

Estates and Facilities Management

Policy for the Safety of Pressure System Reference

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1.0 PURPOSE

This Policy is to ensure that the periodic inspection of pressure systems, and the risks of pressure systems are assessed, controlled, and managed in accordance with current UK Regulations, (Pressure Systems Safety Regulations 2000 (SI 2000 No 128).) and Approved Code of Practice (ACOP) and guidance. This policy should be read in conjunction with all references within this document.

This document replaces the previous Facilities Services (FS) Health and Safety Policy.

2.0 SCOPE

This policy applies to all areas and installations on the Loughborough University sites including residential areas, IMAGO, UPP and UNITE and any other organisation residing within the site where pressure systems are in use.

3.0 REFERENCES

The Pressure Systems Safety Regulations 2000 (PSSR),
Approved Code of Practice. ISBN 9780717617678 and references therein.
Pipelines Safety Regulations 1996 (PSR)
Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 ("CDG 2009"), [SI 2009 No 1348](#)
Health and Safety at Work etc. Act (1974).
COSHH Regulations (2002).
Management of Health and Safety at Work Regulations 1999
The Safety Representatives and Safety Committees Regulations 1977.
Health and Safety (Consultation with Employees) Regulations 1996.
Policy on the Reporting of Accidents, Dangerous Occurrences and Occupational Ill Health.
Change Control Procedure
The Pressure Equipment Directive 2014/68/EU(PED) &
The Pressure Equipment Safety Regulations 2016 (PE(S)R)
The Provision and Use of Work Equipment Regulations (PUWER) 1998

4.0 DEFINITIONS

4.1 Pressure vessels and systems

Under PSSR, a pressure system is a closed system, comprising of one or more pressure vessels and/or pipeline/pipework along with their protective devices, designed to contain, or is liable to contain, a relevant fluid. A relevant fluid is steam at any pressure, any fluid or mixture of fluids which is at a pressure greater than 0.5Bar above atmospheric pressure, or a gas dissolved under pressure in a solvent (e.g., acetylene).

Pressure systems used at the University include: steam boilers, autoclaves, pressurised storage vessels for cryogenic liquids and compressed gas distribution systems.

Pressure equipment failures can kill or seriously injure users as well as people nearby and cause serious damage to property.

Note: The term 'fluids' includes gases and liquids which can exert a vapour pressure. They do not include hydraulic oils. Hydraulic systems, whilst using high pressures, do not contain relevant fluids and therefore are not classed as pressure systems under PSSR.

Note: Gas cylinders (the legal term for them being transportable pressure vessels TPV) are covered by separate legislation (The carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009)

Where gas is kept in liquid form at very low temperatures in a tank and the vapour pressure above the liquid is less than or equal to 0.5 bar (gauge) at equilibrium then PSSR would not apply). PSSR does not apply simply because of pressure exerted by a head of liquid. Moreover, PSSR does not aim to deal with vacuum conditions.

Further guidance with an indicative list of plant that comes within the scope of this policy is provided in Appendix 1.

The user/owner of a pressure system shall not operate the system without a Written Scheme of Examination (WSE), compiled by a competent person. A WSE is a site-specific technical document, which in the main defines:

- The scope of the pressure system including safety devices.
- The safe operating limits of the system.
- The nature and frequency of examination.
- The measures necessary to prepare the system for examination.

It should be noted here that pressure vessels containing a relevant fluid other than steam can be exempt from the requirement of having a WSE if the pressure x volume of the vessel is less than 250BarLitres. However, other regulations within PSSR still apply to these vessels.

All modifications or repairs to a pressure system should be reviewed and approved by the competent person/body.

4.2 Legislation

The installation and use of pressure vessels requires compliance with 7 pieces of legislation:

[The Health and Safety at Work Act 1974 \(HASWA\)](#)

The University is required under section 2 of the Health and Safety at Work Act 1974 to ensure, so far as is reasonably practicable, the health, safety, and welfare of employees whilst at work. This legislation includes a general duty of care to protect our students. These requirements are applicable to all work situations, including provision of a working environment that is safe and without risk to health.

[The Management of Health and Safety at Work Regulations 1999 \(MHSWR\)](#)

Requires the University to make suitable and sufficient assessment of the risks to the health and safety of employees whilst they are at work and to ensure the health and safety of third parties (i.e., students, visitors, and contractors) arising out of, or in connection with University activity.

[The Pressure Equipment Directive 2014/68/EU\(PED\) & The Pressure Equipment Safety Regulations 2016 \(PE\(S\)R\)](#)

These Regulations apply to the manufacturing of pressure equipment for distribution of the EU and UK markets. PED and PE(S)R cover pressure equipment and assemblies with a maximum allowable pressure greater than 0.5 bar above atmospheric pressure (gauge pressure).

Since BREXIT CE marked goods are covered under PED and are for the EU market only. From 01/01/2021 goods made for the UK or NI markets are covered by PE(S)R and are UKCA or UKNI marked, respectively. NOTE: there is a non-reciprocal arrangement between UK and EU for the UK to accept CE marked goods until 31/12/2021.

Manufacturers are required to provide specific evidence to show compliance with these regulations.

[The Pressure Systems Safety Regulations 2000 \(PSSR\):](#)

The aim of these Regulations is to prevent serious injury from the hazard of stored energy as a result of the failure of a pressure system or one of its component parts.

To determine which regulations of the PSSR apply to a given system see Appendix 1.

[The Electricity at Work Regulations 1989 \(EAWR\):](#)

The EAWR 1989 places a legal responsibility on employers and employees, as duty holders, to ensure that electrical systems used at work under their control are safe. To achieve compliance with the legal requirements of the EAWR 1989 requires proof that an electrical system is safe, which involves amongst other things, proper inspection, and testing of a system by competent people and the creation and maintenance of records.

[Control of Substances Hazardous to Health Regulations 2002 \(COSHH\)](#) Requires the University to carry out suitable and sufficient assessment of the risks with work involving exposure to hazardous substances. Where

necessary the University should ensure that exposure of staff, students, visitors, and contractors to substances hazardous to health is either prevented or, where this is not reasonably practicable, adequately controlled.

COSHH however does not cover flammable and explosive substances, lead and lead salts, asbestos and radioactive substances which are only harmful by nature of their radioactivity. These substances are subject to separate pieces of legislation.

[The Provision and Use of Work Equipment Regulations \(PUWER\) 1998](#)

Applies to all work equipment. The regulations require that:

Work equipment is suitable for the purpose it is used or provided for and is properly maintained and inspected at suitable intervals.

Where the use of work equipment is likely to involve specific risks, the use, maintenance etc. of that equipment is restricted to people given the task of using and/or maintaining it.

Users, supervisors, and managers have received adequate training for the purposes of health and safety.

5.0 ROLES & RESPONSIBILITIES

5.1 Roles

Director of Facilities Services (FS)- A person appointed by Loughborough University to take managerial responsibility for the overall execution of this policy.

Duty Authorised Person- A person appointed by the Director of FS in writing, to take managerial responsibility for the implementation of policy and procedures at the University in accordance with the ACoP.

Authorised Person FS - A person appointed by the Duty Authorised Person to take managerial responsibility for the implementation of policy and procedures as specified.

Authorised Person – University School. A person appointed by the University School to take managerial responsibility for the implementation of policy and procedures as specified.

Authorised Person - University Associated Companies. A person appointed by the University Associated Company to take managerial responsibility for the implementation of policy and procedures as specified.

Pressure Vessel Inspection Service Provider – A company specialising in pressure vessel inspection services, contracted to provide a service to the site, otherwise known as a competent body. The contract is established and administered in conjunction with the Duty Holder and the service provider.

Engineering Insurance Surveyor - A person appointed by the inspection service provider to undertake inspections of pressure vessels, otherwise known and a competent person.

Project Manager: A person/s appointed to manage the construction of new infrastructure and buildings and the modification or refurbishment of existing installations.

Health and Safety team members – A person(s) who is responsible for advising on all matters Health and Safety and liaising with the Facilities Services team.

5.2 Responsibilities

Director of FS will:

- Appoint and ensure the competency of the Duty Holder, by ensuring that the person has suitable ability, experience, training, and resources to enable them to carry out the role.
- Check content and Guidance of this Policy and the Written Scheme. Ensure that these are available and accessible for all persons with responsibilities under this policy.
- Ensure any modifications to this policy are carried out in consultation with the Duty Holder and the Health and Safety Manager.

Duty Authorised Person will:

- Review and update this Policy when appropriate in line with site procedures.
- Appoint and ensure competency of FS Nominated Deputies by ensuring that the person has suitable ability, experience, training, and resources to enable them to carry out the role.
- Ensure a central site register of FS managed pressure systems is maintained.

Ensure Risk Assessments are reviewed on a bi-annual basis or whenever it is reasonable to suspect it is no longer valid.

- Ensure procedures listed in the Risk Assessment to manage risk are in place. Arrange a Risk Assessment for any plant and equipment previously unidentified.
- Manages all actions for minimising risk listed in the Risk Assessment, ensure the actions are carried out and recorded.
- Communicate by whatever means suitable, information to the employees with regards to relevant information on the risks and control measures being undertaken to control pressure vessels.
- Chairing appropriate Pressure Systems management review meetings and forums.
- Check any modifications or changes to existing installations are carried out under the site change control process and that all associated drawings, Risk Assessments, and testing schedules are updated.
- Seek assurance from University Schools, University Associated Companies, and tenants that they are undertaking the periodic inspection of their pressure systems, and that the risks of pressure systems are assessed, controlled, and managed in accordance with current UK Regulations, (Pressure Systems Safety Regulations 2000 (SI 2000 No 128).) and Approved Code of Practice (ACOP) and guidance.

Authorised Person (s) will:

- Take day-to-day responsibility for controlling any identified risk from pressure systems in line with the Written Schemes.
- Take day-to-day responsibility for controlling any identified risk with respect to any changes to the operation of plant or the management of change process within their area.
- Advise the Duty Holder of any pressure vessel changes additions removal from service or items for concern in their area.
- There will be Nominated deputies identified for specific functions and operations identified in the written procedures. These will include, but not be limited to:
- Authorised Person – FS Maintenance Nominated Deputy – FS Development Nominated Deputy – University Schools
- Nominated Deputy – University Associated Companies
- The nominated deputy for University Schools and University Associated Companies are to be appointed by a senior manager of the School or Associated Company.
- Where one or more organisation or Schools/sections operate in an area, there will be the appropriate corresponding number of Nominated Deputies.
- Take responsibility that all WSE for pressure systems are suitable and compiled by a competent person.
- Take responsibility that all modifications or repairs to a pressure system are reviewed and approved by the competent person/body.
-

Authorised Person - FS Maintenance

- Carry out audits to ensure all WSE's and risk assessments are in place, completed and comply with current regulations.
- Review the risk assessment and control measures whenever there is a reason to suspect that they are no longer valid. i.e., when a pressure system is modified, or operating parameters changed.
- Ensure immediate action in response to Inspections containing immediate defects. Where required, ensure that equipment is removed from service until a satisfactory result is achieved.
- Ensure that all scheduled control measures are in place and effective.
- Ensure that pressure systems operate under the conditions detailed in the Risk Assessment.
- Ensure that all planned PPM work and remedial works undertaken is carried out on time, to specification and are recorded.
- Liaise with Nominated Deputies from Schools / University Associated Companies regarding the appropriate access / timing of pressure system works.
- If authorised by the Duty Holder issue permits to work on pressure systems. Ensure contractors are properly inducted prior to the commencement of work.

- Ensure that contractors are instructed on the requirements for isolations, safe systems of work and permits to work where necessary.
- Ensure work is managed in accordance with FS Policy for Safe Systems of Work, and any other FS Policy applicable to it.
- Create work orders and raise notifications for remedial work.
- Appoint suitably Service Providers to undertake the specified maintenance and monitoring as agreed with the Duty Holder. To regularly monitor the performance of the Service Providers through reviews and audits.
- Check any modifications or changes to existing installations are carried out under the site change control process and that all associated drawings, Risk Assessments, and testing schedules are updated.
- Check at suitable intervals that tenants occupying University property are fulfilling their obligations under the PSSR.
- Liaise with Nominated Deputies from Schools / University Associated Companies regarding the appropriate access / timing of pressure system works.
- Take responsibility that all WSE for pressure systems are suitable and compiled by a competent person.
- Take responsibility that all modifications or repairs to a pressure system are reviewed and approved by the competent person/body.
-

Authorised Person – FS Development:

- Ensure that the Project Manager has checked that his designers and installers are complying with the section CONTROL PRINCIPLES “Design and Installation” of this document.
- Following any modification to a pressure system, ensure that the Project Manager has obtained a completed Commissioning Check list from the installer, reviewed, and signed off in conjunction with the designer.
- Ensure that the Project Manager has obtained from the designer completed drawings, risk assessments and testing schedules on all new pressure systems.
- Ensure the Project Manager has obtained Written schemes prior to use of any equipment/installation.
- Ensure that the Project Manager has checked any modifications or changes to existing installations are carried out under the site change control process and that all associated drawings, Risk Assessments, and testing schedules are updated and forwarded to the Nominated Deputy.
- Take responsibility that all WSE for pressure systems are suitable and compiled by a competent person.
- Take responsibility that all modifications or repairs to a pressure system are reviewed and approved by the competent person/body.
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Authorised Person – University Schools & University Associated Companies

- Effectively act as Duty Holder for their School or Associated Company.
- Ensure a register of pressure systems within their area is maintained and notify the duty holder of any changes or additions for the central register to be updated via Appendix 2.0 Asset Movement form
- Carry out audits to ensure all Risk Assessments are in place, completed and comply with current regulations.
- Review the Risk Assessment and control measures whenever there is a reason to suspect that they are no longer valid. i.e., when a pressure system is modified, or operating parameters changed.
- Ensure immediate action in response to Inspections containing immediate defects. Where required, ensure that equipment is removed from service until a satisfactory result is achieved.
- Ensure that pressure systems operate under the conditions detailed in the Risk Assessment.
- Ensure that all statutory inspection and testing is carried out on time, to specification and are recorded.
- Ensure that all planned maintenance work and remedial works undertaken is carried out on time, to specification and are recorded.
- Create work orders and raise notifications for remedial work through Archibus.
- Appoint suitable Service Providers to undertake the specified maintenance and monitoring. To regularly monitor the performance of the Service Providers through reviews and audits.
- Check any modifications or changes to existing installations are carried out under the site change control process and that all associated drawings, Risk Assessments, and testing schedules are updated.
- Ensure that all scheduled control measures are in place and effective.

Inspection Service Provider will:

- Have a suitable and sufficient management structure to ensure professional competence always.
- Ensure that appropriate method statements and task-based risk assessments are carried out prior to commencing works. provide to the Duty Holder, it will be for the Engineering Insurance Provider to satisfy itself of the control of risks and the safe working methods applicable to the inspections.
- Ensure that all their personnel and suppliers i.e., Specialist Contractors, and Consultants are competent, and suitably trained certificated and experienced, and have the necessary equipment to carry out their duties in line with the Written Schemes.
- Be pre-qualified for the activity they are contracted to carry out. Complete work schedules within an agreed time frame.
- Provide day-to-day advice on pressure systems.
- Communicate all inspection and test results to the FS Maintenance team by written communication.
- Provide corrective recommendations immediately, in the event of an out of compliance issue.
- Inform the FS Maintenance if physical access or operations cannot be completed, and document this.
- Provide the University with an agreed annual schedule of engineering plant inspections.
- Prepare and communicate alternative arrangements where original inspection schedules cannot be met.
- 3 days prior to attending site, confirm with the University the intention to visit and inspect, and detail any necessary preparatory works required to facilitate the inspections.
- Where equipment is declared unsafe and has been withdrawn from service, immediately provide details of major defects to be remedied within a specified period, and confirmation of any notification to the local enforcing authority.
- At a period not exceeding 28 days after the inspection, provide the University with a copy of the appropriate insurance inspection certificate(s) as agreed.

The Engineering Insurance Surveyor will: -

- Be a recognised competent person appointed by the Insurance Service Provider who is responsible for conducting engineering plant inspections and issuing an appropriate insurance certificate.
- A competent person having sufficient technical knowledge and experience, which means:
- full understanding of the system to be worked on and practical experience of that class of system; and
- full understanding of the hazards which may arise during the work and the precautions that need to be taken.

FS Helpdesk will:

- Process maintenance works instructions for remedial works on pressure systems controlled by FS.
- Receive and process notifications received by email/Archibus from users of existing, newly purchased, and second-hand equipment.

Health, Safety and Risk Manager will:

- Advise the Duty Holder, in writing, of any statutory changes to the requirements for the management of pressure systems.
- Carry out liaison with the relevant teams in the event of an incident. Provide guidance and direction on general Health and Safety Policy.

Responsibility

The Facilities Services Department is required to retain an up-to-date inventory of all pressure vessels and systems in use within the University. This is achieved by notification via the Asset Movement form, and any changes to the inventory should be communicated to the competent person/body.

Facilities Services should be consulted prior to procurement of any system so that written schemes of examination can be devised and the necessary follow up arrangements can be put in place. For autoclaves, Facilities Services should be consulted to ensure that the necessary building services are in place.

Arrangements for Managing Health and Safety

Purchase and installation of new or pre-owned pressure systems

To comply with the PSSR when purchasing and installing new equipment or pre-owned equipment, it must be ensured that it is suitable for its intended purpose and that it is installed correctly by a competent installer.

This requirement can normally be met by using the appropriate design, construction, and installation standards and/or codes of practice.

Since 2002, most pressure equipment placed on the market has had to meet the requirements of the PED/PE(S)R. For pressure equipment not covered by the PED/PE(S)R, the more general requirements of the PSSR apply. Following BREXIT, the UK now is moving away from PED CE marking and towards PE(S)R UKCA marking. Indeed from 31/12/2021 all applicable pressure equipment sold to the UK market will require UKCA marking.

Regulations 4 to 7 of the PSSR apply to manufacturers, importers, and suppliers of pressure systems. Staff involved in the purchasing of pressure systems should be aware of the requirements of these regulations.

This is particularly important if the pressure system has been pre-owned. In summary these are:

PSSR Regulation 4 Design and construction

This regulation places duties on designers, manufacturers and any person who supplies equipment or a component intended to be part of a pressure system to ensure that it is fit for purpose, to prevent danger.

PSSR Regulation 5 Provision of information and marking.

The aim of this regulation is to ensure that adequate information about any pressure system subject to PSSR is made available to users/owners by designers, suppliers or those who modify or repair equipment. Basic information about pressure vessels should be permanently marked on the vessel, including the Safe Operating Limit.

PSSR Regulation 6 Installation

“The employer of a person who installs a pressure system at work shall ensure that nothing about the way in which it is installed gives rise to danger or otherwise impairs the operation of any protective device or inspection facility.”

PSSR Regulation 7 Safe operating limits

The designer, manufacturer and supplier are responsible for providing adequate information about the system or its component parts. It prohibits the user/owner from operating the system or allowing it to be operated before the safe operating limits have been established.

Safe operation and maintenance of pressure systems equipment

To operate and maintain pressure equipment the following PSSR must be complied with.

PSSR Regulation 8 Written scheme for periodic examination

If a pressure system contains steam at any pressure or has a relevant fluid at a stored pressure above 0.5 bar and has pressure x internal volume of greater than 250 bar litres or more, a written scheme of periodic examination must be in place. The scheme must state the nature and frequency of the examinations and specify any extra measures necessary to prepare the system for safe examination and, where appropriate, must provide for the examination to be carried out before the system is first used.

The HSE's publication [Written Schemes of Examination, Pressure Safety Systems Regulations 2000](#), includes a list of typical pressurised systems that are likely to require a written scheme of examination.

The scheme must be drawn up by a competent person who is normally an engineer appointed by the University's insurer; this can be arranged through Facilities Services. It is important that the user of the pressure system liaises with the engineer so that he or she has clear understanding of how the system will be used and the environment in which it will be used. The presence of substances that may cause corrosion or weakening of the components of the system need to be considered when the scheme is drawn up.

PSSR Regulation 9 Examination in accordance with the written scheme

Line Managers and Senior Managers are responsible for ensuring that examinations in accordance with the written scheme are carried out. These should coincide with the annual maintenance, as the system may need to be stripped down for the inspector to access specific components. Once a pressure system has been registered on Archibus using the Asset Movement Form automatic e-mail reminders will be sent out informing users when maintenance and inspections are due.

PSSR Regulation 10 Action to be taken in case of imminent danger.

Concerns serious defects identified by the competent person whilst carrying out maintenance under the written scheme of examination. Serious defects are those that require immediate attention where there is a risk of imminent failure of the system if immediate repairs are not undertaken or other suitable modifications are not made to the operating conditions. The competent person should immediately issue the user or owner of the equipment a written report identifying the system and detailing defects and arrange to remove the equipment from use, as well as any remedial action required.

PSSR Regulation 12 Maintenance

A suitable maintenance schedule is required in addition to examinations conducted under the [written scheme](#). Suggestions for a suitable maintenance schedule are detailed in the [Approved Code of Practice, L122 Safety of pressure systems, PSSR](#). General requirements for equipment maintenance are also covered in the [Approved Code of Practice, L22 Safe use of work equipment, PUWER](#) for regulation 5 of PUWER.

PSSR Regulation 13 Modification and repair

“The employer of a person who modifies or repairs a pressure system at work shall ensure that nothing about the way in which it is modified or repaired gives rise to danger or otherwise impairs the operation of any protective device or inspection facility.”

Therefore, all maintenance work must be carried out by a competent person.

Modification / repair work completed may require the WSE to be updated to ensure it continuing suitability.

PSSR Regulation 15 Precautions to prevent pressurisation of certain vessels.

The purpose of this regulation is to prevent an unintentional build-up of pressure in a vessel which is designed with a permanent outlet to atmosphere, or to a space where the pressure does not exceed atmospheric pressure. Therefore, the user of a vessel which is constructed in this manner, and which could become a pressure vessel if the outlet were obstructed, shall ensure that the outlet is at all times kept open and free from obstruction when the vessel is in use.

Arrangements for the safe disposal pressure systems and equipment

Pressure systems and/or equipment that are being disposed of shall be deregistered via the [Asset Movement form](#). Equipment must be made safe and if necessary decontaminated and disposed in accordance with the [University Recycling and Waste Management Procedures](#).

6.0 CONTROL PRINCIPLES

6.1 Ownership of Pressure systems

Control of Pressure systems in use in the University will fall into one of three categories:

Facilities Services Infrastructure – Pressure Systems

This relates to permanent and mobile pressure systems which form part of the University infrastructure and standard service provision. It does not include those systems which are introduced by University Schools, University Associated Companies and Tenants for specific activities.

For infrastructure systems Facilities arranges for an independent competent person to conduct inspections and tests.

The competent person will be an Engineering Insurance Surveyor authorised by and acting on behalf of a recognised insurance company inspection service.

The competent person will compile the required documentation (for example a written scheme of examination) necessary to comply with the PSSR requirement, once all relevant information has been supplied by the user/owner.

Facilities are responsible for ensuring that the arrangements are implemented, minimum legal standards are observed and that any remedial action necessary is executed promptly.

University Schools and University Associated Companies controlled pressure systems.

Such systems, whether permanent or temporary include those which are supplied by way of hire, lease, or other arrangements.

Systems which are hired or leased are principally the responsibility of the system owner to comply with the requirements of PSSR.

Those acquired under hire purchase are the responsibility of the 'customer' - normally the University School which has entered into the agreement. For these systems, the University School arranges for an independent competent person to conduct inspections and tests.

Where appropriate the competent person will be the Facilities Services Appointed Engineering Insurance Surveyor authorised by and acting on behalf of a recognised insurance company inspection service.

The competent person will compile the required documentation (for example a written scheme of examination) necessary to comply with the PSSR requirement, once all relevant information has been supplied by the user/owner.

University Schools are responsible for ensuring that the arrangements are implemented, minimum legal standards are observed and that any remedial action necessary is executed promptly.

6.2 Tenants controlled pressure systems.

Such systems, whether permanent or temporary include those which are supplied by way of hire, lease, or other arrangements.

For these systems, the Tenant arranges for an independent competent person to conduct inspections and tests. This information **MUST** be passed through the Asset Movement form via email to FIT@lboro.ac.uk.

Where appropriate the competent person will be an Engineering Insurance Surveyor authorised by and acting on behalf of a recognised insurance company inspection service.

The competent person will identify and supply the additional information (for example a written scheme of examination) and procedures necessary to comply with the PSSR requirement.

Facilities are responsible for ensuring that University Associated Companies and Tenants have arrangements in place to ensure minimum legal standards are observed.

6.3 Design and Installation

All pressure systems shall be designed and manufactured to a suitable Standard and in line with the relevant regulations. The system shall be installed to be safe and without risks to health when used at work. Adequate documentation shall be provided to the user to ensure that the system can be maintained and operated safely and without risk to health.

Designers will ensure that pressure systems comply with the Pressure System Regulations 2000

Designers will ensure that general issues of design, sizing, layout, construction, and commissioning of pressure systems comply with National and International standards

All associated drawings, Risk Assessments and testing schedules are updated by the designer/manufacturer before system handover.

All new systems that require modifications or changes to existing installations should always be carried out under appropriate change control. All modifications or repairs to a pressure system should be reviewed and approved by the competent person/body.

6.4 Risk Management

All risk assessments shall be carried out and approved by authorised persons.

Authorised persons shall be able to demonstrate competence and experience of Risk Assessment. Risk assessments shall identify recommendations according to the following criteria:

Any remedial works that may be required to ensure the system meets the current “Approved Code of Practice & Guidance” legislation.

Identify scheduled maintenance checks/tasks and records that shall be adhered to, to comply with current legislation and reduce the risk to an acceptable level.

Risk assessments should include an up-to-date line diagram of the system.

The risk assessment shall be reviewed whenever there is reason to believe that it is no longer valid (e.g., due to changes in plant, equipment, operating parameters or new information about risks or control measures).

The Risk Assessment and control measures shall be reviewed in any event at least every 2 years. Reviews of the assessment shall be documented and filed with the original Risk Assessment.

6.5 Equipment Identification

All pressure systems components boilers, vessels, air receivers and other relevant plant identified by the Risk Assessment(s) shall be registered and labelled, where possible, with unique “Plant Item Numbers”.

A ‘site register’ shall be maintained of all pressure systems.

6.6 Maintenance

All maintenance shall be carried out in accordance with ACOP and managed in accordance with specific risk assessments. Specific activities and frequency is detailed in the Written Scheme Procedure.

The maintenance and inspection of fixed installations (those that form part of the building pressure system) is organised by Facilities Services.

It remains the responsibility of the University Schools to check that maintenance and inspection of School controlled pressure systems.

6.7 Information, Instruction, Training and Supervision

PSSR Regulation 11 Operation

The user of an installed system and the owner of a mobile system shall provide for any person operating the system adequate and suitable instructions for:

the safe operation of the system; and the action to be taken in the event of any emergency.

There is an additional training requirement under Regulation 9 of **PUWER** to ensure employees are provided with sufficient information, instruction, and training. Senior Managers must ensure that training is provided to all those involved in the operation, maintenance, examination, etc. of pressure systems and equipment.

An outline of the content of the training is given in the [Approved Code of Practice, L122 Safety of pressure systems, PSSR](#).

6.8 Procedures for registration with Facilities Services

University Schools must register existing, newly purchased, and second-hand equipment by email to FIT@lboro.ac.uk Using the Asset Movement form

University Schools should send a copy of the commissioning and testing data to the FS help desk and give the original to the School Nominated Deputy.

On receipt of the completed form, the FS Helpdesk, if necessary, will arrange for the Insurance Inspector to visit the school to make a WSE and inform the User and School Nominated Deputy.

FS will add the item(s) to the University Register for subsequent annual inspections.

If registering newly installed second-hand pressure systems unless the supplier has provided commissioning and testing data, the University School will also need to ask the Helpdesk whether a WSE needs to be drawn up before first use. FS will contact the University Insurance Inspector to determine if this is necessary and to arrange a visit.

All nominated persons require Access to view Loughborough Universities Asset register.

6.9 Incident Reporting and Investigations

If the competent person carrying out an examination under the scheme of examination believes the pressure system or part of the pressure system will give rise to imminent danger unless certain repairs or modifications have been carried out or unless suitable changes to the operating conditions have been made, then, he shall forthwith make a written report to that effect identifying the system and specifying the repairs, modifications or changes concerned and give it to the user/owner. It is the requirement under PSSR Regulation 10 that the competent person shall within 14 days of the completion of the examination send a written report containing the same to the enforcing authority for the premises at which the pressure system is situated. The sequence of events following the discovery of imminent danger by the competent person is given below:

1. The competent person immediately produces a written report identifying the system and specifying the repairs, modifications or changes required and gives it to the user/owner.
2. The user/owner ensures that the system (or, if the report only affects a discrete part of the system, that part) is not operated until the necessary repairs, modifications or changes have been carried out.
3. The competent person sends a written report to the relevant enforcing authority within 14 days.
4. The competent person produces a report of the examination under the written scheme (regulation 9) and sends it to the user/owner within 28 days.
5. Any incident must be reported through the SHE Portal <https://sheasure.net/lboro/Portal/LBU/Index> within 5 days.
6. Reporting of dangerous occurrences shall be carried out in accordance with the Policy on the Reporting of Accidents, Dangerous Occurrences and Occupational Ill Health.
7. Document lessons learnt in accordance with University H&S policy.

7.0 DOCUMENT MANAGEMENT

The duty holder will nominate a deputy duty holder to be responsible for maintaining and updating the written records as required by the ACOP.

- a) any designer's/manufacture's/supplier's documents relating to parts of the system included in the written scheme.
- b) any documents required to be kept by the Pressure Equipment Safety Regulations 2016.
- c) the most recent examination report produced by the competent person under the written scheme of examination.
- d) any agreement or notification relating to postponement of the most recent examination under the written scheme; and
- e) all other reports which contain information relevant to the assessment of matters of safety.

The Inspection Service Provider will maintain an electronic site register of pressure vessels and examination reports.

7.1 Record Keeping

PSSR Regulation 14 Keeping of records

Places a duty on the user of an installed system and the owner of a mobile system to keep maintenance and inspection records. The results of periodic examination are kept on the University insurers data base.

Full information on the recording examination and maintenance is given in the [Approved Code of Practice, L122 Safety of pressure systems, PSSR](#).

Facilities Services stores records of examination and maintenance reports (including examinations carried out under the written scheme) for all pressure systems in operation, owned and maintained by the Facilities Services Department.

Records are stored within Schools and Departments for pressure systems they own and maintain.

Thorough inspection records are stored on the British Engineering Services Register (Portal) which is operated and maintained by the Competent Person (British Engineering Services).

Competency training records for Loughborough University staff operating or maintaining pressure systems are retained by the School, Department or equivalent responsible for providing the training.

7.2 Further Information

To find out how the Pressure Systems Safety Regulations 2000 Regulations apply to your pressure system, see Appendix 1.

To communicate any changes to a Pressure System please use Appendix 2.0 Asset Movement form

External Sources

Health and Safety Executive: [INDG178: Written Schemes of Examination, Pressure Systems Safety Regulations 2000](#).

Health and Safety Executive: [L122: Safety of Pressure Systems, Pressure Systems Safety Regulations 2000](#).

[Approved Code of Practice and guidance](#).

Health and Safety Executive: [L22: Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance](#).

Health and Safety Executive: [ING229: Using Work Equipment Safely, Guidance for the Provision and Use of Work Equipment Regulations 1998](#)

Appendix 1.0

Examples of Pressure Equipment and Decision Tree of which Regulations apply to a givensystem.

- Accumulator, Hydraulic
- Accumulator, hydraulic, nitrogen pressure vessel
- Air receiver in association with some autoclaves, mass spectrometers, EM units
Air / water expansion vessel
- Argon liquid, pressure vessel
- Autoclave – electric, non-self-generating (e.g., part of building steam system or attached to associated boiler)
- Autoclave – electric, self-generating Autoclave – steam jacketed.
- Blow down vessel.
- Calorifier, heated Boiler – canteen type, electric urn Condenser pressure vessel
- Cooling water expansion pressure vessel Critical point dryer pressure vessel Desiccant air dryer
- Heat exchanger
- Helium hydraulic shock chamber tube gun Hot water urn
- Hypersonic gun Nitrogen pressure gun
- Nitrogen pressure vessel
- Pressure parts of packaged refrigeration system Pressurisation unit – softened water booster Receiver, Air - vertical/horizontal/portable Receiver, Air, and water
- Receiver, Air/oil
- Receiver, Carbon dioxide – solid drawn Receiver, Coal gas
- Receiver, Experimental test rig, air Receiver, natural gas
- Receiver, Nitrogen
- Receiver, Sewage ejector/air Receiver, Teaching air Sand/Water pressure vessel
- Steam boiler (electric or gas heated) Steam jacketed kettle.
- Steam jacketed pan Steam oven
- Safety of pressure systems Approved Code of Practice, 2000

Decision Tree of which Regulations apply to a given system



