

The Newcastle upon Tyne Hospitals NHS Foundation Trust

The Management and Control of Pressure Systems Policy

Effective: May 2009

Review: May 2011

1. Policy Statement

It is the policy of the Newcastle upon Tyne Hospitals NHS Foundation Trust to provide a safe and healthy environment for all its patients, staff and visitors.

This Policy document is provided to ensure that all staff involved with pressure systems understand management and individual responsibilities and methods employed by the Trust, ensuring safe operational practice of pressure systems.

The document details operational requirements and information required in the event of emergency.

The Trust, in recognition of its statutory duties endeavours to comply with the Pressure Safety Regulations 2000, good practice and guidance.

2. Aim and Scope

Failure of a pressure system can lead to serious injury or Fatalities. Consolidation of previous legislation evolved into the Pressure Systems Safety Regulations 2000, which deals with the risks created by a release of stored energy should the system fail and details the measures that should be taken to prevent failures and reduce risks.

The Pressure Systems Safety Regulations 2000 applies to all plant/systems which contain a relevant fluid. A relevant fluid is defined as a steam or gas under pressure and liquids under pressure, which become gases upon release to the atmosphere, at a pressure greater than 0.5 bar (7 psi) above atmospheric (except for steam). Certain 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. Where the relevant fluid is steam, all the regulations apply, irrespective of the vessel pressure.

The Trust's external Competent Person(s) (Zurich Risk Services) will ultimately decide which systems require inspection under a written scheme.

Examples of pressure systems and equipment are:-

- boilers and steam heating systems
- pressurised process plant and piping
- compressed air systems (fixed and portable)
- pressure cookers, autoclaves and retorts
- heat exchangers and refrigeration plant
- valves, steam traps and filter

- pipework and hoses
- pressure gauges and level indicators
- safety valves on calorifiers

3. The Estate

For the purposes of this Policy, the estate comprises all the premises currently occupied, owned and maintained by the Trust.

The Trust's leased premises on the Royal Victoria Infirmary and Freeman Hospital sites which are not maintained by the Trust's Estates Department, are the responsibility of the IFM Company (Hospital site) or Dalkia (Energy Centre) who will maintain pressure systems and comply with all relevant legislation, ensuring robust monitoring and the recording of information.

4. Functional Responsibilities

Key personnel have functional and professional responsibilities for ensuring that the Trust's pressure systems are managed and operated safely.

The Trust, as an employer has accepted and ensures the fulfilment of all its statutory duties to its employees and others who may use or access its premises.

Employees are required to fulfil their statutory duties and use correctly all work items provided by the Trust, in accordance with their training and the instructions they receive to enable them to use the items safely.

They must co-operate with the Trust to enable it to comply with statutory duties for health and safety.

The Trust, or those they appoint to assist them with health and safety matters, therefore must be informed without delay of any work situation within the Trust which might present a serious and imminent danger. Whether the danger could be to the employee concerned or, if it results from the employee's work, to others.

Employees must also notify any shortcomings in the health and safety arrangements, even when no immediate danger exists, so that the Trust in pursuit of their duties under the HSWA and other statutory provisions can take such remedial action as may be needed.

5. Responsibility and Roles

5.1 Competent Person

The term "Competent Person" refers not to the individual employee who carries out the duties under the Regulations, but to the body which employs the person charged with those duties. Thus, the definition of Competent Person makes it clear that the

legal duty to comply rests with a Competent Person's employer and not with an individual.

The Trust employs a Risk Services company to undertake the role of Competent Person. His/her role has two distinct functions;

- (a) drawing up and certifying schemes of examination (Regulation 8)
- (b) carrying out examinations under the scheme (Regulation 9)

Although separate guidance is given on these functions, this does not mean that they have to be carried out by different Competent persons.

From time to time, the Trust (User/Owner) may seek advice from a Competent Person on other matters relating to the Regulations. In such circumstances, a Competent Person would be acting solely as an adviser, rather than a Competent Person as defined.

It is the responsibility of the Trust (User/Owner) to select a competent person capable of carrying out the duties in a proper manner with sufficient expertise in a particular type of system. A Competent Person, who has available a team of employees with the necessary breadth of knowledge and expertise, should be chosen.

5.2 Trust Staff

Only Trust staff with system knowledge, experience and suitable training will be allowed to operate and maintain pressure systems to ensure systems are operated safely within:

- (a) safe operating limits of the plant/equipment
- (b) the Written Scheme, drawn up and audited by the Competent Person.

It is essential for the Trust (User/Owner of Pressure systems) to inform the Competent Person(s) of any changes to systems to allow update of the Written Scheme.

Trained staff will assist the competent person, while on site undertaking testing and examination of pressure systems.

Any remedial actions, upgrades and./or repairs will be undertaken by the Trust.

6. Legal Requirements

The Regulations require the Trust to:

- establish the "safe operating limits" of the plant
- have suitable Written Scheme drawn up or certified by a competent person for the examination at appropriate intervals of:
 - most pressure vessels

- all safety devices
- any pipe work which is potentially dangerous

6.1 Safe Operating Limits

Regulation 7 prohibits the use of systems unless the User of an installed system and the owner of a mobile system has determined safe operating limits (SOLs).

6.2 Written Scheme of Examination

The Trust's Written Scheme of Examination is a working document produced and maintained by Zurich Risk Services. The web-based document allows the Trust access at any time to system information.

Sites covered are Freeman Hospital, Newcastle General Hospital, Royal Victoria Infirmary and Walkergate Hospital.

To gain access, a senior member of the Estates Staff should be contacted.

General requirements of the Written Scheme:

6.3 Introduction

The Written Scheme of Examination has been produced to satisfy Regulation 8 of the Pressure Systems Safety Regulations, 2000. Responsibility under this regulation may be summarised as follows

- the User/Owner ensures the scope of the scheme is appropriate, i.e. which parts of the system are covered (with advice, if necessary, from a suitably experienced adviser); and
- the Competent Person specifies the nature and frequency of examinations and any special measures needed to prepare the system for safe examination.

6.4 Format of the Scheme

The Written Scheme comprises three parts.

Part 1 contains the general and specific requirements for initial examination of pressure systems, repair and modification, review and scope of the scheme.

Part 2 contains the examination and preparation requirements for parts of the system.

Part 3 details the parts of the pressure system which are to be examined, their safe operating limits, the examination periodicities, the types of examination required and repair/modification history (where available).

6.5 Preparation for examination

It is the responsibility of the User and of an installed system and the Owner of a mobile system to prepare the system for examination.

For a thorough examination, the vessel shall be isolated from the pressure system by closed valves, or be disconnected from the pressure system prior to the examination. Alternatively, the entire pressure system shall be depressurised and taken out of service.

The inspection covers shall be removed and, where necessary, ladders and/or platforms should be provided to ensure the safety of the engineers involved in the examinations.

Precautions for entry into confined spaces shall be in accordance with the requirements of the Confined Space Regulations 1997.

For a working examination, the User should bring the pressure systems to normal working pressure and provide personnel to carry out functional tests of protective devices as required by the Competent Person making the examination.

6.6 Nature of Examination

6.6.1 Initial examination

The initial examination is an examination carried out by the Competent Person before any pressure system or part of the pressure system is used for the first time. This examination may be a thorough examination and/or a working examination, dependent upon the pedigree of the pressure system and documentation supplied.

6.6.2 Thorough examination

The thorough examination is an examination which comprises an internal and external examination of parts of the pressure system when out of service.

6.6.3 Working examination

The working examination is carried out with the pressure system at operating pressure and takes the form of an external visual examination supplemented by the witnessing of functional tests of the protective devices as required by the Competent Person.

6.6.4 Supporting tests

The Competent Person may, at his discretion, include all or any of the following tests to support his examination:-

- Hammer testing
- Drilling
- Proving a clear waterway through tubes
- Withdrawal of sample tubes for determination of thickness
- Examination, testing or measurement by means of non-destructive testing including radiographic, ultrasonic, magnetic particle, penetrant, replica macrographic testing, hardness testing, etc.

6.7 Initial examination and documentation

6.7.1 New pressure vessels

Prior to new pressure vessels being used for the first time, the vessel documentation shall be scrutinised by the Competent Person to determine the extent of initial examination.

A thorough examination followed by a working examination may be required by the Competent Person where the vessel has not been subjected to independent inspection during construction or where the documentation is inadequate.

A working examination only may be required by the Competent Person where the vessel has been subjected to independent inspection during manufacture and the documentation is in order.

The Competent Person may also require only a working examination where the vessel is CE marked and manufactured to either the Simple Pressure Vessel Directive or the Pressure Equipment Directive. This decision shall take into account the results of the conformity assessment to which the vessel was subjected before it was placed on the market and shall be subject to the provision of adequate documentation.

6.7.2 New pipe work

Pipe work subject to a duty such that its mechanical integrity is liable to be importantly reduced by corrosion, erosion, fatigue or any other factors and in such a location that failure would give rise to danger, shall be subject to a working examination prior to service.

Drawings and other technical information (.e.g. CE declaration of conformity, material certificates, weld procedures and welder qualifications) appertaining to the construction and testing of the pipework should be provided for review by the Competent Person.

Where the documentation is not considered adequate, then parts of the pipework shall be subjected to visual examination and non-destructive testing,

where appropriate, to determine the pipework thickness and the quality of welding.

6.7.3 New protective devices

The documentation for the devices should be scrutinised by the Competent Person. The documentation should include certification to confirm that the devices are suitable for the pressure, temperature and environment, and to verify that the devices have been calibrated and will operate at the required settings.

It should be demonstrated to the satisfaction of the Competent Person that the protective devices will function correctly.

6.7.4 Second hand pressure equipment

Documentation shall be provided similar to that required for new items.

Prior to these items being used for the first time, the documentation shall be scrutinised by the Competent Person to determine the extent of initial examination.

The extent of documentation and the results of the examination should be considered in assessing the suitability of the item for its intended use, and in some circumstances it may be necessary to take material for analysis to establish its grade and quality, and to carry out non-destructive testing to justify the required safe operating limits.

6.8 Repair and modification

In circumstances where the repair or modification is of parts of the pressure system that require to be examined by the Competent Person and such repair/modification could affect the functioning of any protective device or the structural integrity of:

- the pressure retaining parts of the system
- attachments welded directly to the pressure retaining parts of the system
- vessel or pipework supports

then details of the proposed repairs or modifications should be submitted to the Competent Person for approval prior to commencement of the work.

In the above cases, examinations and/or documentation review shall be carried out pre and/or post repair/modification as required by the Competent Person, to establish that the work is or has been carried out to an appropriate standard.

6.9 Third party documentation

Documentation produced by third parties concerning examination, non-destructive testing, special tests, confirmation of settings/calibration must be from an organisation acceptable to the Competent Person.

6.10 Review of the Written Scheme of Examination

The User/Owner should ensure that this Written Scheme of Examinations reviewed by a Competent Person whenever there are repairs, modifications, additions to the system or changes in the condition of use of the system.

In addition, the content of this written scheme should be reviewed at the time of an examination of an item by the Competent Person carrying out the examination insofar as the scheme applies to the item being examined. Any required amendments should be identified on the examination report and implemented by the User.

6.11 Pressure systems/parts of pressure systems not included in the scope of the Written Scheme

In accordance with the Pressure Systems Safety Regulations 2000, the responsibility for ensuring the scope of the Written Scheme of examination is suitable rests with the User/Owner. If the User/Owner is aware of pressuring systems/parts of pressure systems that are not included in Written Scheme of Examination, or if items are added or deleted from the listed system(s) in this written scheme, or additional pressure systems are installed, then this written scheme may need to be revised. In such cases the User/Owner should contact our main office or our District Engineer Surveyor to advise.

6.11.1 General exclusions

Unless specifically included, the following have been excluded from the scope of the Written Scheme (i.e. items not requiring examination by a Competent Person):

- Pressure vessels in a system containing a relevant fluid other than steam where the product of the pressure in bar and internal volume in litres is less than 250 bar litres and where the transfer of pressure from other parts of the system is restricted by physical means.
- Steam pipe work, where:
 - its mechanical integrity is not considered liable to be significantly reduced by corrosion, erosion, fatigue or other factor, or
 - failure resulting in the sudden release of stored energy would not give rise to danger, i.e. the maximum pressure(safety valve setting) multiplied by nominal bore is less than 750 bar.mm other than where persons are continuously in close proximity to the pipework and could be subject to scalding should failure occur
- Other relevant fluid pipework where:
 - its mechanical integrity is not considered liable to be significantly reduced by corrosion, erosion, fatigue or other factor, or

- failure resulting in the sudden release of stored energy would not give rise to danger, i.e. the maximum pressure (safety valve setting) multiplied by the nominal bore is less than 1000 bar.mm

6.11.2 Maintenance of pressure systems

Examination by a competent person should not be considered by the User/Owner as a substitute for adequate maintenance, such maintenance is required regardless of whether an item is included in a Written Scheme of Examination.

7. Health and Safety

The following non-exhaustive legislative and guidance documents are utilised by the Trust as a reference source to comply with major health and safety legislation and safe use of pressure systems:

- Health and Safety at Work etc Act 1974 (HSW Act)
- Management of Health and Safety at Work Regulations 1999 (MHSWR)
- Workplace (Health and Safety) Regulations 1992 (WHSR)
- Provision and use of Work Equipment Regulations 1998 (POWER)
- Confined Spaces Regulations 1997
- Pipeline Safety Regulations 1996 (PSR)
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)
- Pressure Systems Safety Regulations 2000 inc. Written Scheme of Examination.

8. Monitoring

Compliance with the policy will be monitored by the Senior Estates Officer – Specialist Services, who will report annually to the Trust's Maintenance Manager.

Any dangerous occurrences will be reported to the Trust's Health and safety department and the HSE as required.

Author: Senior Estates Officer Specialist Services

THE NEWCASTLE UPON TYNE HOSPITALS NHS FOUNDATION TRUST
IMPACT ASSESSMENT – SCREENING FORM A

This form must be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval.

Policy Title:	Policy Management and Control of Pressure Systems	Policy Author:	Ian Clayton
		Yes/No?	You must provide evidence to support your response:
1.	Does the policy/guidance affect one group less or more favourably than another on the basis of:		I believe this policy document does not discriminate against any individual either employed by the Trust or as a visitor
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
	• Disability – learning difficulties, physical disability, sensory impairment and mental health problems.	No	
2.	Is there any evidence that some groups are affected differently?	No	
3.	If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?	N/A	
4(a).	Is the impact of the policy/guidance likely to be negative? <i>(If "yes", please answer sections 4(b) to 4(d)).</i>	No	
4(b).	If so can the impact be avoided?	N/A	
4(c).	What alternatives are there to achieving the policy/guidance without the impact?	N/A	
4(d).	Can we reduce the impact by taking different action?	N/A	

Comments:	Action Plan due (or Not Applicable):
	Not Applicable

Name and Designation of Person responsible for completion of this form: Ian Clayton – Senior Estates Officer Specialist Services..... Date:.....05/06/09

Names & Designations of those involved in the impact assessment screening process: The policy document was issued for comment to the following departments
 - Estates; External assessor; Health and Safety; Risk management

(If any reader of this procedural document identifies a potential discriminatory impact that has not been identified on this form, please refer to the Policy Author identified above, together with any suggestions for the actions required to avoid/reduce this impact.)