

# Plant and Equipment Safe Usage Procedure

**Controlled Document – refer to Intranet for latest version**

Category: Health and Safety

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Responsibility: Health and Safety Manager

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## Scope

This is a UCOL wide procedure, applying to employees, contractors and students.

## Responsibility

**Executive Deans or Heads of School** (in their area of control) are responsible for ensuring:

- All supervisory staff, contractors, students and visitors are aware of and act upon their responsibilities in accordance with the 'Plant and Equipment Safe Usage Policy and this procedure, associated legislative requirements and Standard Operating Procedures;
- The plant and equipment is registered to the appropriate authority and to maintain the Plant and Equipment Register;
- All plant and equipment is installed and maintained according to manufacturer's instructions by certified providers;
- All plant and equipment is part of the Electrical Testing and Tagging programme delivered by Facilities Management.
- Liaising with the Health and Safety Manager for assistance with compliance of this policy.

**Facilities Management** (in their area of control) are responsible for:

- Ensuring compliance with legislative requirements and the Plant and Equipment Safe Usage Policy and these procedures, when purchasing plant and equipment;
- Arranging for the registration of plant and equipment to the appropriate authority and to maintain the Plant and Equipment Register;
- Ensuring all plant and equipment is installed and maintained in accordance with manufacturer's instructions by certified providers;
- Liaising with the Health and Safety Manager for assistance with compliance with the policy.

Facilities Management will also ensure all UCOL plant and equipment with electrical cords have the cords tested by a registered electrical tester as per the programmes timeframes.

**Managers, Supervisors (competent persons)** (in their area of control) are responsible for:

- Ensuring that all staff, contractors and students who are required or expected to use the plant and equipment have been trained in the safe usage of the plant and equipment, provided with relevant information and instruction on its safe usage before being permitted to use the plant and equipment;

- Ensuring that all staff, contractors and students who have been trained in the safe usage of the plant and equipment are aware of their responsibilities to work and act safely in accordance with this document, the Standard Operating Procedures for the plant and equipment, and any other relevant instructions, e.g. manufacturer's instructions;
- Ensuring the plant and equipment's hazard control plan, maintenance register and all SOP's are maintained for auditing purposes;
- Liaising with the Health and Safety Manager for assistance with compliance of this policy.

**Employees must:**

- Comply with the Safe Use of Plant and equipment Policy and associated procedures;
- Undertake training as provided or arranged by the employer;
- Observe all rules and precautions outlined in this policy and the Standard Operating Procedures in a manner that does not adversely affect their own safety or health or that of others;
- Immediately report all matters which may affect the workplace health and safety in relation to plant and equipment and associated systems of work to their supervisor.

**Contractors must:**

- Comply at all times with Safe Use of Plant and Equipment Policy and the UCOL Contractors on Site Policy;
- Work under other applicable laws and manufacturer's instructions when installing and maintaining the plant and equipment.
- Notify their principal UCOL manager of any situation they believe poses a threat to the safety and health of persons in the vicinity of the plant and equipment.

**Students must:**

- Comply with the requirements of Safe Use of Plant and Equipment Policy and associated procedures;
- Undertake training and follow the Safe Operating Procedures and all other instructions provided by UCOL lecturing staff in relation to the use of the plant and equipment.
- Immediately report any situation they believe poses a threat to the safety and health of themselves or others.

**Health and Safety Manager will:**

- Provide advice and support to Deans, Heads of School and Lecturers in their implementation of Safe Use of Plant and Equipment Policy and associated procedures.

## **Procedure**

### **Hazard Identification and Risk Assessment**

All managers must ensure hazard identification and risk assessments are undertaken of their areas of control in accordance with the Risk Assessment and Control Policy and its associated procedure. During this process, all plant and equipment will be identified as being a hazard and the risk assessment for that plant and equipment will determine what measures need to be taken to minimise the risk to persons using the plant and equipment.

The process involves the following steps:

- a) Assess each piece of plant and equipment (the hazard) for significance and assess the risk; i.e. consequence (severity) if something went wrong, and likelihood (through exposure and frequency) to determine a risk rating (see below).

- b) Ascertain the risk probability as low, medium or high and determine who would be exposed to the risk (normally the operator but could also be those in close proximity).
- c) Develop priority of actions for each hazard.
- d) Identify controls. Involve employees and use internal and external advice (engineers, health and safety manager, consultants).
- e) Select and put controls in place.
- f) If the hazard is not fully controlled by the measures put in place, consider further:
  - Current state of knowledge of users;
  - Guarding;
  - Interlocks;
  - Training;
  - PPE;
  - Information and signage;
  - Procedures;
  - Audit and review;
  - Monitor environment and/health of operators;
  - Supervision;
  - Workplace culture;
  - Staffing levels;
  - Replacing the machine with a safer alternative.
- g) If the hazard is fully controlled by the measures put in place, then continue to monitor and review their effectiveness through the operation of the plant and equipment.
- h) Once the hazards are controlled and the risks mitigated or managed by the use of PPE and/or procedure, the plant and equipment may be commissioned.

Risk assessment requires the consideration of likelihood of injury or harm to health occurring, and the consequences of injury or harm to health. Refer to the Risk Assessment and Management Procedure for further details.

## **Controlling Hazards**

The Health and Safety at Work Act 2015 places a duty on people:

- a) to eliminate risks to health and safety, so far as is reasonably practicable; and
- b) if it is not reasonably practicable to eliminate risks to health and safety, to minimise those risks so far as is reasonably practicable.

This duty is imposed on those employees who purchase, install, maintain and use plant and equipment.

Safety Standard AS 4024 Safety of Plant and equipment series is the standard that gives the current state of knowledge in relation to safeguarding plant and equipment and plant. It should be referred to by manufacturers as the primary standard against which to benchmark. Employers need to show that they can reach the same level, or better, of safety in the circumstances in which they are used.

The matrix of guarding controls is an example of how hazards can be minimised. The controls are divided into two categories, individual and group controls. Group controls protect more than one person, whereas individual controls can only protect one person at a time.

Hierarchy of Controls	Group Controls	Individual Controls
Eliminate	<ul style="list-style-type: none"> <li>Design or modify machine to eliminate the hazard</li> <li>Eliminate by substitution</li> <li>Eliminate human interaction (automate handling)</li> <li>Eliminate pinch points</li> <li>Increase clearances or remove forces</li> </ul>	
Minimise	<ul style="list-style-type: none"> <li>Fixed guard</li> <li>Interlock guard</li> <li>Interlock distance bars</li> <li>Failsafe interlocking</li> </ul>	<ul style="list-style-type: none"> <li>Safe by position</li> </ul>
Minimise	<ul style="list-style-type: none"> <li>Presence sensing devices</li> <li>Light curtains</li> <li>Computer warnings</li> <li>Light beacons and strobe lights</li> <li>Lock-out systems</li> </ul>	<ul style="list-style-type: none"> <li>Two hand controls</li> <li>Emergency stops</li> </ul>
Minimise	<ul style="list-style-type: none"> <li>Safe system of work</li> <li>Signage</li> <li>Training</li> <li>Supervision</li> <li>Safe operating procedures and instructions</li> <li>Administrative controls (e.g. safety inspections)</li> </ul>	<ul style="list-style-type: none"> <li>Personal protective equipment and clothing</li> </ul>

Most plant and equipment hazards will have been eliminated at the design phase and implemented through manufacture. Providing the transportation and installation process runs smoothly the plant and equipment should be in pristine condition when it is ready for commissioning.

### Purchase and Installation

When purchasing new plant and equipment, managers need to:

- Establish the need;
- Develop a business case and CAPEX application for higher priced items;
- Define the machines safety specifications and operational requirements which includes
  - checking legislative requirements,
  - ensuring it conforms to AS 4024 or exceeds this standard,
  - checking Work Safe's Approved Codes of Practice and Guidelines and Safe Use of Plant and Equipment page for advice on specific plant and equipment.
- Identify hazards, eliminate and minimise options;
- Plan for the safe installation.

Careful consideration at the purchase stage can help to minimise the risks at the operational stage. Location is also a factor, it must be suitable for the use and maintenance going forward yet also take health and safety factors into consideration. Are any other controls necessary to protect individuals in regards to the machine's location?

Installation of plant and equipment must be completed to the manufacturer's instructions and by a competent person(s). Installation can include:

- Physical inspection of the machine once packaging is removed;
- Review of guarding;

- Check that reach distances meet the ergonomics of machine guarding requirements;
- Electrical inspection and (testing & tagging);
- Hydraulic inspection;
- Pneumatic inspection;
- Ensure components are fit for purpose;
- System architecture meets the needs of risk assessment and safety requirement specifications;
- Inspection of components for things like damage and correct mounting;
- Check that wiring and piping match drawings and are labelled correctly.

### **Existing Plant and Equipment**

Existing plant and equipment may not have been through a thorough risk assessment process when acquired, but it is very important that this is completed and hazard controls are put in place, recorded, monitored and updated as required.

Accident registers tend to be kept by person, but it is equally important to keep a record of each accident that occurs on each piece of plant and equipment. Where patterns emerge, action need to be taken to put further controls such as retraining, better PPE, and update Safe Operating Procedures etc.

### **Maintenance**

Managers of plant and equipment must have an inspection and maintenance programme in place for each piece or group of the same type of plant and equipment. This programme should be based on the manufacturer's instructions, and should specify:

- Where servicing is needed;
- How much servicing is needed;
- What type of servicing is needed;
- How often it needs to be serviced;
- Who is responsible for the service and maintenance programme;
- How defects will be fixed; and
- What standards are used for performance testing and evaluation

A record or log of maintenance undertaken must be kept and made available to auditors on request.

### **Training**

All trainers of plant and equipment operation must explain to those being trained:

- a) How to check and adjust the machine before starting it;
- b) How to stop and start the machine;
- c) How the machine works;
- d) What the machine does;
- e) Location and operation of other controls;
- f) Actual and potential hazards and appropriate ways to control them;
- g) Purpose of guards and other safety devices;
- h) Correct use and adjustment of guards;
- i) Correct work methods to be used (including location and content of Safe Operating Procedures);
- j) How to recognise faults that could cause harm; and

#### k) Emergency procedures

It is expected that a qualified representative from either the manufacturer or vendor of the plant and equipment undertake the initial training of at least one UCOL employee who will be responsible for the plant and equipment. For more minor equipment, this stage may be overlooked providing the written instructions from the manufacturer are read and understood prior to the machine being used.

If a UCOL employee is employed with previous experience of operating the plant and equipment, they should be able to present some form of document which verifies this prior to their operating the machine.

A training programme is to be put in place to ensure all new employees, existing employees, students and contractors who need to use the plant and equipment complete the training before using the plant and equipment.

Full training records will be kept where a UCOL trainer is trained, or trains others in the use of the plant and equipment.

Emergency procedures must be in place and all operators trained in how to use them.

#### **Operating**

Plant and equipment must only be used for the purpose for which it was designed.

Safe Operating Procedures need to be established and followed for all plant and equipment. SOPs are written instructions that detail the steps that will be performed during a given procedure and they will define the safe methods of operation of plant and equipment to ensure the hazards are eliminated or risks minimised.

Personal Protective Equipment that has been identified as being required when using the plant and equipment must be worn.

Guards must be used.

#### **Emergency Procedures**

All high risk workshop areas at UCOL are provided with emergency cut-off switches. In an emergency, on activation these switches will cut power to all plant and equipment in the workshop. Once activated, the restoration of electrical services is a procedure in itself so employees, students and contractors must be advised of the correct use of these cut-off switches.

Emergency procedures are promoted throughout UCOL through flip charts which are to be found beside the evacuation procedure notifications on walls in each work space.

#### **Decommissioning and Removal**

Once a machine has completed its life cycle, the decommissioning and removal process can also pose risks to people. A risk analysis must be completed for the decommissioning and removal process and safeguards put in place.

Decommissioning must be undertaken by competent people and to the manufacturer's instructions.

Removal of plant must be planned and only undertaken when all safety precautions have been put in place.

Ensure removal of electrical plugs (disabling) the plant/equipment to prevent it being used.

#### **Relevant Legislation, Guidance and/or Web Sites**

- Health & Safety at Work Act 2015

- Work Safe's Best Practice Guideline – Safe Use of Plant and equipment (May 2014)
- Electrical Act 1992
- Electrical Amendment Act 2006

### **Related Documentation**

- [Plant and Equipment Safe Usage Policy](#)
- [Risk Assessment and Control Policy](#)
- [Risk Assessment and Control Procedure](#)