## Safe Use of Liquid Nitrogen Policy

**August 2017**

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# Liquid Nitrogen Policy August 2017

## Executive Summary

### Key Messages

- Wherever possible consider tasks where liquid nitrogen is used, that it is replaced with a less harmful substance.
- Where the above is not possible, ensure through engineering controls, supported by the use of personal protective equipment, that staff and others are not harmed in the use, transport and storage of liquid nitrogen.
- Risk assessments must be completed by those responsible for the tasks that involve the use, transporting and storage of liquid nitrogen.
- Systematic monitoring checks on the controls identified during the risk assessment process must be in place and implemented.

### Implementation Standards

#### Managers

- The manager has identified the employees in his or her area to whom the policy applies and has given the policy (or selected excerpts) to them.
- The manager has assessed the impact of the policy on current working practices, and has an action plan to make all necessary changes to ensure that his or her area complies with the policy.
- The manager has set up systems to provide assurance to him or her that the policy is being implemented as intended in their area of responsibility.

#### Employees

- The employee has read the policy (or selected excerpts) and considered what it means for him or her, in terms of how to conduct their duties.
- The employee has completed any mandatory education or training that may be required as part of the implementation of the policy.
- The employee has altered working practices as expected by the policy.

#### Legislation & Standards

- This policy was prepared for publication in January 2015 and reviewed in August 2017. After this date, readers should ensure that they use the latest or new edition of all relevant Legislation, British Standards etc which may post-date the publication of this document.
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1. Introduction

Liquid Nitrogen is used throughout NHS Lothian in a diverse range of workplaces and work tasks; this in itself can create risks to staff and others. Those risks include potential exposure to asphyxiation and cold burns. To assess those tasks and workplace risks during the important stages of storage, use and transportation requires a suitable and sufficient risk assessment and as a result of the assessment, the implementation of appropriate control measures to reduce the risks to as low as tolerable. This policy and associated procedure provides the direction and process to assist with making that assessment.

This policy is a requirement under the arrangements section of the NHS Lothian Health and Safety Policy.

* It should be noted that under the requirements of the Control of Substances Hazards to Health Regulations 2002 (as amended) there is a need to review all the work practices where liquid nitrogen is currently used and where ever possible replace it with a less harmful substance. This review must also be undertaken before deciding to use liquid nitrogen in the first instance.

2. Aims

It is the aim of NHS Lothian that all persons handling, storing or transporting liquid nitrogen are fully aware of the risks posed in its use and are not exposed to unnecessary danger. The scope of this Policy and Procedure is the use of liquid nitrogen at less than 0.5 bar(g). All other systems containing liquid nitrogen operating at pressure greater than 0.5 bar (g) require the application of the Pressure Systems Safety Regulations 2000.

This policy and the associated Operational Procedure have been produced in order to meet this aim. Line managers must bring the policy and guidance to the attention of those with specific responsibilities for liquid nitrogen storage, use and transport in their work activities.

3. Responsibilities

The over arching Health and Safety Policy for the organisation sets out the roles and responsibilities for NHS Lothian employees, additional responsibilities to enable the effective management of the use of liquid nitrogen are detailed below.

3.1. Directors, Senior Managers and Their Management Teams

Directors, Senior Managers and their Management Teams whose staff undertake liquid nitrogen tasks/activities are responsible for ensuring –

- That their staff are aware of this policy and the requirements within it.
- They must make sure work is properly planned, supervised and carried out by competent people.
- That suitable and sufficient risk assessments are in place and where identified that a significant risk exists, that a safe system of work is developed and then implemented.
- That all staff receive suitable information, instruction, supervision and training in the use of liquid nitrogen, the safe systems of work and safe use of any associated equipment.
- That they identify, implement and monitor suitable arrangements for the servicing and inspection of equipment where required.
• Ensure Personal Protective Equipment is provided, fit for purpose and all staff are trained in its use.

3.2. Employees

• Must inform their line manager of any limitations they may have which may prevent them working with liquid nitrogen.
• All policies and procedures designed to minimise incidents and accidents associated with liquid nitrogen are understood and adhered to. If in doubt ask.
• Assist with the assessment of risks, and comply and adhere to the risk assessment findings and any safe systems of work identified.
• Report immediately, any liquid nitrogen adverse events that may cause harm to them or others to their line manager. Record on the NHS Lothian Datix system.
• Immediately inform their line manager if they suspect that the safe system of work in place is ineffective or inadequate.
• Ensure that they wear the appropriate PPE as identified within any task based risk assessment.
• Ensure that any information, instruction and training in the use of liquid nitrogen is adhered to. If in doubt ask.

4. Organisational Arrangements

4.1. Risk Control Measures

Line managers will ensure that risk assessments on the tasks and or work environments where liquid nitrogen is used, stored or transported are reviewed at least annually, and/or immediately in the event of a change or incident which suggests that it is no longer valid, and will decide what appropriate control measures should be implemented. Control measures include information, instruction, training, supervision, mechanical equipment, personal protective equipment, policies, procedures, protocols, permits to work etc. (see appended Guidance document)

4.2. Risk Control Action Plans

Senior Managers and their Management Teams will ensure that action plans are established to implement, monitor and review risk control measures.

5. Monitoring

5.1. Active: All managers of areas where liquid nitrogen is used, stored and/or transported shall undertake at least annually visits; inspections or audits in order to review compliance with this policy.

5.2. Reactive: All managers must ensure that a review and investigation of any adverse event where the use, storage and/or transportation of liquid nitrogen is involved, is carried out and recorded.

All adverse events must be reported using the NHS Lothian DATIX system and investigated in line with the NHS Lothian Adverse Event Management Policy and Operational Procedure.
6. Audit

This policy may be subject to checking as part of the compliance monitoring programme undertaken by the NHS Lothian Health and Safety Department. The frequency checking will be determined by the NHS Lothian Health and Safety Committee. The policy will be reviewed and revised every 3 years or as a result of any changes in legislation and Health Facilities Scotland Technical Memorandums.

7. Related Documents

- NHS Lothian Adverse Event Management Policy and Operational Procedure

8. Legal Considerations, Guidance and other Relevant Information

The legislative framework that underpins NHS Lothian’s obligation to ensure that liquid nitrogen is stored, used and transported safely is contained within:

- The Health and Safety at Work Act 1974
- The Control of Substance Hazardous to Health Regulations 2002
- The Provision and Use of Work Equipment Regulations 1998
- The Management of Health and Safety at Work Regulations 1999
- Personal Protective Equipment at Work Regulations 1992
- European Regulation (EC) No 1272/2008 on classification, labelling and packaging substances and mixtures
- Health and Safety Information for Employees Regulations 1989
- Health and Safety (Consultation with Employees) Regulations 1996
- Health and Safety (Training for Employment) Regulations 1990

Other Guidance and Relevant Information:

- Risk assessment forms and supporting guidance can be found on the OHSS intranet pages
- Risk Assessment. A brief guidance to controlling risks in the workplace HSE.INDG 163 (rev. 4)