For: Heads of all Establishments/Settings
OCC Managers
Governors/Management Committees
Trade Union Safety Representatives
Employee Notice Boards
Intranet

Pressure System Safety

LEGISLATION
Pressure Systems Safety Regulations 2000

Purpose
The Pressure Systems Safety regulations aim to prevent serious injury from the hazards of stored energy as a result of the failure of a Pressure System or one of its component parts. The regulations are concerned with steam at any pressure and gases and fluids which exert a pressure in excess of 0.5 bar above atmospheric pressure or hot water above 110^{o}C.

Causes of accidents:
- Poor equipment/system design.
- Poor maintenance of equipment.
- Unsafe systems of work.
- Operator error.
- Poor training/supervision.
- Bad installation.
- Inadequate repairs or modifications.

What is a Pressure System?
A 'Pressure System' **is a system comprising of one or more pressure vessels of rigid construction and associated pipe-work and protective devices**, e.g. boiler, steam engines, air receivers, pressure gauges, pipe-work and protective devices.

Examples:
- Boilers and steam heating systems.
- Pressurised plant and piping.
- Air compressor sets (fixed and portable).
- Pressure cookers, autoclaves and retorts.
- Heat exchangers and refrigeration plant.
- Valves, steam traps and filters.

- Pipe-work and hoses.
- Pressure gauges and level indicators.
- Calorifiers, water heaters.
- Air receivers.

What are the main hazards?

- Impact from blast of explosion or release of compresses gas/fluid.
- Impact from equipment parts that fail or flying debris such as glass.
- Contact with released gas/fluid such as steam/chemicals.
- Fire resulting from escape of flammable liquids.

What information do I need?

There is a duty on designers, manufacturers, suppliers and importers, etc., of Pressure Systems for use at work to provide you with sufficient written information as may be reasonably foreseeable as required by the user/owner or any other person.

What should I see?

New equipment should display a CE mark and be issued with a Certificate of Conformity. (N.B. this is not a safety standard) The Pressure Systems must be labelled/identified with the following:

- Manufacturers name.
- Serial number.
- Date of manufacturer.
- Standard to which built.
- Maximum allowable pressure.
- Design temperature.

It is a legal offence to remove or falsify any such markings.

If installing new equipment, ensure that it is suitable for its intended purpose and that it is installed correctly.

Who can install such a system?

Installation of Pressure System must be undertaken by a competent contractor.

How do I use it?

Safe Operating Limits

No person may operate Pressure Systems or allow it to be operated unless the safe operating limits have been established.

NB: ‘Safe Operating Limits’ are operating limits in relation to temperature and pressure including an acceptable safety margin above which there is an increasing risk of system failure.

Testing

A written scheme of examination is required for most pressure systems though exemptions apply. A suitable scheme used for the periodic examination of prescribed

components if installed or mobile Pressure Systems must be drawn up, or be certified as being suitable, by a competent person (the OCC insurer) before the system can operated.

Who can examine the system?
The users of installed systems and owners of mobile systems must ensure that the parts of the Pressure Systems included in the written scheme of examination are examined by a competent person (OCC insurer) in accordance with the details laid down in the scheme, with regard to the nature, frequency, preparation for safe examination etc.

OCC Property & Facilities Consultant will arrange for safety valves on Pressure Systems, associated with heating plant to be tested annually from the non-delegated health and safety budget.

NB: The engineer will give an immediate report in the case of imminent danger to the Head of Establishment/Setting.

How can we operate and maintain safely?
Persons operating Pressure Systems must be provided with adequate and suitable instruction by the user/owner on:

- The safe operation of the Pressure Systems.
- Emergency actions/procedures in accordance with the instructions.

What do I need to know?
Operating conditions

- Know what fluids/gas is being contained, stored, processed, i.e. is it toxic/flammable?
- Know process conditions i.e. pressures and temperatures.
- Know safe-operating limits of system and equipment linked to or affected by it.
- Ensure a set of operating instructions for all equipment and for control of the whole system, including emergencies is available.
- Ensure appropriate employees have access to instructions and are properly trained in the operation and use of the equipment or system.
- Ensure suitable protective devices fitted to vessels or pipe-work, e.g. pressure relief valves, fire relief valves, pressure switches.
- Ensure protective devices have been adjusted to correct settings.

All pressure equipment and systems must be maintained following a planned maintenance programme for the system as a whole.

Who can modify and repair the system?
Modifications and repairs can only be carried out by a competent contractor.

What records do I have to keep on site?
Users are required to keep copies of the last examination report for the Pressure Systems, etc. (see Annex 1) and copies of other documents which relate to the written scheme. In addition, previous reports containing information which relates to the assessment as to whether the Pressure Systems are safe to operate and confirmation that any modifications or repairs were carried out safely are also required to be kept. The documents must be kept at the same site as the installed Pressure Systems.

What training is required?
Ensure all employees who use Pressure Systems have had adequate information, instruction and training on how to use such equipment safely.

What do I have to do?
Inform the Insurance team if you are about to purchase any of these systems so that appropriate insurance cover and inspections can be arranged.

For further information and advice:

	email and web addresses	☎
Specialist:		
Insurance	**email:insurance@oxfordshire.gov.uk**	**01865 797321**
General:		
Health, Safety & Wellbeing Team	**email:** healthandsafetyhelp@oxfordshire.gov.uk **web address:** http://intranet.oxfordshire.gov.uk/links/intranet/healthandsafety	**Helpdesk 01865 797222**

ZURICH

THE PRESSURE SYSTEMS SAFETY REGULATIONS 2000
REPORT OF WORKING EXAMINATION OF A BOILER/PRESSURE VESSEL AND ASSOCIATED PROTECTIVE DEVICES

Report No: 11711263/1

Policy / Contract No: QLA18AC040013010 Schedule: B0041 ES Item No: 02

Policy / Contract Name: OXFORDSHIRE COUNTY COUNCIL

1. ALL SYSTEMS: (a) Name and Address of User (Installed systems), Owner (Mobile systems) or Lessor (Leased / Hired systems)	OXFORDSHIRE COUNTY COUNCIL OXFORDSHIRE
(b) Name of User and address at which system is installed (Leased system), or located (Mobile system) if different from (a) above	
2. WRITTEN SCHEME DESIGNATION/NUMBER	ZM-604176.
3. SYSTEM AND PART IDENTIFICATION: (a) Identification/designation of system / Situation	Steam. Science Prep. Room.
(b) Description of part within system and identification where applicable	Model Steam Engine Boiler -Gas fired.
4. HISTORY: (a) Name of Manufacturer and date	Cheddar Models. Unknown.
(b) Standard or specification of manufacture	Not ascertained.
(c) Date of last hydraulic test & pressure applied	Not ascertained.
(d) Date and detail of any relevant NDE including details of any datum points where applicable	Not available.
5. PREPARATION: (a) What parts were inaccessible?	Internal parts
6. EXAMINATION: (a) Detail the type of examination and tests carried out	External examination with functional test of protective devices
(b) External condition of vessel and result of examination	No defect apparent - result satisfactory.
(c) Have all of the associated protective devices / fittings listed in the Written Scheme been examined/tested?	Yes.
(d) State the condition / working order of the protective devices / fittings and examination result	In functional order - result satisfactory.
7. REPAIRS: (a) Detail any repairs required and the date by which they should be completed	None required.
(b) Details of any alterations to safe operating limits and date to be made by	None required.
8. SAFE OPERATING LIMITS:	45 psig.
9. OTHER OBSERVATIONS:	None.
10. WRITTEN SCHEME REVIEW: Are any changes required to the Written Scheme? If yes, give details / reasons	No.
11. AUTHENTICATION: On behalf of competent person: ZURICH ENGINEERING	ENGINEER SURVEYOR Philip Robinson Date of Authentication: 11/05/2000 Date of Examination: 10/05/2000
12. Date by which next working examination should be completed	10/07/2001

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