1.0 PURPOSE

The Provision and Use of Workplace Equipment Regulations (PUWER) 1998 and its associated Approved Cod of Practise (ACoP) replace a number of former legal requirements relating to the use of a variety of work equipment. The regulations aim to reduce risks to people's health and safety from equipment provided for use at work. PUWER applies to all equipment including lifting equipment but the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) take precedent and go over and above the general requirements of PUWER in respect of all lifting equipment.

Listed below is the ACoP that must be used for guidance purposes:

- "Safe use of work equipment" ISBN code 9780717662951, Legal series publication 22 available to download or purchase from http://www.hse.gov.uk/pubns/books/L22.htm
- INDG 291 simple guide to the provision and use of work equipment, available to download from http://www.hse.gov.uk/pubns/indg291.pdf

2.0 GENERAL

2.1 Introduction

The Provision and Use of Work Equipment Regulations 1998 (PUWER), which came into force in December 1998, replace previous regulations of the same name. These regulations continue to amplify and make explicit the legal duties to provide safe work equipment and aim to ensure that the use of work equipment is carried out in a safe way. Numerous legislative provisions which may have been relevant to departments in the past have been repealed. Examples are the machinery guarding requirements in the Factories Act 1961, the Abrasive Wheel Regulations 1970 and the Woodworking Machines Regulations 1974.

The definitions of work equipment is wide and includes machinery, apparatus, equipments, installations and tools. Therefore items as diverse as tractors, photocopiers, laboratory equipment and apparatus, soldering irons and scalpels are covered. Installations are included for the first time and therefore scaffolding, access equipment and safety devices etc are covered. Examples of items which are not work equipment are livestock, substances, structural items (walls, stairs, roofs etc) and private motor vehicles.

All work equipment has to meet all of the requirements of PUWER.

2.2 Aims of Procedure

This procedure seeks to:-

- Protect the safety of employees, students, customers and visitors
- Ensure hazards and risks associated with work equipment are appropriately managed.
- Comply with the Provision and Use of Work Equipment Regulations 1998 (PUWER).
- Raise awareness of the dangers associated with the provision and use of work equipment

2.3 What is Work Equipment?

The scope of 'work equipment' is extremely wide. It covers almost any equipment used at work including:

- Hand tools such as hammers, knives, handsaws, meat cleavers etc.
- Single machines such as drilling machines, circular saws, photocopiers, dumper trucks etc.
- Apparatus such as laboratory apparatus (Bunsen burners, instruments etc)
- Lifting equipment such as hoists, lift trucks, elevating work platforms, lifting slings, etc.
- Other equipment such as ladders, pressure water cleaners etc
- An installation such as a series of machines connected

2.4 General Duties/Responsibilities

Managers/Supervisors who control activities that involve work equipment have the following general duties/responsibilities under PUWER **(see flow chart – Appendix 2).**

a) Work equipment must be selected which is **suitable**, by design, construction or adaptation, for its intended purpose in its particular place of use (perhaps it might be used in a high risk area such as in a flammable atmosphere or in wet conditions) and it must be suitable for the process and conditions of use.
Risk assessments, must be completed in accordance with the Management of Health and Safety at Work Regulations 1992 and concerning work equipment, must address potential risks and identify appropriate control measures. The University standard Risk Assessment From should be used for any risk assessments **See Appendix 1** for a checklist that can be used to help in the completion of a risk assessment.

b) Where a risk assessment has identified a significant risk of injury from the installation or use of work equipment the relevant Manager/Supervisor must arrange for a suitable **inspection** (which may include tests) to be carried out by a competent person and recorded. Faculties and Departments are libel for any costs associated with inspections for their own equipment.

c) Managers/Supervisors must ensure that work equipment is subject to proper **maintenance** (so that performance does not deteriorate to the extent that is puts people at risk) carried out by persons competent for the work. The complexity and frequency of maintenance will vary with the type of equipment and its conditions of use. Planned preventative maintenance may be necessary. Wherever possible maintenance should be in accordance with the manufacturers' instructions. Departments are advised to keep and maintenance log. Faculties and Departments are libel for any costs associated with maintenance of their own equipment.

d) Faculties/Departments must ensure that all those who use, supervise or manage work equipment have available to them adequate health and safety **information and instructions** on the use of the work equipment. In complex cases or where significant risk is involved in any incorrect use of the equipment, the information and instructions should be in writing and should include information concerning any foreseeable difficulties and instructions on the procedures necessary to deal wit them. The information supplied by manufacturers (which must be in English) will be sufficient to satisfy these requirements. In addition, departments should ensure that all relevant information is passed to persons who maintain the equipment.

e) Faculties/Departments must ensure that all users, supervisors, managers and maintainers of work equipment receive adequate **training**, taking into account the risks involved and the particular circumstances of use of the equipment. Persons who use or maintain work equipment must be competent. Faculties/Departments are libel for any costs associated with training for their own equipment.

2.5 Manager/Supervisor Specific Duties

a) Measures must be taken to **guard against** contact with **dangerous parts** of machinery.

b) Measures must be taken to **guard against** a list of hazards specified in the regulations, examples are against **disintegration, ejection and explosion.**

c) Measures must be taken to **guard against injury from high and very low temperatures.**

d) Work equipment **must be provided**, where appropriate, **with suitable controls for stop, start and emergency stop** and with safe control systems.

e) **Provision** must be made **for safe and effective isolation** of work equipment from **all its sources of energy**.

f) **Equipment** which might otherwise fall, overturn or collapse **must be made stable.**

g) **Suitable and sufficient lighting** must be provided at work equipment.

h) Work **equipment must be constructed** or adapted **so that maintenance** operations can be **safely carried out.**

i) Work equipment must carry **appropriate health and safety markings** and warnings and in some situations posted information may be needed.

j) Where there is risk to health and safety, the **operation and maintenance of work equipment should be restricted to suitably trained and competent persons**. For instance work equipment may require specialist decontamination such as from chemical, biological or radiation risks before maintenance can take place.

k) Work **equipment must be properly maintained** (so that performance does not deteriorate to the extent that it puts people at risk **and** a related maintenance **log should be kept.**

2.6 Notification

This procedure will be publicised by direct communication with Heads of Academic and Support Department.

2.7 Responsibilities and Enforcement

Heads of Academic and Support Departments are responsible for ensuring that staff, students, visitors and where applicable, contractors are made aware of this procedure and that they comply with its requirements. This procedure forms part of the University's Health and Safety Policy and, as such, non-compliance will be addressed under the University's disciplinary procedures.

2.8 Monitoring and Reviewing

Heads of Academic and Support Departments will monitor this procedure. The University Health and Safety Team will assist by the provision of audit services on request.

2.9 Further Reading

Provision and Use of Work Equipment Regulations 1998 approved Code of Practice and Guidance ISBN 0 7176 1626 6 http://www.hse.gov.uk/lau/lacs/90-3.htm

The Simple guide to the Provision and Use of Work Equipment Regulations www.hse.gov.uk/pubns/indg291.pdf

Appendix 1

Equipment Safety Checklist

Part A of this checklist should be used for all potentially hazardous equipment other than simple and straightforward items.

Part B is for assessment of equipment classified as machinery under the regulations. *(With moving parts powered by electricity, internal combustion engine or other such energy source).*

Part A

Information, Instruction and Safe Use

1. There are written instructions covering:			
(a) any unusual hazards or complicated features	Y	N	N/A
(b) where appropriate, emergency shutdown	Y	N	N/A
2. (a) Instruction in readily comprehensive form (written or verbal) on all hazards has been passed to all who use the equipment	Y	N	N/A
(b) Written instructions provided by the manufacturer have been passed on to users	Y	N	N/A
3. (a) All users of the equipment been given adequate training in correct use, risks and precautions	Y	N	N/A
(b) A training record is kept which verifies this	Y	N	N/A
4. The equipment being used in accordance with the manufacturer's instructions	Y	N	N/A
5. If it has been adapted, the adaptation is suitable and safe	Y	N	N/A
6. The equipment is used in an appropriate environment (consider e.g. ventilation, damp or flammable conditions).	Y	N	N/A
7. If the equipment may be moved, the weight is known	Y	N	N/A
8. (a) The start and stop controls are clearly marked	Y	N	N/A
(b) Other operating controls and the contents of any containers are clearly marked	Y	N	N/A
9. There are clear warning notices or markings (eg. to wear personal protection, restrictions on use, and a list of authorised users) where appropriate	Y	N	N/A

Maintenance

10. There are appropriate intervals for checking: (a) electrical safety	Y	N	N/A
(b) any safety devices	Y	N	N/A
11. If inadequate maintenance could cause the equipment, guards, or other protection to fail in a dangerous way, there is a system of planned preventive maintenance in place, including where appropriate the periodic replacement or refurbishing of items before they reach the end of their usual life	Y	N	N/A
12. Clear maintenance instructions have been given to those responsible for maintaining the equipment	Y	N	N/A
13. **The equipment and system of maintenance is designed to minimise the risks which may arise during maintenance**	Y	N	N/A
14. **Specific Hazards** Protection is adequate in relation to (a) items falling from the equipment	Y	N	N/A
(b) items being ejected	Y	N	N/A
(c) overturning	Y	N	N/A
(d) collapse	Y	N	N/A
(e) overheating or fire	Y	N	N/A
(f) disintegration	Y	N	N/A
(g) explosion	Y	N	N/A
15. The equipment has been made stable by an appropriate method (e.g. by bolting, clamping or tying, etc.)	Y	N	N/A
16. There is sufficient general and (where necessary) local lighting	Y	N	N/A
17. There is protection against contact with hot or very cold temperature, as appropriate	Y	N	N/A
18. In the case of pressurised equipment, there is a written scheme of examination	Y	N	N/A

19. If gas fume or dust is released when the equipment is used, there is: (a) local exhaust ventilation, tested annually	Y	N	N/A
or (b) a COSHH specific assessment	Y	N	N/A
Dangerous parts of machinery			
20. All parts of dangerous machinery are adequately guarded or otherwise suitably protected	Y	N	N/A
21. All guards are sound and in good working order	Y	N	N/A

APPENDIX 2

Provision and Use of Work Equipment
Managers/Supervisors Duties Flowchart

Selection of equipment

Risk Assessment

Safety control measures

Training/Information instruction

Maintenance and inspection

Monitor use / safe systems / maintenance problems/ incidents/accidents

Review Risk Assessment

This process may be iterative as Risk Assessment may require selection or less hazardous equipment.

The duties are set out in the Electricity at Work Regulations, some of which are absolute (in other works they MUST be done), no leeway or tolerance is allowed on these types of duties and some must be carried out “as far as is reasonably practicable” (in other works there is some tolerance available) for further clarifications regarding these duties the University Health and Safety Department are available on the following extension numbers:

Debra Spedding ext 6957
Morgan Foster ext 6169
Chris Harrison ext 7062

To interpret these regulations correctly they require knowledge of the legislation, clarity as to which level of duty is imposed and the ability to carry out a risk assessment, for the latter, there is also a need to understand the risk and then with appropriate knowledge (this document owner is the University specialist for Electrical items) and he is available on:

Phil Lawson ext 6479

With appropriate knowledge, evaluate the measures necessary to control it. This involves weighing the likelihood of injury and severity of injury against the measures needed to avert the danger and, amongst other things it will be necessary to consider the implications of lone working as part of the process. It must be recognised that in the case of an electrical accident there is often a fine line between a near miss and a fatality, other an incident between electricity and humans will end with the muscular reaction that shortens the tendons in the arms and hands causing the person to grip the electrical terminal tighter, this reaction gets stronger up to a certain voltage threshold, risk assessments must be carried out by those with the specialist knowledge to recognise that fact and must always be suitable and sufficient and commensurate with the risk.

In terms of the Electricity at work regulations the legal holder is clearly defined and in our case is shown below in a simple diagram format:

University of Lincoln Vice Chancellor

Mary Stuart

⇩

Head of Estates and Campus Services

John Plumridge

⇩

Project Engineer - Electrical

Phil Lawson

The University of Lincoln Vice Chancellor is the legal owner, however, she delegates the responsibility to ensure compliance to the Head of Estates & Campus Services who in turn delegates that responsibility to the Project Engineer – Electrical within the department. Current names for posts are shown, these must be changed at the person leaves or moves elsewhere.

In terms of the Electricity at work regulations the legal “duty holder” is clearly defined and interpreted as shown above. However, the legislation states that where an EMPLOYEE is in CONTROL of electrical danger, the duties imposed on the INDIVIDUAL are equivalent to the duties placed on the employer and the self employed.

The Electricity at Work Regulations 1989 require Heads of Departments to ensure that electrical systems and the equipment for which they are ultimately responsible are designed, operated, maintained, modified and extended in a way which avoids danger, if they are in any doubt about this then they should contract the Project Engineer – Electrical, Phil Lawson on ext 6479

3.0 DEFINITIONS

'An electrical system' is a system in which all the electrical equipment is, or may be, electrically connected to a common source of electrical energy.

'Electrical equipment' includes anything used or installed for use, to generate, provide, transmit, transform, rectify, convert, conduct, distribute, control, store, measure or use electrical energy.

'The person in control of Electrical Danger' this person MUST be competent by formal training and experience and with sufficient knowledge to avoid electrical danger from low voltage battery systems to High voltage systems across the University campuses.

4.0 RESPONSIBILITIES

4.1 Heads of Departments are legally responsible for all electrical work, systems and equipment within their respective departments. Examples could include but are not restricted to the following:

Any electrical equipment not fitted as part of the buildings structure such as workshop and specialist laboratory equipment, computers and printers, monitors, portable desk lighting, portable electrical heaters and fans and temporary extension leads.

Except for those systems described above the following paragraph 4.2 lists items that would normally fall under the jurisdiction of the Director of Estates & Commercial Facilities

4.2 The Director of Estates & commercial Facilities would generally be recognised as being responsible for the following items.

- Al hard wired electrical installations within a University building this would include both electrical sockets and electrical lighting as supplied in the ceiling, floors or walls.
- All street lighting around the Campuses including car parking areas and cycle and footpaths leading onto main roads.
- All electrical lifts and electrical operated doors.
- All sub-stations, switch rooms and all electrical services (other than those provided by statutory authorities) including mains supplies, lighting conductors, general and special earthing.

- All electrical distribution systems (in multiphase systems this includes all works u to and including the isolator and in single-phase systems this includes any work up to and including distribution boards) also all subsidiary circuits up to and including socket outlets, fused spurs, ceiling or wall lighting terminations.

4.3 The Project Engineer – Electrical (currently Phil Lawson) must liaise with departments, particularly in respect to timing, access, isolation of supplies and notification of intended works, so that departments can prepare or co-operate with regards to allowing essential maintenance and compulsory electrical testing to be carried out.#

4.4 Departments other than Estates & Commercial Facilities department must not carry out or cause to be carried out any modifications or extensions to the systems defined previously in 4.2 without prior knowledge and written approval of the Project Engineer – Electrical (Phil Lawson).

4.5 Then must ensure that areas where electrical switchgear is installed are kept clean, tidy and unobstructed at all times. Dedicated switchgear space must not be used as storage space.

4.6 When work is taking place on the electrical distribution system, Heads of Departments must exercise their responsibilities as the persons in general control of the workplace, to ensure that in-house personnel and contractors are provided with a (general) safe working area and supply suitable and sufficient information to enable induction training to be carried out covering hazards specific to that environment at that time to enable them to all work safely.

4.7 Heads o Departments must ensure that any contractors they wish to employ are competent. Contractors must be monitored and assessed on an ongoing basis, it is their responsibility to arrange this.

Estates And Campus Services have a series of 4 procedures they use to ensure correct competent contractor selection, induction, ID requirements and current procedures which they use to ensure control of contractors they bring onto the University.

5.0 LIVE WORK AND LIVE TESTING

It is University policy that live work on electrical systems should not be carried out, with the specific exception of testing and diagnostic work. In these cases Regulation 14 of the Electricity at Work 1989 Regulations requires *the person in control of danger to:*

a) Determine in each case that it is unreasonable in all the circumstances to work on conductors which are dead.
b) Carry out a risk assessment to assess the risks and methods of controlling them.
c) Decide whether it is reasonable to work live.

6.0 PURCAHSE OR DISPOSAL OF ELECTRICAL EQUIPMENT

Electrical equipment that is to be sold on, or which is donated by a department, must also be safe and meet legal safety requirements in relation to its design and construction, and this must be verified before being offered for sale, or donated. Written instructions for safe operation of the equipment must be provided for the intended recipient. Electrical equipment that is hired out is also within the scope of these regulations.

End of life disposals of electrical equipment must be in accordance with the European Unions waste electrical and electronic equipment directive (WEEE Directive*) this minimises the impact on the environment, by re-using, recycling and reducing the amount of WEEE going to landfill. Hazardous WEEE should be disposed of via the below mentioned person.

NB* - Alan Blackham (Estates Manager) on ext 6649 can provide you with the latest University policy information on this.

7.0 TEACHING AND RESEARCH ACTIVITIES

The Electricity at Work Regulations must be taken into account in the risk assessments for teaching and research activities. Particular attention must be paid to the competent supervision of students and others involved in electrical work. Adequate forethought must be given to the safety of other person who may be affected by the activities.

The regulations are specific in that no person may be engaged in any work activities where technical knowledge or experience is necessary to prevent electrical danger, or injury, unless he/she possesses such knowledge or experience, or is under such a degree of supervision as may be appropriate in relation to the nature of the work.

The supervisors of academic and similar work must be aware of these requirements and compliance must be ensured.