

# Pressure systems – managing the risks: examination and testing



## Scope

1. This standard applies to all pressure systems used by employees, i.e. staff and post-graduate students, at UCL. Specifically it details the arrangements to ensure that such systems are examined by competent persons in accordance with a Written Scheme of Examination (WSE).
2. Arrangements for all other aspects of the management of pressure systems are detailed in Safety Services guidance (for Departmental systems and equipment) and UCL Estates Standard Operating Procedures (SOPs) for Estates owned systems and equipment.

## Legal requirements

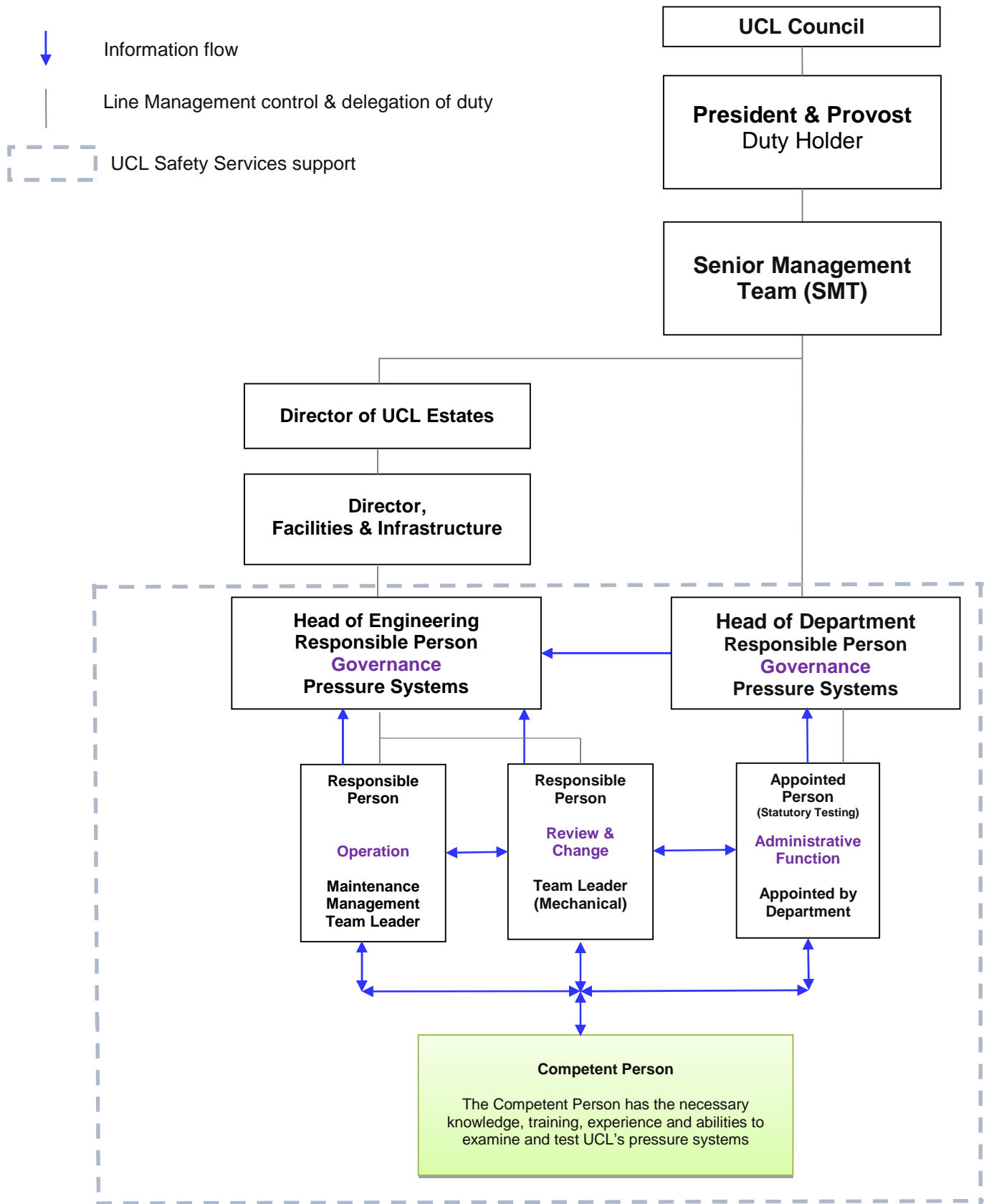
3. The Pressure Systems Safety Regulations 2000 (PSSR) require UCL to:
  - Provide safe and suitable equipment and know the safe operating conditions of that equipment;
  - Fit suitable protective devices and ensure they function correctly;
  - Carry out suitable maintenance;
  - Make provision for appropriate training; and
  - Have the equipment examined by a competent person(s).

## Definitions

4. Pressure systems are defined as:
  - *a system comprising one or more pressure vessels of rigid construction, any associated pipework and protective devices*
  - *the pipework with its protective devices to which a transportable pressure receptacle is, or is intended to be, connected*
  - *a pipeline and its protective devices*
5. A relevant fluid is:
  - *steam at any pressure*
  - *any fluid or mixture of fluids which is at a pressure >0.5 bar above atmospheric*
  - *a gas dissolved under pressure in a solvent (acetylene)*
6. Relevant fluids do not include hydraulic oils. Hydraulic systems, while using high pressures, do not store energy in the system and so are not covered.

## Risks associated with pressure systems

7. The main concern relates to the hazards created by the release of stored energy from system as a result of a failure in the system or one its component parts; hazards include:
  - impact from the blast of an explosion or release of compressed liquid or gas
  - impact from parts of equipment that fail or any flying debris
  - contact with the released liquid or gas, such as steam
  - fire resulting from the escape of flammable liquids or gases



## **Responsibilities**

8. The principal responsibilities for the management of health and safety are stated in the UCL Safety Policy (with line management/delegation of duty shown in the above organogram). Specific responsibilities relating to the management of pressure systems are stated below.

9. In all instances, the term 'Responsible Person', and the associated duties, applies equally to any nominated Deputy formally appointed to act on all occasions when the nominated Responsible Person is unavailable.

### **9.1. Head of Engineering - Responsible Person – Pressure Systems Governance**

The Head of Engineering has managerial responsibility for the governance of pressure systems risk compliance and providing supervision for implementation of the precautions through:

- Managerial responsibility for the UCL Standard and associated SOPs for the management of UCL's pressure systems risks.
- Appointing, in writing, 'Responsible Persons' to be responsible for the day-to-day management of the examination and testing of UCL's pressure systems (as well as other relevant duties).
- Ensuring that the Responsible Persons are aware of their roles and responsibilities and that they are competent to carry them out.

The full details, expectations and requirements of this role are contained within the UCL Pressure Systems SOP, which is controlled by UCL Engineering, Maintenance and Infrastructure.

### **9.2. Responsible Person – Pressure Systems – Operation**

The Responsible Person – Pressure Systems – Operation has been delegated the primary role to act as administrator in the management of pressure systems in accordance with this UCL standard and has managerial responsibility for supervising the implementation of this UCL standard, the SOP, and the management of the pressure systems under the control of UCL Estates.

### **9.3. Responsible Person – Pressure Systems – Review and Change**

The Responsible Person – Pressure Systems - Review and Change has been delegated the managerial responsibility for:

- Reviewing the compliance and performance against this standard.
- Preparing Estates standard operating procedures for pressure systems management on behalf of the Head of Engineering, and periodically audit their implementation.
- Supervising the implementation of this standard and the management of any changes, additions to, or replacements of existing systems, or any new installations to, the pressure systems under the control of UCL Estates.
- Notification of any changes to holdings of pressure systems at UCL to UCL's insurers.

The full details, expectations and requirements of this role are contained within the UCL Pressure Systems Standard Operating Procedure.

### **9.4. UCL Estates (*Capital Projects, Project Officers and Maintenance*)**

UCL Estates (and any consultants they appoint) are responsible for ensuring systems are designed, installed and maintained in accordance with this UCL Standard, the Standard Operating Procedure and relevant documents listed in the references section of this standard. The Responsible Person – Pressure Systems – Review & Change is to approve each stage of any design. No system will be accepted unless the Responsible Person – Pressure Systems – Review & Change has given the final written approval.

### **9.5. Heads of Departments (other than UCL Estates), Responsible Person – Pressure Systems Governance**

Heads of Departments are responsible for identifying, assessing and controlling the risks from those pressure systems used in their department not otherwise managed or owned by UCL

Estates. Where such systems exist, the Head of Department must appoint a person(s); the Appointed Person (Statutory Testing) to prepare and maintain a local inventory of specific items and types of pressure systems to facilitate testing and examination by UCL's competent person. Details of the Appointed Person(s) must be kept in the Responsible Persons Register on RiskNET.

## 9.6. Appointed Person – Statutory Testing

The Appointed Person will maintain a list of specific pressure systems within their department. This information must be notified to the Responsible Person – Pressure Systems – Review and Change at required/directed. Any changes to the list of systems i.e. new systems purchased or systems taken out of use/disposed of, must be notified to the Responsible Person as soon as possible. New systems should be notified in advance of installation so that a WSE can be carried out before first use of the system.

The Appointed Person should liaise with relevant departmental staff to facilitate access, when required, to pressure systems for the purposes of testing and examination by UCL's competent person.

## 9.7. Competent Person

The competent person will be appointed by UCL to:

- Prepare WSE for all new pressure systems;
- Carry out thorough examination and testing of pressure systems in accordance with the WSE;
- Review the WSE following any repairs or modifications to existing pressure systems; and
- Issue reports to UCL following preparation of the initial WSE and subsequent examination and testing of pressure systems.

## Records

10. The Responsible Person – Pressure Systems - Operation will maintain an inventory of all UCL pressure systems and keep records to assist the competent person in the examination under the written scheme. The following records will be kept:

- any designer's/manufacture's/supplier's documents relating to parts of the system included in the written scheme;
- any documents required to be kept by Pressure Equipment Regulations (these regulations relate to minimum standards for such systems to be placed on the market);
- the most recent examination report produced by the competent person under the written scheme of examination;
- any agreement or notification relating to postponement of the most recent examination under the written scheme; and
- all other reports which contain information relevant to the assessment of matters of safety.

## Monitoring & Review

11. This standard shall be reviewed at least annually to ensure it remains up to date.

## References

1. *Safety of pressure systems - Pressure Systems Safety Regulations 2000: Approved Code of Practice and guidance* L122 HSE Books <http://www.hse.gov.uk/pubns/priced/l122.pdf>
2. *The Pressure Equipment Regulations 1999* SI 1999/2001 The Stationery Office [www.legislation.co.uk](http://www.legislation.co.uk)

Safety Services Reference(s):

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