Edinburgh Napier University
Working Safely in Confined Spaces Policy

Confined Spaces Policy	**Date of Issue: May 2015**
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Policy Statement

The policy of Edinburgh Napier University is to provide and maintain safe and healthy working conditions, equipment and systems of work for all staff, students and others, and to provide such resources, information, training and supervision as needed for this purpose.

The University will provide resource and maintain appropriate management systems, systems of work and equipment to ensure that confined spaces risks to all staff, students and others are controlled. Suitable information, instruction, training and supervision will be provided to all those involved with work in confined spaces .

The University will adopt the principles of control as set out in the Confined Spaces Regulations 1997

The management of confined spaces risk will be a continual commitment by the University and will involve regular monitoring and progress meetings, a risk assessment programme, monitoring, inspection and record keeping.

This policy is formally accepted by the University.

The University will do all that is reasonably practicable to comply with its requirements, and will make the necessary resource available.

Signed

CONTENTS

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Policy

1.0 Executive Summary

Work in confined spaces causes about 15 deaths each year in the UK. A confined space is somewhere which is substantially enclosed (so that one couldn't escape easily), and where there is significant possibility for serious injury by asphyxiation, poisoning or drowning. Property & Facilities staff and Contractors might have to enter confined spaces such as:- drains and sewers; tunnels; boilers; and undercrofts.

The Confined Spaces Regulations 1997 obliges Edinburgh Napier University to ensure that entry to confined spaces is prevented and restricted to those occasions where the work cannot be easily done any other way. Before entry, **a risk assessment** must be carried out. This will determine the 'safe system of work' and appropriate emergency and rescue arrangements.

Since it is Edinburgh Napier University's policy to comply fully with such duties, Property & Facilities must ensure that the requirements of the Regulations are discharged, and that the policy on confined spaces is incorporated into its local safety statements. Individual staff who organize, arrange or lead such work must acquaint themselves with, and act upon, the requirements of the local safety statement in force in their department. The effectiveness of these arrangements will be monitored periodically by the Director of Property & Facilities.

2.0 Introduction

For the Edinburgh Napier University, the Health and Safety at Work etc. Act 1974 (the 'Act') is central, and demands that our activities avoid injury, or hurt to its staff, students and visitors. These duties were enlarged in 1992 by the Management of Health and Safety at Work Regulations (known colloquially as the 'Management Regulations'). The Management Regulations require that the risks arising from work are actively managed in a logical, effective and measurable manner. The best 'tool' for this is risk assessment, and this is nowadays routinely found as an obligation on employers in all new safety law. Subsidiary 'topic' Regulations tell employers to focus on a particular safety issue, and deal with it in a particular way.

The Confined Spaces Regulations 1997 (the "Regulations") are, in part, the result of a review of current safety legislation especially those involving a high risk of death or injury. Much of the 'confined spaces' work in Edinburgh Napier University is, of course, maintenance work performed by personnel from Property & Facilities (either Edinburgh Napier University employees themselves or employees of outside contractors brought in to work for us). For some of this work, all the precautions described in this document are necessary.

The Confined Spaces Regulations 1997 place substantial duties on the University to prevent or safely control entry into, or work within, confined spaces. In law a confined space is defined by both the confining nature of the space and the possibility of the atmosphere becoming unbreathable. Having identified where such situations could occur, it is vital to prevent unnecessary entry into confined spaces: if the desired result can be achieved without entry, then this must be what happens. If entry is unavoidable, then risks to those entering must be rigorously

guarded against by a combination of technical and managerial procedures, up to and including a full formal permit-to-work system. The strategy for the control of risks must be the result of a risk assessment.

Property & Facilities are delegated the following duties for confined space:-

- Ensure that such activities are planned and managed in compliance with the Confined Spaces Regulations 1997, and are carried on safely in practice;

- Ensure that the departmental policy and procedures on entry into and work within confined spaces form part of their 'local safety statement', and in particular to ensure that suitable and sufficient risk assessments are completed, a process which ought to entail a full description of the proposed control strategy for the work envisaged;

It is the duty of all staff to observe these requirements and act upon its instructions.

2.1 What is a confined Space?

The term confined space means much more than simply 'a tiny volume where you might get stuck'! There is a legal definition given in Regulation 1(2):- "'Confined Space' means any place, including any chamber, tank, vat, silo, pit, trench, pipe, sewer, flue, well or other similar space which by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk." The concept of a confined space in law is therefore two fold :-

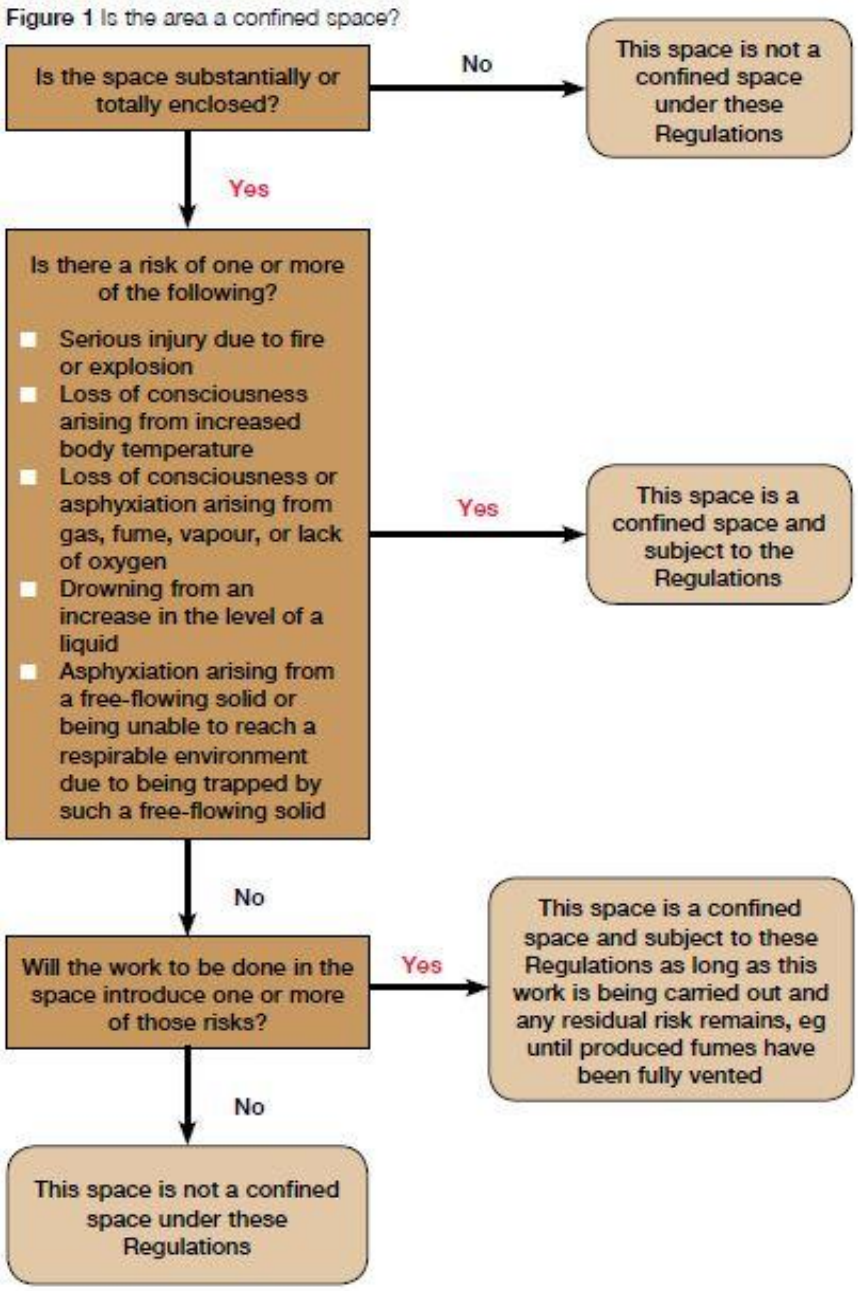
(a) it must be a space which is substantially (though not always entirely) enclosed; and
(b) one or more of the specified risks must be present or reasonably foreseeable.

There is a definition of the term a 'specified risk' given in the Regulations too:-

(a) serious injury to any person at work arising from a fire or explosion;
(b) the loss of consciousness of any person at work arising from an increase in body temperature;
(c) *the loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour or the lack of oxygen;*
(d) the drowning of any person at work arising from an increase in the level of liquid; or
(e) the asphyxiation of any person at work arising from a free flowing solid or the inability to reach a respirable environment due to entrapment by a free flowing solid;

Thus, in the Regulations the confined space has two defining features, enclosure to a substantial degree, and the significant possibility of being drowned, injured in a fire or explosion, or asphyxiated or poisoned, or any combination of these.

Figure 1 can help you with the decision-making process. It describes the specified risks – there must be at least one of these present or reasonably foreseeable to make any enclosed space a confined space within these Regulations.



Source: HSE document ‘safe work in confined spaces’

2.2 Hazards

The hazards of working in a confined space arise through a combination of the nature of the working space itself, and the possible presence of substances or conditions which, taken together, increase the risk to workers' health and safety. Remember that a serious risk can be introduced to a substantially enclosed space that otherwise would be safe. The most likely hazards (but not the only ones) are the following:-

2.2.1 Oxygen deficiency

Below the usual level of about 20.9%, people become less able to function properly and eventually lose consciousness. Oxygen deficiency can be caused by biological or chemical processes consuming the oxygen in an enclosed chamber; as a result of purging with an inert gas to remove contaminants; or as a result of the work itself, e.g. welding; or even the respiration of workers if the fresh air is inadequate.

2.2.2 Toxic Gases, Fumes or Vapour

Toxic vapours of many types can accumulate in a confined space for a variety of reasons. These include:-

- vapours from disturbed deposits or sludge, remains from previous processing or storage, or residues from cleaning;
- vapour produced by the work itself, e.g. welding fume, lead fume, brush or spray painting, solvents from cleaning, lay-up of GRP mouldings;
- vapour produced by work outside the confined space can also cause fumes to be given off inside, e.g. by welding on the outside;
- vapour can seep in from surrounding areas while the work is in progress.

If the presence of contaminated air is known or suspected, stringent precautions must be taken to protect those inside or about to enter.

2.2.3 Ingress of Water, Other Liquids or Free-Flowing Solid Substances

Work in a tunnel or duct, or could result in someone inside finding themselves in water (or another liquid) which is rising dangerously. Inadvertent operation of machinery could result in a gas or steam being allowed to enter where people are at work.

2.2.4 Flammable Substances and Oxygen Enrichment

Biological or chemical processes can also cause the oxygen concentration in a confined space to rise. If this is coupled to the presence of flammable or explosive gases (or dust) and a source of ignition, then there is a real risk of a fire or explosion.

2.2.5 Excessive Heat

The presence of elevated (or rising) temperatures will exacerbate the exhausting effects of strenuous work, and increase the possibility of fire or explosion, or increase the generation of toxic fume or vapour.

2.2.6 Other Regulatory Requirements

The requirements of other Regulations should not be forgotten. They might highlight similar or allied hazards to those outlined above, or place parallel duties on those managing the work. Some of the relevant legal requirements include:-

The Control of Substances Hazardous to Health Regulations 2002 as amended (see 'General COSHH ACoP. L5)

The Electricity at Work Regulations 1989

The Provision and Use of Work Equipment Regulations 1998

The Control of Asbestos Regulations 2012

The Control of Noise at Work Regulations 2005;

The Construction (Design and Management) Regulations 2007,

The Workplace (Health, Safety and Welfare) Regulations1992;

The Personal Protective Equipment at Work Regulations 1992

2.3 Who could be at risk?

Of university staff, those at risk could include any tradesman or manager active in the field: fitters, plumbers, electricians, etc. They perform a variety of tasks: cleaning; painting; welding; 'pipe freezing'.

The relative experience or abilities of those entering a confined space must be taken into account when the venture is being planned It is for this reason that the responsibilities of those in charge of the work have to be stipulated so precisely.

The personnel who are to enter a confined space need to be competent for the task at hand. The specific training appropriate for more complex or risky tasks depends on the outcome of the risk assessment, but ought to include:-

- What the Regulations say, in particular what their own legal obligations are and especially the need to avoid unnecessary entry to a confined space;
- The work to be done and the precautions appropriate in each case;

- the operation of the system of work to be followed, and in particular the operation of any permit-to-work system;
- how emergencies might arise, what arrangements are in force, and what their duties are in each case.

3.0 Responsibilities

Property & Facilities will ensure that the requirements of the Regulations are complied within their area of responsibility, and incorporate this policy and arrangements into its 'local safety statement';

Members of staff who plan, organise, or lead maintenance which unavoidably entails entry into a confined space must ensure that a suitable risk assessment has been performed and an appropriate control strategy implemented;

Any member of staff who enters a confined space must conform to the safety instructions issued to them.

3.1The University Secretary is responsible for:

Ensuring compliance with the Confined Spaces Policy

The overall strategy for the safe operation and execution of activities including consideration of confined spaces issues within the operational and investment estate under his control

Devolving the principal functions of confined spaces management to the Director of Property & Facilities for appropriate execution by them and their staff/consultants.

Supporting applications by the Director of Property & Facilities for necessary or anticipated resource allocation from the University.

3.2 The Director of Property & Facilities is responsible for:

executing the principle functions of confined space management by assembling and maintaining a suitably qualified team consisting of staff and consultants/contractors.

discharging to the Maintenance Operations Manager operational requirements within the agreed policy.

ensuring that staff under his direct control have sufficient and suitable initial and update training with respect to confined space issues where appropriate.

3.3 Maintenance Operations Manager - is responsible for:

- Maintaining an up to date register of all confined spaces and ensure cautionary signage is posted at access points.

- Identifying all the work which could require entry to confined spaces

- Ensuring entry to confined spaces is effectively precluded unless entry is unavoidable for the purposes of duly authorised maintenance

- Ensuring that, where entry into any confined space cannot be avoided, a suitable and sufficient assessment of the risks to health has been carried out.

- Ensuring that prior to entry into a confined space, a written safe system of work, including emergency procedures has been developed and a permit to work issued.

- Be satisfied that the control measures outlined in these risk assessments accurately reflect the degree of risk likely to be encountered by those entering the confined space

- Ensure the staff and/contractors who will be entering the confined space receive appropriate information and training. Make arrangements for the supervision of the inexperienced

- Ensuring that all staff involved in entry into confined spaces are aware of this policy, understand its contents and comply with local procedures and safe systems of work.

- Develop appropriate emergency plans for each entry into a confined space, and communicated to all those involved

- Ensuring that all staff that will enter confined spaces and those who issue permits to work, have appropriate information, instruction, training and supervision in confined space working.

3.4 All Managers and Supervisors who issue permits - are responsible for:

It is the responsibility of each member of staff who plans, organizes or otherwise leads maintenance or project work which could involve entry into or work within confined spaces to:-

a) prevent such entry wherever this is reasonably practicable;
b) where entry into a confined space cannot be avoided, ensure that all the relevant requirements of the law are adhered to, as described in this document. This will entail:-

    - Assessing all associated risks involved in the entry into confined spaces.
    - preparing a risk assessment for the proposed work.
    - ensuring that a suitable safe system of work has been devised.
    - ensuring that those involved a suitably trained and supervised.
    - Ensuring all staff that will enter a confined space are fit to do so.
    - ensuring that there are appropriate emergency procedures in place.
    - comply with Departmental requirements on the technical and managerial monitoring of such activities.
    - The issue of the permit to work and its cancellation.

- Checking safety at each stage of the work.
- provide such information as may be asked for by Edinburgh Napier University on the nature and safe management of such activities.

3.5 All Staff - are responsible for:

It is the responsibility of each member of staff whose work requires them to enter into or work in a confined space to:-

- Adhere rigorously to the safe system of work developed through risk assessment and requirements of any work permit issued to them, or any verbal instruction from a supervisory officer, about entry into or work within any confined space.

- Use any personal protective or work equipment issued to them in a proper manner (and report any defects in such equipment), and;

- Take all reasonable steps to ensure the health and safety of themselves and others when entering or working in a confined space including informing their managers if they suspect that the system of work in place is ineffective or inadequate.

- Reporting all incidents *(including near misses and any defects in equipment)* using the University's designated incident reporting form.

4.0 Control Methodology

4.1 Control Strategies for ensuring safety in confined spaces

Regulation 4 says that
(1) No person at work shall enter a confined space to carry out work for any purpose unless it is not reasonably practicable to achieve that purpose without such entry.
.
The approved code of practice also states

70 Dutyholders should not enter a confined space and should prevent employees, or others who are to any extent within their control, such as contractors, from entering or working inside a confined space where it is reasonably practicable to thoroughly undertake the work without entering the space.

71 In every situation, the dutyholder must consider what measures can be taken to enable the work to be carried out properly without the need to enter the confined space. The measures might involve modifying the confined space itself to avoid the need for entry, or to enable the work to be undertaken from outside the space. In many cases it will involve modifying working practices.

The first question is therefore whether the desired outcome can be achieved without entry. For example:-

a) Can the confined space itself be modified so that entry is not necessary?
b) Can the work be done from the outside? For example:-

- blockages might be cleared by 'rodding' or air purging;
- inspection, sampling and cleaning might be done by machines operated externally;
- remote cameras might be used for internal inspection.

It is only when such alternatives have been considered and rejected as not being 'reasonably practicable', that entry is permissible, under a 'safe system of work'.

Risk assessment is the management tool specified in the Regulations for identifying what has to be done to ensure safety - the 'safe system of work'. This section indicates what protective and preventive measures might need to be considered, depending on the nature of the hazards and people at risk.

Most confined spaces within Edinburgh Napier University are controlled by Property & Facilities. These include various tanks, ducts and boilers. These confined spaces are kept locked and casual attempts at entry are discouraged by 'no entry' signs.

For most situations, the risk assessment will demand that a selection of management and technical strategies be adopted. This constitutes the 'safe system of work'. It is part of the function of the risk assessment to identify specifically which strategies are appropriate and necessary.

In summary, any control strategy for entry into or work within a confined space will amount to:-

- Restrict access to the confined space. If access is not justifiable, do the work remotely;
- Reduce the number of people exposed to the risks, and ensure that those who do enter are properly trained and/or supervised;
- Test and monitor for the presence of contaminants in the atmosphere;
- Have effective emergency procedures.

4.2 Management strategies for ensuring safety in confined spaces

Again, it must be stressed that entry to a confined space must be prevented if the desired outcome can be achieved by another means; hence;

The person in charge of the confined space must ensure that no-one who is not authorised can enter the confined space. Thus, entry by members of the general public (or, indeed, any unauthorised person) must be effectively prevented.

a) Restrict the number of people at risk;
b) Train those who have to enter a confined space. The training has to be consistent with the job in hand, the individual's role and responsibilities. For the novice, a high level of supervision will be necessary to allow them to build up experience and confidence safely.

c) The Permit-to-Work system, such a system is required:-

- to tell people what significant risks they could encounter in the confined space.
- to ensure that the elements of the safe system of work are in place.
- If there is a need to coordinate the activities of several workers and exclude potential problems posed by the presence or activities of others.
- If complex authorisations, communications or procedures are required.

4.3 Emergency Procedures

When things go wrong, people may be exposed to serious and immediate danger. Regulation 5 stipulates that

no person at work shall enter or carry out work in a confined space unless there have been prepared in respect of that confined space suitable and sufficient arrangements for the rescue of persons in the event of an emergency, whether or not arising out of a specified risk.

Clearly these arrangements will depend on the nature of the confined space, the hazards identified and the risk assessment. All the possible aspects of confined space emergency procedure and planning cannot be examined in a brief guide such as this, but to be 'suitable and sufficient', the emergency plans and procedures need to focus on the following :-

The type, quantity and location of any rescue and resuscitation equipment. The actual equipment clearly needs to be appropriate to the foreseeable needs as identified by the risk assessment;

a) Communications, and in particular the means of raising the alarm;
b) Training for all those who might be involved in a rescue:-
    - Safe use of RPE, lifelines, harnesses etc.;
    - Resuscitation and first aid; First Aider(s) present
    - Fire fighting equipment;
    - Atmospheric testing equipment.
    - Liaison with the local emergency services;
    - Record Keeping

Under both the Management of Health and Safety at Work Regulations and the Confined Spaces Regulations it is a requirement to record the results of a risk assessment. It is not necessary to record every aspect of every assessment, but only those aspects relating to a significant specified risk. It is therefore recommended that risk assessments made under the Confined Spaces Regulations are recorded as an adjunct to similar assessments made under the Management Regulations or similar legislation (e.g. COSHH). The overall object is to assure ourselves that we are doing what we must do to comply with this aspect of the law.

The main features of a risk assessment record under the Regulations are:-

- the justification for entry into a confined space;
- the nature of the work;

- the significant risks which could be encountered;
- the appropriate control strategy;
- permits-to-work;
- the safe system of work;
- PPE and RP
- the various duties of those involved;
- the training and experience of those with 'safety critical' task
- the emergency procedures.

5.0 Monitoring Compliance

Any Management system, if left alone, will deteriorate over time: where entry into confined spaces is concerned this could prove fatal. It is therefore a requirement of this Code of Practice that where such entry occurs, The Director of Property & Facilities will periodically monitor that this statement remains relevant and effective. and will, from time to time, require certain information from the Maintenance Management Team. This will include (inter alia) as part of a formal audit: copies of statements of local safety statements; risk assessments relating to entry into and work within confined spaces; systems of work (including permits to work); records of these and other related activities.