
- (c) an employee of a contractor or subcontractor; or
- (d) an employee of a labour hire company who has been assigned to work in the person's business or undertaking; or
- (e) an outworker; or
- (f) an apprentice or trainee; or
- (g) a student gaining work experience; or
- (h) a volunteer; or
- (i) a person of a prescribed class.

The person conducting the business or undertaking is also a worker if the person is an individual who carries out work in that business or undertaking. Note -Higher Degree Research students and Academic Visitors are likely to be workers under the [WHS Act 2012 \(SA\)](#).

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## PLANT/EQUIPMENT ACQUISITION, INSTALLATION AND COMMISSIONING

### LEGISLATIVE REQUIREMENTS

The following information must be supplied by:

- **Designers of plant/equipment** (in accordance with [WHS Regulations \(SA\) \[section 187\]](#))  
Designers of plant/equipment must provide or relay to the manufacturer relevant information (including the risk assessment) in relation to:
  - information which enables the manufacture in accordance with design specifications;
  - the purpose for which the plant/equipment is designed;
  - the testing or inspections to be carried out on the plant/equipment;
  - the installation, commissioning, decommissioning, use, handling and storage;
  - dismantling of the plant/equipment (if applicable);
  - the hazards and risk associated with use that the designer has identified;
  - the systems of work necessary for the safe use of plant/equipment;
  - emergency procedures (if any) that are required to be implemented if there is a malfunction of the plant/equipment;
  - registration of design if required under [WHS Regulations 2012 \(SA\) \[section 243-263\]](#).

**Note** for duties on designers which are involved with plant/equipment that includes a space that is intended to be or is a confined space please refer to [WHS Regulations 2012 \(SA\) \[section 64\]](#).

- **Manufacturers of plant/equipment**  
For the duties on manufacturing of plant/equipment please refer to [WHS Act 2012 \(SA\) \[section 23\]](#) and [WHS Regulations 2012 \(SA\) \[sections 59, 61, 64, 188 to 195\]](#).  
Manufacturers of plant/equipment must provide or relay to the supplier relevant information (including the risk assessment), in relation to:
  - the purpose for which the plant/equipment is designed;
  - the testing or inspections to be carried out on the plant/equipment;
  - the installation, commissioning, operation, maintenance, cleaning, transport, storage and where plant/equipment is capable of being dismantled, dismantling of the plant/equipment;
  - the systems of work necessary for the safe use of the plant/equipment;
  - emergency procedures;
  - any document relating to test; and
  - registration of design if required under [WHS Regulations 2012 \(SA\) \[sections 243-263\]](#) and the registration has not been conducted by the designer.
  
- **Importers of plant/equipment**  
For the duties on importing of plant/equipment please refer to [WHS Act 2012 \(SA\) \[section 24\]](#) and [WHS Regulations 2012 \(SA\) \[sections 61 and 64\]](#).  
Importers must:
  - obtain as much documentation from the overseas designers, manufacturers and suppliers as possible.  
This information must be in English.
  - ensure that plant/equipment is inspected, tested and hazards are identified.
  - not supply plant/equipment under [WHS Regulations 2012 \(SA\) schedule 5 part 1](#) unless the design is registered.

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## PLANT/EQUIPMENT ACQUISITION, INSTALLATION AND COMMISSIONING

### LEGISLATIVE REQUIREMENTS (Continued)

**Suppliers or lessors of plant/equipment (excluding office equipment)**

Schools/Branches that supply or lease out plant/equipment must provide the following information to the users:

- Purpose of the plant/equipment, and any testing and inspections to be performed.
- An operator's manual that includes how to install, commission, operate, maintain, clean, transport and store the plant/equipment.
- Competencies required by the operators of the plant/equipment (if relevant).
- Emergency procedures.
- Documentation (e.g. by use of a tag) that the plant/equipment has been inspected, has received maintenance and been tested between each leasing.

Not supply plant/equipment under [WHS Regulations 2012 \(SA\) schedule 5 part 1](#) unless the design is registered.

**Hirer of plant/equipment**

Workers using plant/equipment hired from external providers must be supplied with:

- Information on the purpose of the plant/equipment, and any testing and inspections to be performed (if applicable).
- An operator's manual that includes how to install, commission, operate, maintain, clean, transport and store the plant/equipment.
- Emergency procedures.
- Documentation (e.g. by use of a tag) that the plant/equipment has been inspected, has received maintenance and been tested prior to being hired.

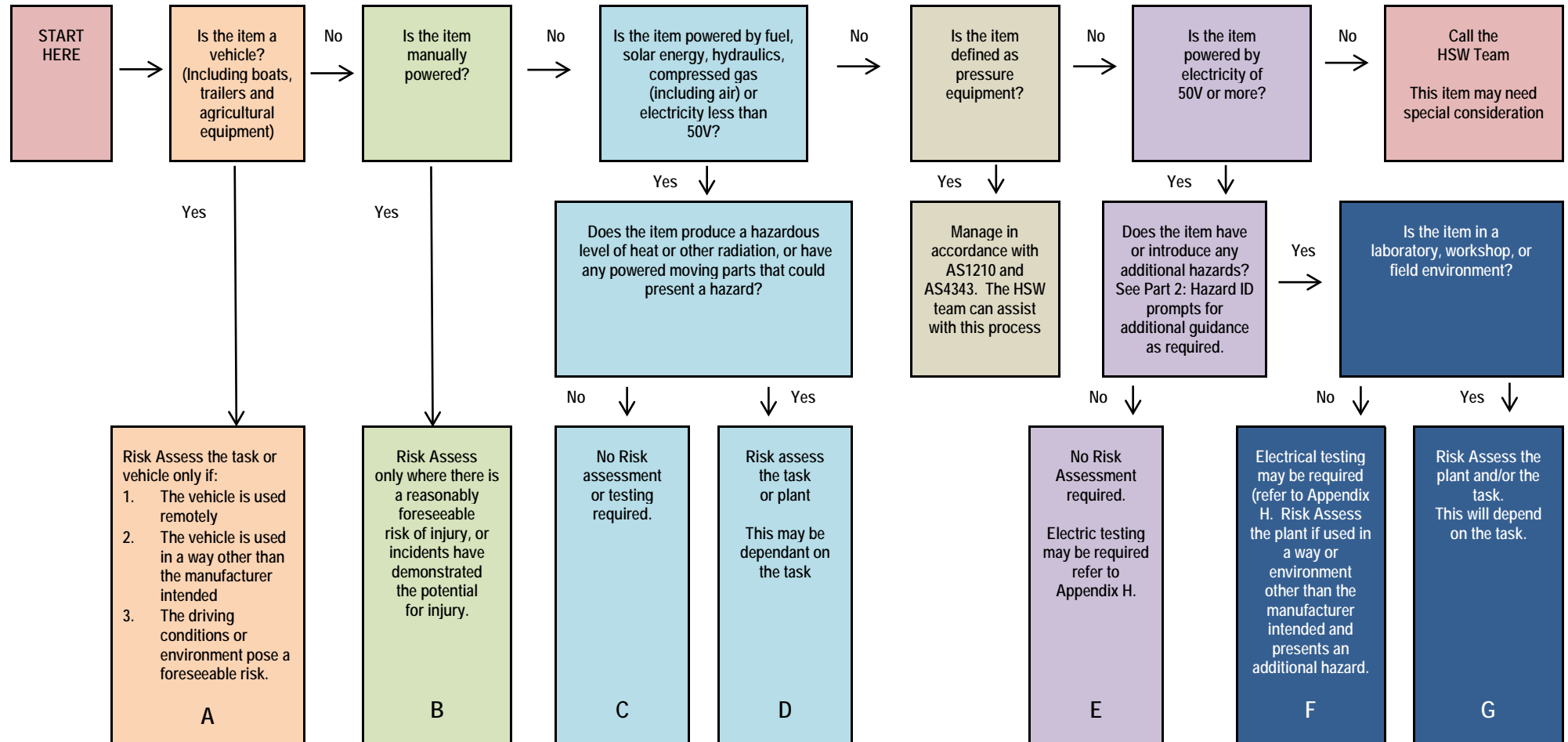
### GUIDANCE ONLY

For guidance of Plant/Equipment acquisitions, installation and commissioning, please refer to the prompts within the [Plant/equipment Acquisition, Installation and Commissioning Checklist Information Sheet](#).

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**PLANT/EQUIPMENT DECISION TREE** **PART 1**

Note that it acceptable to conduct a generic or a combined risk assessment – where either similar/related activities are undertaken or a defined area (e.g. laboratory/workshop etc.) is being included in one overarching risk assessment.



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## PLANT/EQUIPMENT DECISION TREE

### Part 2: Hazard Identification prompts (to assist with your risk assessment, where required by part 1)

#### Can the plant/equipment cause:

- entanglement of hair, clothing, gloves, jewellery, brushes, rags or other materials in moving parts?
- crush or impact injuries from parts due to unexpected failure and/or ejection of plant/equipment or material?
- injury by uncontrolled or unexpected movement?
- injury by cutting, puncturing, shearing, trapping, abrading or tearing?
- injury by electrocution, burn (by heat, steam, flame), explosion, leak of a high pressure substance (hydraulic fluid and air) toxic substances or radiation?
- high falls, suffocation, noise, vibration and contact with overhead or underground power lines?

#### Are:

- Workers unable to access the plant/equipment without risk of slip, trip or fall?
- Paths of access and egress less than 600mm?
- Hazards foreseeable if the controls and/or power are able to be switched on or off accidentally when in use (e.g. where the switch is not shrouded)?
- Guards inadequate for the type of plant/equipment and the work being undertaken?

#### Work environment hazards

- Does the plant/equipment create hazardous conditions due to harmful emissions fluids, gas under pressure, vapour, fumes, noise etc?
- Is any discharge of hazardous chemicals contained?
- Does the area which the plant/equipment is being placed have any weight restrictions (refer to Infrastructure Branch)?

#### Hazards with plant/equipment used for lifting people or materials

(Note all lifting equipment must have current certification for the weight being lifted and you must not lift loads above that certified/rated capacity).

- Is plant/equipment used for lifting people or hazardous materials?
- Are loads inadequately protected if they are required to be suspended over people or property?
- Has all required maintenance and servicing been conducted?

#### With plant/equipment in operating position:

- Are there any other foreseeable hazards that may occur during the operation of the plant/equipment (e.g. electricity/water, surface, hazardous chemicals, security and/or dust)?

### Part 3: Plant/equipment Categories

A. Vehicles. (e.g. boat, trailer, agricultural equipment, all-terrain vehicles/ATV)

B. Manually-powered. (e.g. simple hand tools, bench vice, hand winch)

C. Battery, hydraulic, solar, compressed gas/air or fuel-powered **portable** or **movable** items with no additional hazards. (e.g. portable radio, cordless screwdriver)

D. Battery, hydraulic, solar, compressed gas/air or fuel-powered **portable** or **movable** items with additional hazards. (e.g. some cordless power tools, gas burner/soldering iron, air tools)

E. Mains-power electrical items with no additional hazards, used as the manufacturer intended. (e.g. computer, photocopier, printer, refrigerator - including refrigerators purpose-designed for flammables)

F. Mains-powered office-based electrical items with additional hazards. (e.g. heater, kettle, microwave oven)

G. Mains-powered **fixed**, **portable** or **movable** lab, workshop and field equipment that may present additional hazards. (e.g. circular saw, heater-stirrer, lathe)

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## PLANT/EQUIPMENT RISK CONTROL (Hierarchy of Controls)

Risk controls are to be implemented using the "Hierarchy of Controls" below. In most cases, risk is controlled by a combination of several levels. The options are as follows:

Hierarchy of control		Examples of control measures
Level 1	Elimination	Decommissioning/disposal of the plant/equipment.
Level 2	Substitution	Purchasing alternative plant/equipment which meets the legislative requirements.
	Engineering/Isolation (Refer <a href="#">AS 4024 series</a> , <a href="#">Safety of Machinery</a> )	<b>Installing:</b> <ul style="list-style-type: none"> <li>• Safeguarding (see below).</li> <li>• An interlocking device.</li> <li>• A limiting device (i.e. prevents from exceeding design limits).</li> <li>• A mechanical restraining device (e.g. wedge, strut).</li> <li>• A protective structure.</li> <li>• A switching device.</li> <li>• Emergency provisions (see below).</li> </ul>
Level 3	Administrative	<ul style="list-style-type: none"> <li>• Use of Danger/Out of Service tags.</li> <li>• Documenting Safe Operating Procedures (SOPs) - see below.</li> <li>• Training and supervision.</li> <li>• Obtaining licences and permits.</li> <li>• Emergency provisions (see below).</li> </ul>
Level 4	Personal Protective Equipment	Providing operators with appropriate safety equipment e.g. eye and ear protection, safety boots, helmets, gloves, mask, vest as applicable. Also refer to <a href="#">Personal Protective Equipment Information Sheet</a> .

### Types of Safeguarding

- Permanently fixed guarding is to be used if access to the area of plant/equipment during operation, maintenance or cleaning is not required.
- An interlocked physical barrier is to be used if access to the area of plant/equipment during operation, maintenance or cleaning is required.
- A physical barrier (tool removal required) is to be used if neither fixed nor interlocked are reasonably practicable.
- Presence sensing safeguarding systems are to be used if none of the above is reasonably practicable.

Presence-sensing safeguarding system includes:

- A sensing system which uses radiation.
- Has an interface between the final switching devices of the sensing system and the machine primary control elements.
- Has a sensing/stopping mechanism which will cause the dangerous parts of a machine to be brought to a safe state.

**Safe Operating Procedures** (See example template HSW Handbook Chapter [Hazard Management](#))

Where the need for an SOP is dictated by the risk assessment process, it is to be developed from the risk assessment. Reference may also need to be made to the manufacturer's operating manual. If these procedures are assessed as being adequate the need for additional information may not be required. Although it may be convenient to display an SOP near an item of plant/equipment there is no requirement to do this.

An SOP should be completed when:

- there is a risk of injury to the operator or others;
- there is a risk of damage to plant
- workers require a training proficiency or competency for the activity.

### Emergency provisions

The appropriate emergency procedures are established and prominently displayed where applicable. Areas that have plant/equipment with a risk rating of high to very high must have authorisation as per HSW Handbook Chapter [Hazard Management](#), emergency procedures in place to deal with all foreseeable situations and workers trained in these procedures (training must be recorded on the TNA).

Safe Operating Procedures are documented and include information where applicable on:

- Emergency stops, in accordance with [AS 4024.1601 \(2006\)](#) [Safety of Machinery](#) and shut-down procedures;
- Method of communication and emergency contact details;
- Fire safety/evacuation management; and
- First aid and any other emergency information.

All operators must to be trained in the above provisions.

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## TAG OUT AND LOCKOUT PROCEDURE

### Overview

Danger (Lockout) and Out of Service tags must be used to clearly identify that either operators, maintenance staff, contractors and/or sub-contractors are engaged in the cleaning, repair or maintenance of the plant/equipment, or when an item of plant/equipment has been assessed as unsafe and has been isolated from service. Tags can be purchased from Maintenance North Terrace Campus, or Schools/Branches can source tags from external suppliers.



### Out of Service tag

Out of Service tags are typically used on faulty plant/equipment, or plant/equipment without a risk assessment in accordance with the Decision Tree (See [Appendix B](#).)

- Anyone can place an Out of Service tag on equipment if they consider it to be unsafe or unserviceable and must then immediately inform their supervisor/manager and Health & Safety Officer.
- The Out of Service Tag must be completed in ink (or permanent marker); and must be signed, dated and indicate why the plant/equipment has been taken out of service.
- Tags are to be attached in a suitable location to prevent the operation of faulty or unsafe plant/equipment e.g. a faulty electrical equipment should have a tag placed within 300 mm of its electrical plug.
- Plant/equipment must be disconnected from energy sources. Keys or other starting devices must be removed and locked away to ensure that the plant/equipment cannot be operated.
- Only the person originally attaching the Out of Service tag or a **proficient person** (in relation to the repair task) is permitted to remove an Out of Service tag.
- Before starting work on the item of plant/equipment, a risk assessment may need to be conducted to ensure that the item is safe.
- An Out of Service tag indicates that plant/equipment is unsafe to operate. It does not indicate that the plant/equipment is safe to work on for cleaning, maintenance or repair.

### Danger (lockout) tag and locks

The Danger tag is coloured red and black on a white background and complies with [AS 1319 \(1994\) Safety signs for the occupational environment](#). The tag informs other workers and/or emergency services that a person is still working on this piece of plant/equipment and that there is a potential hazard associated with the plant/equipment.



- A Danger tag (and a lock where necessary) shall be used if:
  1. It is not immediately obvious to all workers including visitors that the plant/equipment is out of commission, and
  2. The plant/equipment presents a hazard during the period being worked on (including if it was operated by another user).
- Each proficient person preparing to install, clean, repair or maintain plant/equipment which has been locked out is required to affix their own personal Danger tag. While Danger tags and locks are two separate items, for the purpose of isolating plant/equipment in a workplace they will be used together. The completed Danger tag formally identifies the attached lock and avoids potential confusion.
- The tag must be completely filled in, signed/dated and indicate why the plant/equipment must not be operated.
- Danger tags and locks must be attached to all switches/valves or other means of operating the plant/equipment, whenever the operation of the equipment may cause injury to workers or others.
- Danger tags must be placed in a location that will achieve isolation. Emergency stop buttons and similar controls must not be used for isolation.
- The person whose name appears on the Danger tag is the only person permitted to conduct work under its protection. Other workers are not permitted to work under someone else's Danger tag or lock.

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## TAG OUT AND LOCKOUT PROCEDURE

### Danger (lockout) tag and locks (Continued)

- Danger tags and locks must be removed by the worker at completion of a task.
- If the task being conducted cannot be completed by the end of the work shift, a new danger (lockout) tag should be placed on the plant/equipment for a new maintainer to complete the task. Where the task must be left incomplete at the end of a shift and will not be taken over by a new maintainer, an out of service tag should be placed on the item with enough information to reflect where the maintenance task is currently up to and what is required to recommission.
- Never operate plant/equipment while another person's Danger tag or locking device is in place.

### Placement of safety locks

Safety locks provide an additional level of protection when installing, repairing or maintaining plant/equipment. Safety locks conjoined to a Danger tag will be installed to secure the means of isolation. Locks will be affixed through the appropriate isolation point with the keys removed to prevent accidental removal. All keys to the lock will stay with the person responsible for applying the isolation.

In some instances the plant/equipment isolation mechanism may not be physically large enough to restrain the large numbers of required isolation devices. In cases such as this a multiple lock device (lock-out scissors) can be used to restrain the numerous devices for workers until the completion of the task.



### Removing tags/locks

- Check that the plant/equipment is safe to be returned to service and read the remarks on the Out of Service tag (if affixed) for additional information.
- Inform others concerned that the plant/equipment will return to service and confirm that all guards have been reinstated.
- Remove only the tag/lock with your own signature and destroy the tag.
- Never remove or destroy another person's Danger tag or locking device (see below for exception).
- Any person finding a loose completed Out of Service tag shall assume that it has been unintentionally detached from the isolation device and immediately notify the work supervisor/manager. The supervisor/manager will then ascertain which item of plant/equipment the tag belongs to and make the situation safe.

### Removing another person's Danger tag

Under normal conditions, no person will remove or destroy another person's Danger tag or locking device. However, at times a piece of plant/equipment is required to be returned to operation and the isolation point contains one or more Danger tags belonging to people absent from the workplace. This may occur due to workers taking a break without removing their tags or they have left the workplace to retrieve tools or other materials.

- The person requiring the plant/equipment will advise their work supervisor/manager of the situation.
- The supervisor/manager will contact the individual indicated on the tag and have them come back on site to remove the Danger tag/lock.
- If this is not possible, or if the person cannot be contacted, the supervisor/manager will nominate a suitable **proficient or competent person** (in relation to task) to investigate the situation. This investigation must ensure that no person or plant/equipment will be endangered or damaged by the removal of the tag/lock by other than the signatory.
- The supervisor/manager along with the nominated proficient/competent person shall co-sign the Danger tag(s), remove the locks and tags and submit them, detailing the event, to the Head of School/Branch within 24 hours of the incident occurring. The incident must be then recorded as per HSW Handbook Chapter [Incident, Reporting and Investigation](#).

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## REGISTRATION AND LICENSING

### General

If another area of the University is managing registrations or licences then the School does not need to duplicate the records kept by the area. For example radiation registrations are managed by Human Resources so the Schools are not required to duplicate these records, please refer to Appendix A of the [HSW Handbook Chapter Schedule of Programmable Events](#).

### Licence requirements in the University

All workers wishing to use University owned vehicles and mobile plant/equipment (including boats) must have appropriate licences for them. Note

### Vehicles

University vehicles must only be operated by holders of a current and valid Australian Licence or international drivers permit from SA Government. Before any vehicles and mobile plant/equipment can be used or operated the appropriate licence must be produced to the worker who is responsible within the School/Branch for vehicle management either during induction or prior to using a vehicle for the first time (please note that some Schools have forms to be completed prior using a vehicle, please consult with your [Health and Safety Officer](#)).

Drivers/operators who hold a learner's permit may not be permitted to operate University vehicles, in accordance with any local School/Branch rules and [Insurance Handbook](#). Where the driver has a Probationary Licence (P Plate) or is inexperienced, the worker's supervisor/manager is to determine if the person can drive a University vehicle, based on the nature of the activity and in accordance with any local School/Branch rules.

The vehicle driver/operator is to inform their supervisor/manager if they are not familiar with the type of vehicle (e.g. manual vs automatic, 4 wheel drive). Please refer to [Insurance Handbook](#)

Vehicle licences please refer to the SA government website <http://www.sa.gov.au/topics/transport-travel-and-motoring/motoring/drivers-and-licences/driver-s-licence-classes-and-conditions/driver-s-licence-classes>.

### High risk work and Plant/equipment Registration

[WHS Regulations 2012 \(SA\) Schedule 3](#) defines high risk work licences and classes of high risk work.

Registration requirements ([WHS Regulations 2012 \(SA\) Schedule 5](#)) and operator requirements are listed in [Table 2](#). For design registration processes please refer to [WHS Regulations 2012 \(SA\) \[sections 248 – 263\]](#) and for plant/equipment registration process please refer to [WHS Regulations 2012 \(SA\) \[sections 264-288D\]](#) or [SafeWork SA website](#).

**Table 2. Items of plant/equipment requiring registration, licensing, permits or certificates of competency by the SA Government**

Item	Govt. dept.	Plant/equipment registration	Operator: licence/ permit/certificate of competency	Legislation: WHS Regulations 2012 (SA) (Regulations) or Australian Standards (AS) (where applicable)
Amusement structures	SafeWork SA	Design registration and Plant/equipment registration		<a href="#">Regulations Schedule 5; AS 3533.</a>
Autoclaves	SafeWork SA	Plant/equipment registration		<a href="#">Regulations Schedule 5.</a>
Boilers	SafeWork SA	Plant/equipment registration	VET Course	<a href="#">Regulations Schedule 4 and 5</a>
Boom type elevating work platform	SafeWork SA	Design registration	VET Course	<a href="#">Regulations Schedule 4</a>
Building maintenance units	SafeWork SA	Design and Plant/equipment registration		<a href="#">4 Regulations Schedule 5.</a>
Concrete placing units (truck mounted with boom)	SafeWork SA	Design registration and Plant/equipment registration	VET Course	<a href="#">Regulations Schedule 4 and 5; AS 1418, AS 2550.</a>
All types of cranes and work boxes	SafeWork SA	Design registration and Plant/equipment registration	High Risk Work Licence	<a href="#">Regulations Schedule 4 and 5; AS 1418; AS 2550.</a>
Dogging and Rigging			High Risk Work Licence	<a href="#">Regulations Schedule 4.</a>

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## REGISTRATION AND LICENSING

**Table 2. Items of plant/equipment requiring registration, licensing, permits or certificates of competency by the SA Government (Continued)**

Item	Govt. dept.	Plant/equipment registration	Operator: licence/permit/certificate of competency	Legislation: WHS Regulations 2012 (SA) (Regulations) or Australian Standards (AS) (where applicable)
Forklift trucks	SafeWork SA	Design registration	High Risk Work Licence	<a href="#">Regulations Schedule 4.</a>
Gas cylinders	SafeWork SA	Plant/equipment registration		<a href="#">Regulations Schedule 5; AS 2030.</a>
Hoists	SafeWork SA	Design registration	High Risk Work Licence	<a href="#">Regulations Schedule 4 and 5.</a>
Lifts	SafeWork SA	Design and Plant/equipment registration		<a href="#">Regulations Schedule 5.</a>
Loaders, dozers, draglines, excavators,			VET Course	<a href="#">Regulations Schedule 4.</a>
LP/CNG gas fuel vessels (for automotive use/fuel systems)	SafeWork SA	Plant/equipment registration	Permit for installation, maintenance and repair	<a href="#">Regulations Schedule 5; AS 3509.</a>
Motor boats and drivers	Transport SA	Plant/equipment registration	Licence	<a href="#">Harbors and Navigation Regulations 2009.</a>
Motor vehicles and drivers	Transport SA	Plant/equipment registration	Licence	<a href="#">Motor Vehicles Act, 1959.</a>
Passenger ropeways	SafeWorkSA	Design registration		<a href="#">Regulations Schedule 5</a>
Pressure vessels and Serially produced pressure vessels (excluding boilers, turbines and Reciprocating steam engines)	SafeWork SA	Plant/equipment registration		<a href="#">Regulations Schedule 5.</a>
Reach stacker	SafeWork SA	Design registration	High Risk Work Licence	<a href="#">Regulations Schedule 4.</a>
Reciprocating steam engine	SafeWork SA	Design registration	VET Course	<a href="#">Regulations Schedule 4.</a>
Scaffolding	SafeWork SA	Design registration	High Risk Work Licence	<a href="#">Regulations Schedule 4 and 5.</a>
Turbine	SafeWork SA	Design registration	VET Course	<a href="#">Regulations Schedule 4.</a>
X-ray apparatus and sealed radioactive sources (See HSW Handbook Chapter <a href="#">Radiation Safety Management</a> )	Environmental Protection Authority	Plant/equipment registration	Licence	<a href="#">Radiation Protection and Control Act 1982.</a>

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## REQUIREMENTS FOR RESIDUAL CURRENT DEVICES (RCD)

### General

There is a requirement to minimise the electrical risks associated with the supply of electricity to 'plug in' electrical equipment by the use of an appropriate RCD in certain higher-risk workplaces.

### Types of RCD

There are two main types available:

- Fixed, non-portable units incorporated in fixed wall outlets which replace the normal general purpose outlet and into which the cord of the appliance is plugged; and
- Portable units which plug into a fixed power outlet via a short cord and into which the cord of the appliance is plugged.

### Electrical equipment that requires RCD protection

- All hand-held electrical equipment.
- Portable electrical equipment that is frequently moved during its normal use.
- Electrical equipment that is moved between different locations in circumstances where damage to the electrical equipment or flexible supply cord is reasonably likely.
- The normal use of the electrical equipment exposes the equipment to operating conditions that are likely to result in damage to the equipment or a reduction in its expected life span.
- Electrical equipment forming part of, or is used in, an amusement device.

**Note** that the requirement for a RCD does not apply where the supply of electricity is to an extra low voltage system that is electrically separated from earth and from other systems so that a single fault cannot give rise to an electric shock.

The RCD must:

- be a non-portable unit, connected on the supply side of the socket outlet, or
- be a portable unit connected directly to the output side of the socket outlet;
- comply with the requirements of [AS 3190 Approval and Test Specification for Current Operated \(core balance\) Earth-Leakage Devices](#);
- have a tripping current not exceeding 30mA; and
- be tested on a regular basis by means of its in-built testing facility and by an authorised person.

### Testing

Portable RCDs must be tested before the device is used on any day by means of the built-in test facility. In addition, programmed testing must be conducted and recorded within the School/Branch in accordance with [Appendix H](#).

**Note** that the day to day testing does not need to be recorded.

### Records

Testing records (3 and 6 monthly) are to be maintained by the School/Branch, to provide evidence that portable RCDs have been tested. Records must be kept until the next test.

### Tags

Portable RCDs must be tagged to indicate the date of the next test and should be checked during workplace inspections to monitor compliance with the Regulations.

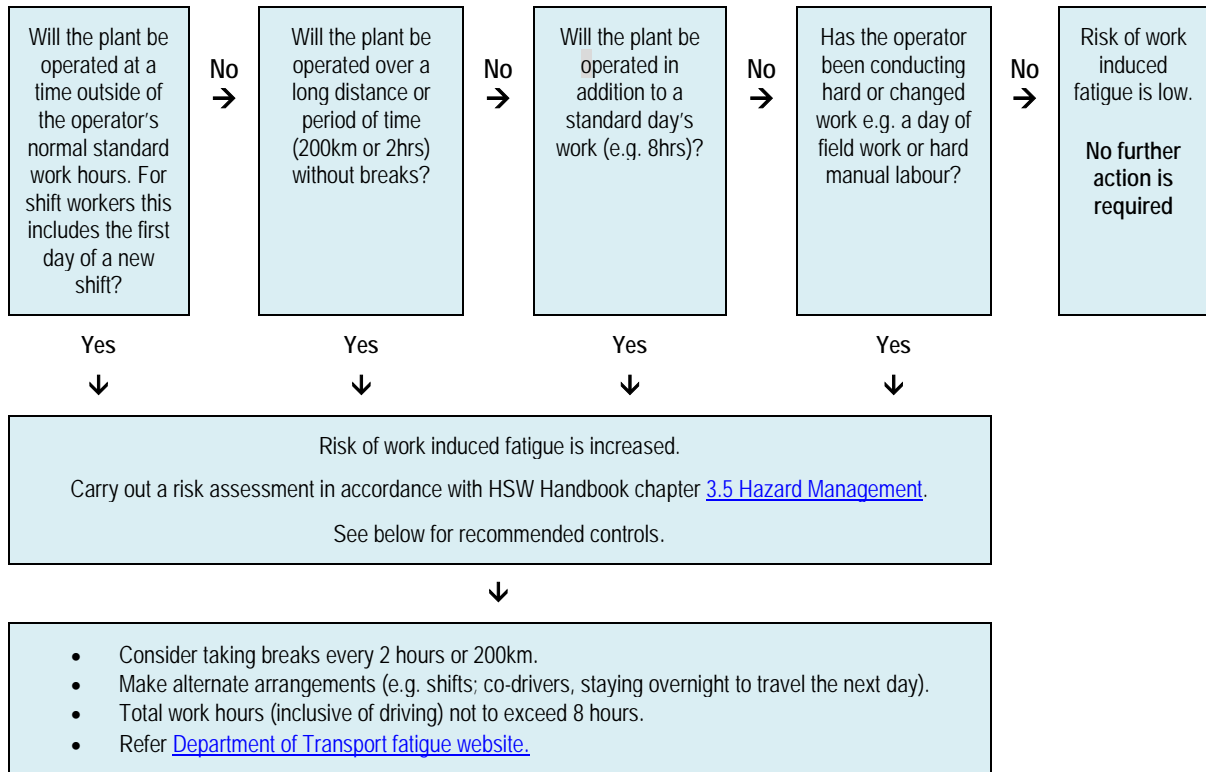
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## FATIGUE MANAGEMENT

### General Fatigue Management

Supervisors and Managers should take fatigue management into account when scheduling vehicle operations. A decision tree has been added below to assist supervisors/managers in fatigue management.

#### University Driver/Operator Fatigue Management Decision Tree



### Heavy Vehicle Legislation

In 2013 National legislation for heavy vehicles came into effect. The fatigue relevant sections of this legislation apply to any person who drives a heavy vehicle with a **gross vehicle mass or aggregated trailer mass over 12 tonnes**, or a bus with **more than 12 adult seats** (including the driver's) with a gross vehicle mass of over 4.5 tonnes. Additional information is available on the [SA Transport Department website](#) or contact your [Senior HSW Advisor](#) if you are undertaking this activity.

In terms of the University, this will apply mainly to field trips involving extended driving, and activities of a farm-related nature.

### Contracted services

It is expected that transport services contracted by the University will be aware of the current legislation and supervise their drivers accordingly.

All information can be found on the [SA Transport Department Heavy vehicles website](#).

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## ELECTRICAL – INSPECTING AND TESTING

Please also refer to [Electrical Safety Information Sheet](#) for frequently asked questions and operational tips.

### Inspection of cords

Where damage is likely to occur to a cord, and it is accessible, you will need to check the cord during your workplace inspection. If there is damage to the cord then the item must be removed from service (tagged out) and either repaired or disposed of. These items must be electrically tested if they are brought back into service.

### Electrical testing requirements

Please refer to [pages 4-6 \(Appendix H\)](#) when applying the categories below.

Electrical equipment which is supplied through an electrical socket outlet (i.e. not hard wired) **and** have one or more of the elements below will require electrical testing.

- Is used in an environment which is likely to result in damage to the equipment or a reduction in its expected life span (e.g. exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust).
- Can be damaged by regular flexing (crushing or crimping) of the cables (see [definitions section 3.7.17](#)).
- Can be damaged by abuse (rough handling).
- Is second-hand.
- Is hired.
- Is medical electrical equipment, medical electrical systems and non-medical electrical equipment used in the patient environments (including dental clinics).
- Has been modified or repaired.
- Where your building/floor does not have fixed RCD protection (please speak to your [Senior HSW Advisor](#)).

### Missing items requiring testing

All reports from external testing companies are to be checked by the Schools/Branches for missing items. These items must be accounted for and tested.

### Tagging

Tags must be attached to the electrical equipment or flexible supply cords to make it easier to identify tested equipment and must include:

- Date of the last examination and test.
- Date of the next examination and test.
- Name of person who performed the examination and test.

### Failed items

Failed items must be dealt with as soon as reasonably practical that the failure is identified. The item must be either:

- Tagged out using an Out of Service tag (see [Appendix D](#)); or
- Decommissioned and disposed of (see [Appendix J](#)).

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## ELECTRICAL – INSPECTING AND TESTING

### Electrical testing frequencies

The University for the majority of items is following *AS 3760 (2010) In service safety inspection and testing of electrical equipment for electrical equipment*. Please refer to [Table 1](#) and [Table 2](#) for electrical testing frequencies. Please read the tables below in conjunction with [pages 4-6 \(Decision trees\)](#) to determine what constitutes the minimum required testing.

**Note** for those items which require testing if the School/Branch Head wishes to test less frequently than what is outlined below, then a risk assessment must be completed (please speak to your [Senior HSW Advisor](#) for assistance).

**Table 1. Electrical equipment**

Environment or type of equipment	Frequency of testing
Workshops (places of manufacture, assembly, maintenance or fabrication)	6 months.
<ul style="list-style-type: none"> <li>• Flexing<sup>1</sup> of the cord in normal use.</li> <li>• Exposure to abuse (rough handling).</li> <li>• Hostile<sup>2</sup> environment.</li> </ul>	Every 12 months.
None of the environmental conditions below: <ul style="list-style-type: none"> <li>• Flexing<sup>1</sup> of the cord in normal use.</li> <li>• Exposure to abuse (rough handling).</li> <li>• Hostile<sup>2</sup> environment<sup>1</sup>.</li> </ul>	None unless they are being repaired, serviced, hired or are second-hand (see below and pages 4-6).
Medical electrical equipment; medical electrical systems and non-medical electrical equipment used in the patient environments (including dental clinics).	Electrical testing (and other testing) will be conducted in accordance with <i>AS 3551 Technical management programmes for medical devices</i> . The frequency of testing will be determined at the time of acceptance and is determined by the supplier or manufacturer. Hired medical equipment will be tested before introducing into service and the ongoing frequency is decided by agreement with the hirer and hiree.
Hire <sup>3</sup> Equipment.	Before introduction into service.
Repaired and serviced equipment.	After the repair or service <sup>4</sup> refer to <i>AS 5762 In-service safety inspection and testing – repaired electrical equipment</i> .
Second-hand equipment.	Before introduction into service.
Item which has been involved in an incident/accident (exposed to water, damage, chemicals etc)	<ul style="list-style-type: none"> <li>○ Before the item is returned to service.</li> <li>○ If the item required regular testing then apply the frequency as stated above.</li> </ul>

<sup>1</sup> Flexing is this circumstance means crushing/crimping not kinking/coiling/wrapping (see [definitions section 3.7.17](#) for more details).

<sup>2</sup> A hostile environment is an environment which is likely to result in damage to the equipment or a reduction in its expected life span (e.g. exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust).

<sup>3</sup> The test should be conducted by the person hiring the equipment to the University.

<sup>4</sup> This test is required to be conducted by the company or individual who repaired/serviced the equipment.

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## ELECTRICAL – INSPECTING AND TESTING

### Electrical testing frequencies continued

Table 2. Residual Current devices (RCD)

Environment	Type of RCD	Frequency of testing
<ul style="list-style-type: none"> <li>• Flexing<sup>1</sup> of the cord in normal use.</li> <li>• Exposure to abuse (rough handling).</li> <li>• Hostile<sup>2</sup> environment.</li> </ul>	Portable RCDs <ul style="list-style-type: none"> <li>• Tested by the incorporated self-test function.</li> <li>• Tested by the trip current and trip time test.</li> </ul>	Every 3 months.  Every 12 months.
	Fixed RCDs ( <i>Campus Services only</i> ) <ul style="list-style-type: none"> <li>• Tested by the incorporated self-test function.</li> <li>• Tested by the trip current and trip time test.</li> </ul>	Every 6 months.  Every 12 months.
None of the environmental conditions below: <ul style="list-style-type: none"> <li>• Flexing<sup>1</sup> of the cord in normal use.</li> <li>• Exposure to abuse (rough handling).</li> <li>• Hostile<sup>2</sup> environment.</li> </ul>	Portable RCDs <ul style="list-style-type: none"> <li>• Tested by the incorporated self-test function.</li> <li>• Tested by the trip current and trip time test.</li> </ul>	Every 3 months.  Every 2 years.
	Fixed RCDs ( <i>Campus Services only</i> ) <ul style="list-style-type: none"> <li>• Tested by the incorporated self-test function.</li> <li>• Tested by the trip current and trip time test.</li> </ul>	Every 6 months.  Every 2 years.

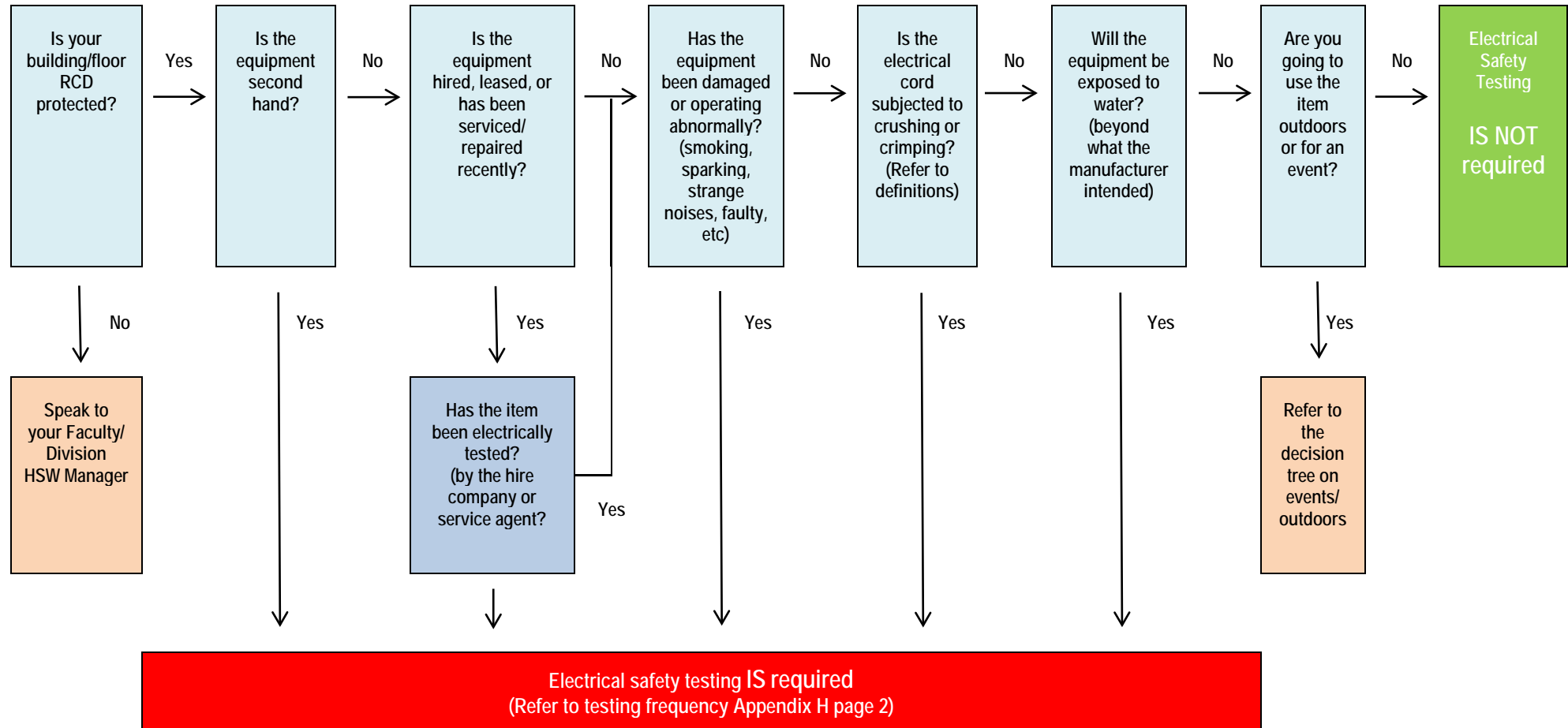
<sup>1</sup> Flexing is this circumstance means crushing/crimping not kinking/coiling/wrapping ( see definitions section 3.7.17 for more details)

<sup>2</sup> A hostile environment is an environment which is likely to result in damage to the equipment or a reduction in its expected life span (e.g. exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust).



**ELECTRICAL – INSPECTING AND TESTING**

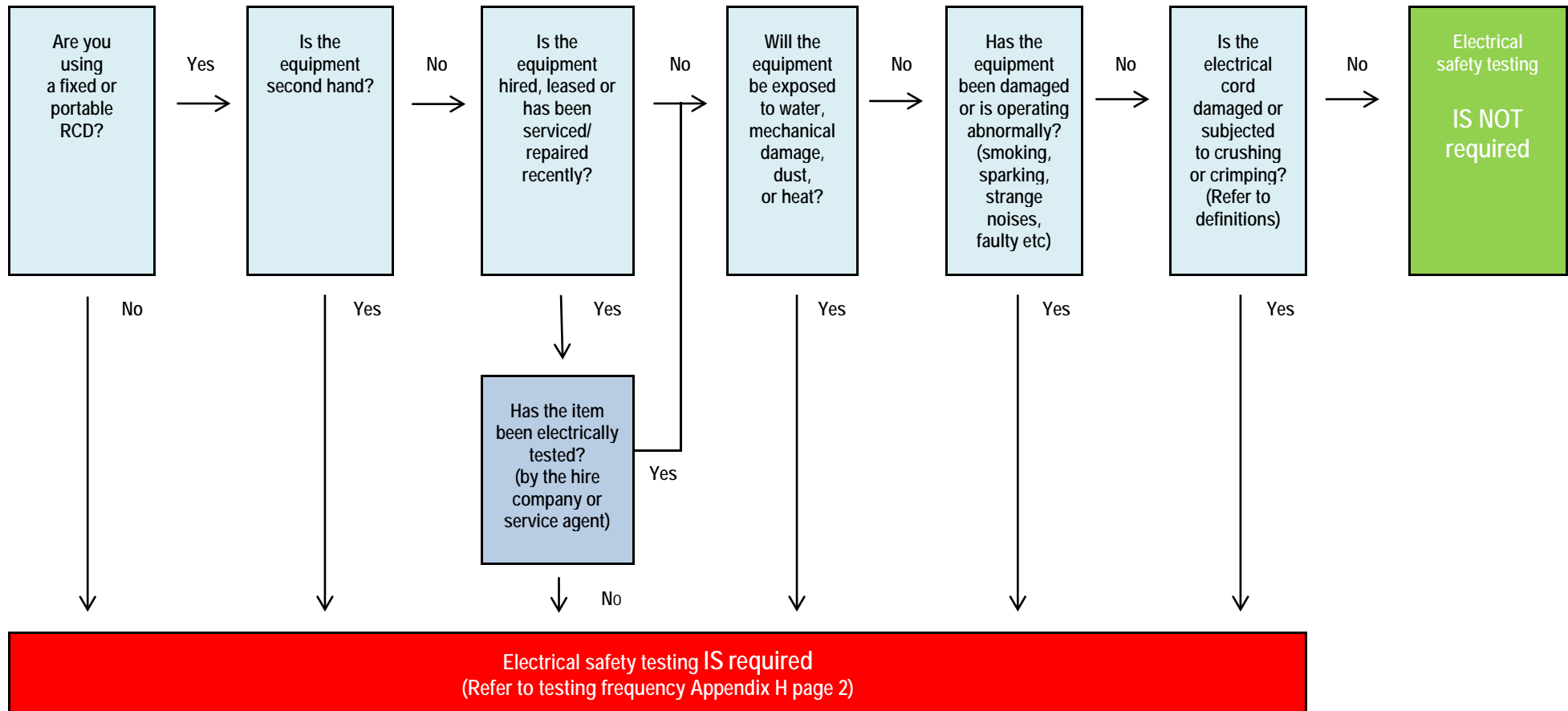
**Electrical Safety Testing Decision Tree – Office/Kitchen/Common Spaces**



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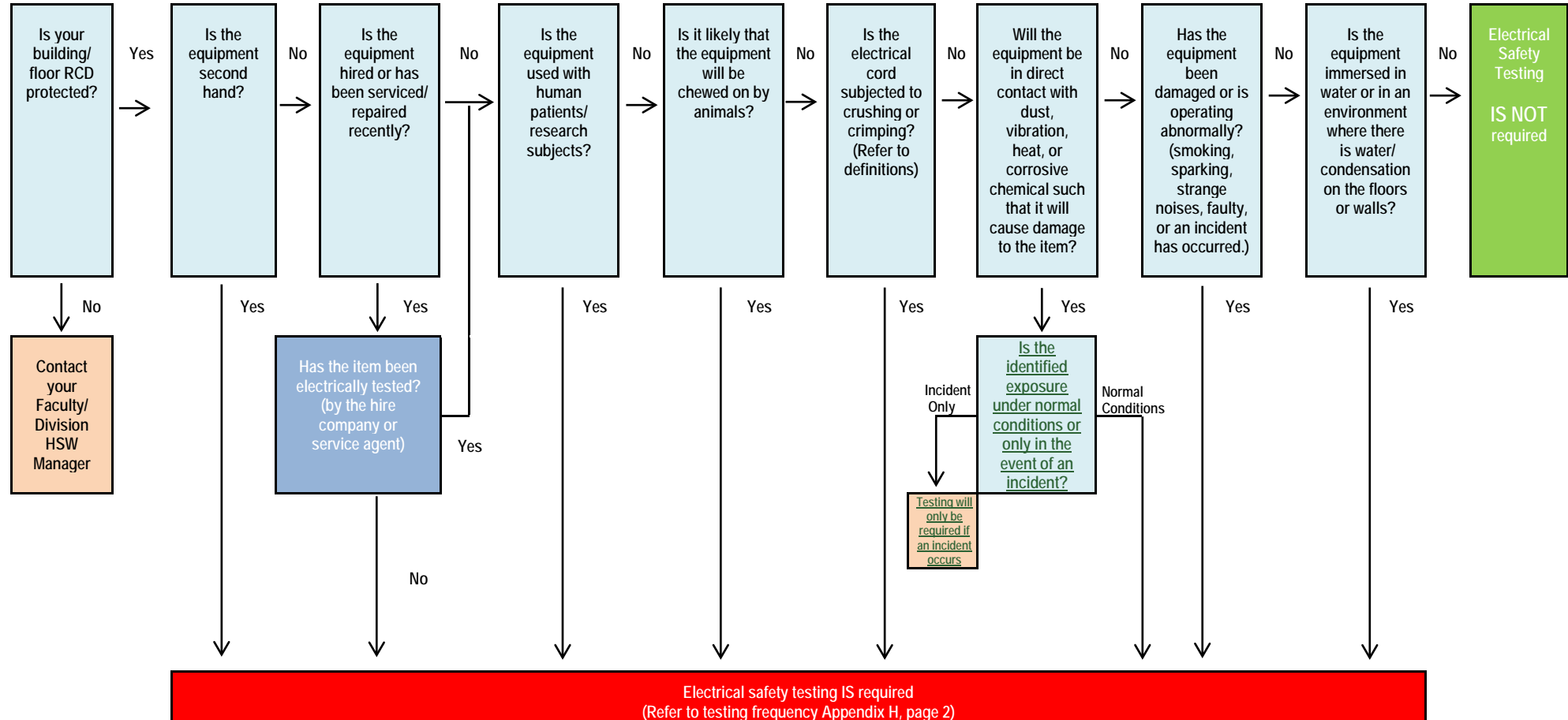
**Electrical Safety Testing Decision Tree – Events/Outdoors**



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## ELECTRICAL – INSPECTING AND TESTING

Electrical Safety Testing Decision Tree – Laboratory/Workshop/Medical/Dental



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## SCHOOL/BRANCH RECORDS

### Records to be kept by the School/Branch

(Note that records are to be kept in a format or in a known location (to all applicable workers) which can be easily retrievable if required to be viewed by the University or a Regulatory organisations e.g. SafeWork SA).

Document(s)	Required information	Comments
Plant/Equipment records (excluding electrical testing).	Registrations, tests, inspections, maintenance, commissioning, decommissioning, dismantling and alterations of plant/equipment.	<ul style="list-style-type: none"> <li>To be kept for the life of the plant/equipment.</li> <li>A copy given to the new owner if the plant/equipment is transferred (see <a href="#">Appendix J</a>).</li> </ul>
Electrical testing records (including RCDs).	Supplied by the electrical tester.	<ul style="list-style-type: none"> <li>To be retained until the next test or the device is disposed of.</li> </ul>
Risk Assessments and SOPs (where required).		<ul style="list-style-type: none"> <li>Reviewed every 5 years; after an incident or change to the process.</li> <li>A copy is to be given to the new owner if the plant/equipment is transferred (see <a href="#">Appendix J</a>).</li> </ul>
Licences and qualifications (where applicable, see <a href="#">Appendix E</a> ).		
Processes for testing, maintenance, inspection and calibration reports (where these activities are conducted in-house).	<ul style="list-style-type: none"> <li>Standards against which plant/equipment should be inspected.</li> <li>The frequency of inspections.</li> <li>Critical safety processes to be followed during inspections (e.g. isolated process).</li> <li>The process for different types of inspections (required by manufacturer's instructions).</li> <li>Results of tests or location of where the results are kept.</li> </ul>	
Specific Local Training/Induction records (for plant/equipment which requires training and supervision to operate it safely)	<ul style="list-style-type: none"> <li>Name and signature of the worker.</li> <li>Training description.</li> <li>Name of trainer.</li> <li>Date of training.</li> </ul>	See HSW Handbook Chapter <a href="#">Health, Safety and Wellbeing Training</a> .

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## SCHOOL/BRANCH RECORDS

Records to be kept by the School/Branch continued

Document(s)	Required information	Comments
Presence-sensing safe guarding Records	<ul style="list-style-type: none"> <li>• Safety integrity tests</li> <li>• Inspections</li> <li>• Maintenance</li> <li>• Commissioning and decommissioning</li> <li>• Dismantling and alterations</li> </ul>	Must be kept for 5 years
Disposal	<ul style="list-style-type: none"> <li>• See <a href="#">Appendix J</a></li> </ul>	Must be kept for 5 years (unless the item is exempt – see <a href="#">Appendix J</a> note)
Disposal – scrapping or for parts	A written agreement which makes it clear that the plant/equipment is being supplied specifically for scrap or spare parts and it is not to be used in its current form (this also can be achieved by marking the plant/equipment).	Must be kept for 5 years (not applicable if the plant is marked)

## DISPOSAL OF PLANT/EQUIPMENT

### Prior to disposal

Note If you are disposing of an electrical piece of plant/equipment which has no other associated hazards (e.g. hazardous chemicals; asbestos; energy build up) then the following actions are not relevant. To dispose of these items ensure that the cord is cut and the item is disposed of via the waste disposal system, there is no requirement for documentation.

- It is the responsibility of the Head of School/Branch and/or the researcher to arrange and bear the costs for the removal of plant/equipment from the University.
- Plant/equipment must be decommissioned by a proficient/competent person. Engage licensed contractors where required.
- Where the plant/equipment is hard-wired or part of the building infrastructure the School/Branch must consult with the Infrastructure Branch who in most cases will engage and manage any external contractors on the School's behalf.
- A risk assessment is to be conducted prior to disposal where the act of disposal presents a hazard, and should include considerations of:
  - hazardous chemicals, including asbestos. (For radiation equipment refer to the HSW Handbook Chapter [Radiation Safety Management](#) and speak to the HSW team.)
  - electrical isolation and energy dissipation of the plant/equipment.
- All items must be rendered safe (disabled) prior to disposal, e.g. electrical isolation and energy dissipation; removing the power cord, or releasing any contained pressure.
- Any documentation relating to the plant/equipment must be available to the person carrying out the decommissioning process.

### Scrapping or providing for spare parts

If second-hand plant is to be supplied or sold for scrap or spare parts the School/Branch must inform the receiver that the plant, in its current form, is not to be used as plant. This must be done in writing or by marking the item of plant.

### Donations, sale or transfer

If you are donating, selling or transferring a piece of plant/equipment then you will be required to transfer all documentation to the receiver, such as:

- All supplier's and manufacturer's documentation for the item of plant/equipment.
- All documentation and information on the plant/equipment's current condition e.g any faults and/or any repairs that are required.
- Any existing risk assessment documentation must be provided to the recipient at the time of exchange and a copy kept on file for five years.

Where there is documented risk associated with the plant/equipment, a written acknowledgement must be provided by the recipient that they accept those risks and a copy kept on file for five years.

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## REQUIREMENTS FOR DESIGN AND MANUFACTURE OF PLANT/EQUIPMENT

### Design

- Ensure, so far as is reasonably practicable, that the plant/equipment is designed to be without risks to the health and safety of workers:
  - who, at a workplace, use the plant/equipment for the purpose for which it is designed.
  - who store the plant/equipment at a workplace.
  - who carry out any reasonably foreseeable activity at a workplace in relation to the manufacture, assembly or use of plant/equipment for the purpose for which it was designed, or proper storage, decommissioning, dismantling or disposal of plant/equipment.
  - who are at or in the vicinity of a workplace and are exposed to the plant/equipment.
  
- Ensure that calculations, analysis, testing or examination are carried out to ensure so far as is reasonably practicable that the plant/equipment is designed to be without risks to the health and safety of workers (as above).
  
- Ensure that the relevant technical standards are used when designing Plant/equipment (please refer to [Appendix C within the Code of Practice managing risks of plant at the workplace](#)).
  
- Ensure that a risk assessment has been completed during the design phase which includes:
  - the range of environmental and operational conditions in which the plant/equipment is intended to be manufactured, transported, installed, erected, used, maintained, repaired and/or cleaned (including waste management where applicable);
  - the ergonomic needs of workers who may use the plant/equipment;
  - the implementation of controls to eliminate any risk, or where that is not reasonably practicable, minimise the risk.
  
- Ensure that if guarding is used as a control measure that it is designed in accordance with [WHS Regulations 2012 \(SA\) \[sections 189 and 208\]](#).
  
- Ensure that the operational controls, emergency stop controls and warning devices are designed in accordance with [WHS Regulations 2012 \(SA\) \[sections 190 to 192\]](#).
  
- Ensure that adequate information is provided to each person who is provided with the design concerning:
  - Purpose for which the plant/equipment was designed.
  - Results of any calculations, analysis, testing or examination.
  - Any conditions necessary to ensure that the plant/equipment is without risk to health and safety when used for the purpose for which it was designed.
  
- Ensure that the manufacturer is provided with information on the design specifications, intended use and systems of work necessary for the safe use of the plant/equipment, including emergency procedures (Refer to [Appendix A](#) page 2).
  
- Ensure that where specified in [Appendix E](#), designs are registered with SafeWork SA (Refer to [WHS Regulation 2012 \(SA\) \[sections 227-230\]](#)).

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**REQUIREMENTS FOR DESIGN AND MANUFACTURE OF PLANT/EQUIPMENT**

- Manufacturing**
- Manufacture the plant/equipment in accordance with the design specifications.
  - Ensure that the relevant technical standards are used when manufacturing plant/equipment (please refer to [Appendix C within the of Code of Practice managing risks of plant at the workplace](#)).
  - Ensure that after manufacture, if there is a fault that may affect the health or safety of the operator, that information pertaining to the fault and steps required to rectify it are provided to the relevant person(s) including the designer.
  - Ensure that the receiver of the item is provided with information which includes the:
    - purpose for the plant/equipment;
    - requirements for testing and inspection installation, commissioning, operation, maintenance, cleaning, transport, storage, ongoing registration requirements;
    - systems of work necessary for the safe use of the plant/equipment; and
    - knowledge, training or skill necessary to test and maintain the plant/equipment.
  - Ensure that where specified in [Appendix E](#), designs are registered with SafeWork SA (unless already registered by the designer) (Refer to [WHS Regulation 2012 \(SA\) \[section 231\]](#)).

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