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1 SCOPE

Safety Guide 46 Part 1 Management and Safe Use of Work Equipment describes the management systems required to purchase, use and maintain all types of equipment used at work, including pressure systems. This Guide, Part 2, gives more detail on the specific requirements that apply to pressure systems. Pressure systems encompass all systems containing gases, liquids and powders under pressure. It covers all endothermic as well as exothermic energy systems where the containment of the material allows pressure to build to more than 0.5 bar above atmospheric pressure. Typical pressure systems include:

- Autoclaves
- Pressure gauges and indicators
- Air receivers
- Valves
- Air compressors
- Pipework and hoses
- Heat exchangers
- Gas loaded hydraulic accumulators
- Pressure cookers
- Steam traps and filters
- Fixed LPG storage systems supplying fuel for heating
- Refrigeration plant (excluding fridges and freezers)
- Pressurised hot water systems that provide domestic or process hot water

NB This does not include gas cylinders not connected to other equipment or pipe work – these are subject to separate legislation.

Safety Guide 46 Part 3 Gas Systems, has additional information on gas safety.

Equipment and systems containing a fluid or gas under pressure, such as found in the University science schools and in building systems, can cause serious property damage and death or injury to people if the contents are released unintentionally. The principal causes of incidents are poor design, installation and maintenance, but also operator error due to poor training and supervision. This Guide sets out simple steps to minimise the risks when working with pressure systems.

2 RESPONSIBILITIES

2.1 Infrastructure and services

Facilities Management Directorate (FMD) is responsible for systems that are integral to the structure of the building and supply of services, such as the steam main and heating systems, boilers in plant rooms, refrigeration plant, and compressed air. Responsibilities include:

- arrangements for maintenance, inspection, thorough examination and repair;
- specification of new systems that are supplied through FMD;

2.2 Equipment owned by Schools/Units

Schools/Units are responsible for the pressure systems that they may design, manufacture, purchase, install and use. This includes arrangements for written schemes of examination and inspection where required, maintenance, and repair. Typical examples include autoclaves, small experimental apparatus, and catering and process equipment.

Guidance:

Schools will normally require expert assistance to prepare written schemes of examination. This may be undertaken by the University engineering inspector (

Schools/Directorates/Departments should check that items are not exempt under the regulations (see *Safety of pressure systems. Pressure Systems Safety Regulations 2000. Approved Code of Practice*). If necessary, seek advice from other sources, such as in-house engineering staff, Health and Safety Services, or a specialist engineering inspector.

It is the user's responsibility under the Regulations to ensure that the content of the written scheme is reviewed at appropriate intervals by a competent person to determine if it remains suitable, but the competent person should be in a position to give advice on this aspect.

4.3 Exclusions from the requirement for a written scheme of examination

HSE guidance states that written schemes of examination are not required for the regulators, pressure gauges, hoses, torches and other components that form part of conventional gas welding sets (portable, twin cylinder, oxy-acetylene or oxy-propane sets used for welding, cutting and burning).

4.3.1 Exemptions for research

Schedule 1 Part 1 of PSSR sets out exemptions from parts of the Regulations. This includes exemptions where:

- the pressure system is the subject of a research experiment, or
- the pressure system comprises temporary apparatus being used in a research experiment,
- and**
- it is not reasonably practicable to comply with the relevant Regulations.

Whilst research may require equipment to be designed from new, **once the design is brought into regular use it must have a written scheme of examination**. Where there is any doubt, further advice must be sought from Health and Safety Services (H&SS).

4.3.2 Very small systems

Very small vessels, where the combination of the internal volume and pressure of the vessel is less than 250 bar litres are exempt from some parts of the Regulations, including the need for a written scheme of examination **UNLESS** the fluid in question is steam. However they must conform to other parts of the regulations, such as the need to maintain and inspect.

4.4 What is an insurance inspection?

Insurance companies may offer an inspection service for equipment such as pressure systems, and may insist on an inspection as part of the insurance requirements. However, an insurance inspection is not a written scheme of examination. Inspection in accordance with the written scheme may be combined with an annual insurance inspection, if one is undertaken.

4.5 Record keeping

The owning department should have access to all records relevant to the system, including manufacturer's operating instructions, any written scheme of examination, inspection and test reports and maintenance records.

Appendix 2:

VERSION	KEEPER	REVIEWED	APPROVED BY	APPROVAL DATE
X.X	H&S	Every four years	XXXXX	XX/XX/XX
X.X	H&S	Annually	XXXXX	XX/XX/XX