Sheffield Hallam University

HEALTH AND SAFETY POLICY

Health and Safety in Research

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Health and Safety Service

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HSSP21	Health and Safety in Research

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Act - Identify whether the system for managing risks is working.

Policy setting - define arrangements, responsibilities.

Plan a system of hazard identification and risk control

Allocate responsibilities

D0 - implement the processes and plans

Check - Identify non-conformance and act on it.
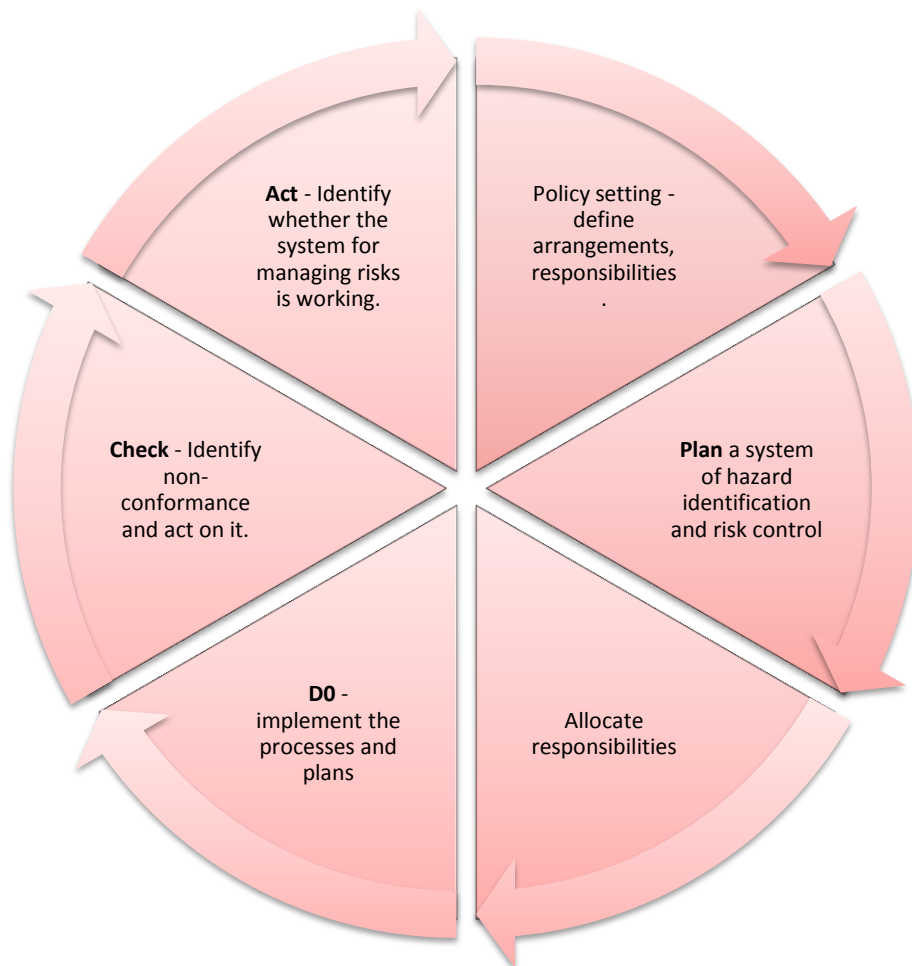
1. INTRODUCTION

Research is critical to what we do and critical to the ongoing success of the University. It is, by its very nature, an exploration of new ideas and new processes. As such, it may generate risks, which arise as a result of those processes, or by virtue of the way in which research is organised and managed.

This document is relevant to all individuals involved in research at Sheffield Hallam University. All are expected to observe the highest standards of health and safety management and to embed good practice in every aspect of their work.

Both fundamental and applied research underpins our teaching and research culture. Key research areas include material science, art and design, sports, science, engineering, biomedical, economic and social research and can be cross-disciplinary. Although the majority of high-level research takes place in the various Research Centres and Institutes, a significant amount of research is also undertaken at undergraduate and post-graduate level within the four faculties. This guidance applies to such work, as the risks and issues are similar to any other research activity.

Management structures, chains of responsibility and role titles may vary considerably across the University. This is further complicated where structures are non-linear, or where work is cross-disciplinary or collaborative in nature, and may involve partner organisations and remote working.
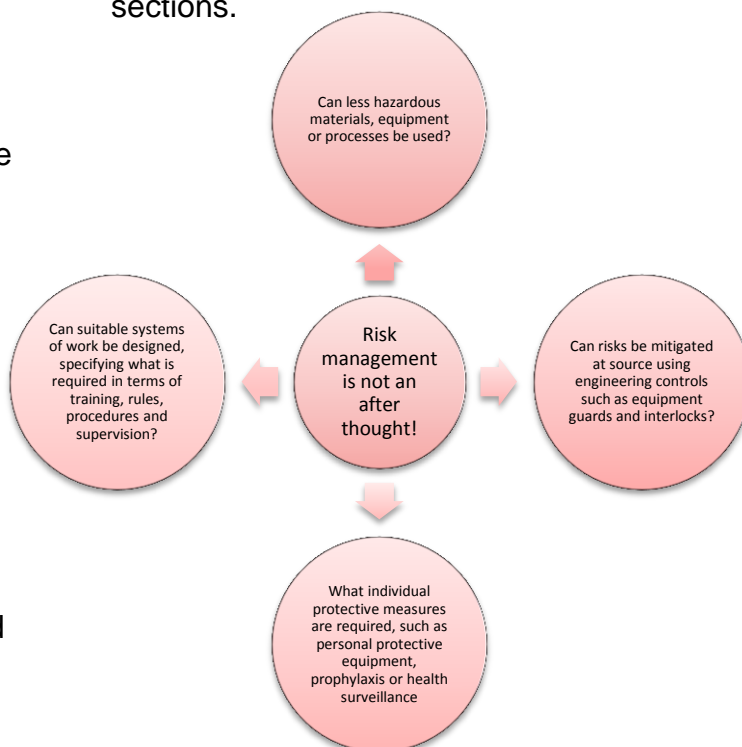
Section 2 summarises the health and safety duties and responsibilities for each management level. It is not possible to encompass all permutations or designations within such a descriptive context, but it is expected that Faculties will extrapolate the responsibilities detailed in section 2, to fit the management and supervisory structures relative to their areas of research.

Section 3 outlines risk assessment and control processes.

This policy and guidance is based on the HE sector guidance document ***Responsible Research*** which was published by the Institute of Occupational Safety and Health (IOSH), with input from the Universities Safety and Health Association (USHA), in October 2012. Case studies have also been published separately, to provide further guidance on how health and safety can be effectively managed across a range of research disciplines.

A glossary of terms used in this guidance and the sources of reference accessed during its compilation can be found in the final sections.

Can less hazardous materials, equipment or processes be used?

Can suitable systems of work be designed, specifying what is required in terms of training, rules, procedures and supervision?

Risk management is not an after thought!

Can risks be mitigated at source using engineering controls such as equipment guards and interlocks?

What individual protective measures are required, such as personal protective equipment, prophylaxis or health surveillance

2. ROLES AND RESPONSIBILITIES CHECKLIST

The roles and responsibilities of the **Vice Chancellor** as well as the **Pro-Vice Chancellor/Dean, Assistant Deans** and **Heads of Department** are explained in the main University Policy as well as in local Health and Safety Statements. They all have a responsibility for ensuring that health and safety is appropriately managed within the scope of their roles and responsibilities.

Heads of Research Institutes are accountable for the safe and compliant conduct of all activities within the Institute that they are responsible for.

Any member of staff that has been given responsibility for a particular research project, or for staff involved in research, is responsible for ensuring compliance with legal requirements and for implementing the policies and procedures of the University. All staff that are coordinating or supervising research programmes, such as **Heads of Research Centres or Research Leaders**, are responsible for ensuring effective operational management of Health and Safety.

Principal Investigators (PI's), Collaborative Investigators (CI's) and post-Doctoral Researchers are experts in their particular field of research. They are therefore expected to ensure that they understand the hazards and risks associated with their research and are competent to manage them effectively. They need to apply this knowledge to ensure that the research under their supervision is carried out in a safe manner.

All researchers (including PhD students) must:-

- take responsibility for their own health and safety and ensure that they don't compromise the health and safety of others by the things they do or fail to do
- work safely and efficiently
- follow the organisation's policy, guidance and safe systems of work
- attend training and put it into practice in the workplace
- risk-assess, or assist with the risk assessment of their work
- use protective equipment as recommended
- not change research or other work protocols without first discussing the change with their manager and specialist safety advisers as appropriate
- report incidents that have resulted in, or could have resulted in, injury or damage
- assist in the investigation of accidents with the aim of introducing preventative measures
- report unsafe conditions or actions work co-operatively to improve health and safety standards and performance.

Support staff, including technical staff, cleaners, maintenance staff, engineers and the like, are responsible for ensuring that they work safely in any areas where research is being carried out. This may require consideration of any additional hazards/risks that may be present as a result of the research or because of the work they carry out in Research areas.

The following table provides a more detailed overview of the action that must be taken by everyone involved in Research. It is set up as a simple action list to make it clear what action is required, who is responsible for it and to enable staff to record the action they have taken. Anyone requiring further detail on roles and responsibilities should read the sector guidance which may be found on the intranet.

Responsibility for ensuring compliance

Any member of staff that has been given responsibility for a particular research project, or for staff involved in research, is responsible for ensuring compliance with legal requirements and for implementing the policies and procedures of the University.

Action Required	Roles and responsibilities						Action taken
	Heads of Research Institutes	Senior staff that are co-ordinating or supervising Research programmes.	Principal Investigator or Collaborative Investigators	Post-Doctoral Researchers	Support staff	Project Students and Trainee Researchers	
1. Policy and Planning							
a. University policies are implemented	✔	✔	✔	✔	✔	✔	
b. Staff and students are made aware of their health and safety responsibilities and fully understand what is required of them.	✔	✔	✔	✔	✔		
c. All individuals are responsible for their own health and safety and must consider how others may be affected by their action or inaction.	✔	✔	✔	✔	✔	✔	
d. Individual responsibilities are allocated and are taken into account in appraisals, supervision and performance reviews;	✔	✔					
e. Faculty and local health and safety objectives are achieved;	✔	✔	✔	✔	✔		
2. Management of risk							
a. Comprehensive programmes of risk management and control are in place, and appropriate arrangements exist for the management of foreseeable risks arising from the research or associated work;	✔						
b. Processes are in place to ensure that planned programmes of work have been thoroughly risk assessed and foreseeable risks controlled and reduced to acceptable levels, prior to the work commencing;	✔	✔	✔	✔			

Action Required	Roles and responsibilities						Action taken
	Heads of Research Institutes	Senior staff that are co-ordinating or supervising Research programmes.	Principal Investigator or Collaborative Investigators	Post-Doctoral Researchers	Support staff	Project Students and Trainee Researchers	
c. Risk assessments are carried out and information on risks and risk controls communicated to all relevant stakeholders;			✓	✓		✓	
d. Junior researchers or students may be required to undertake assessments. Where this is the case, the PI or supervisor must be confident that the researcher has the necessary knowledge and competence to do so to an acceptable standard, and should double-check and sign off the assessment(s) before work commences		✓	✓	✓			
e. Risk assessments must consider the potential exposure of support staff.		✓	✓	✓		✓	
f. Support staff must provide researchers with information about any work they intend to carry out, to identify any potential impact on the research and assist in a comprehensive assessment of risk.					✓		
3. Competence, Training and awareness							
a. Ensure all staff are competent including researchers who must be competent to undertake their research in a safe manner;	✓	✓	✓	✓	✓		
b. Ensure a formal system exists to identify training needs, and to arrange such training as may be necessary (this applies both in general safety matters, such as risk assessment, and in specific risk areas, such as use of lasers or working in the community);	✓	✓					

Action Required	Roles and responsibilities						Action taken
	Heads of Research Institutes	**Senior staff that are co-ordinating or supervising Research programmes.**	**Principal Investigator or Collaborative Investigators**	**Post-Doctoral Researchers**	**Support staff**	**Project Students and Trainee Researchers**	
c. Only Principal Investigators who have the necessary competence in health and safety are allowed to supervise PhD students	✓	✓					
d. Ensure that all members of staff or students potentially exposed to risks are provided with adequate information about the risks arising from the work and the means of controlling those risks.	✓	✓		✓	✓	✓	
e. Staff and students planning to be involved in activities that require specific competencies must ensure that they have received appropriate training to enable them to proceed.		✓	✓	✓	✓	✓	
f. Ensure that all researchers, including students, are made aware that failing to comply with policies or to follow university or faculty guidance may be regarded as a disciplinary matter.	✓	✓	✓				
4. Operational Control							
a. Appropriate levels of supervision are identified and provided	✓	✓	✓				
b. All managers and supervisors, have a responsibility to be supportive, provide mentoring, provide a positive role model and take appropriate action to rectify health and safety weaknesses or failings;	✓	✓	✓	✓	✓		
c. Arrangements for ensuring the safety of contractors, visitors and others are in place and effectively communicated.	✓	✓					

Action Required	Roles and responsibilities						Action taken
	Heads of Research Institutes	**Senior staff that are co-ordinating or supervising Research programmes.**	**Principal Investigator or Collaborative Investigators**	**Post-Doctoral Researchers**	**Support staff**	**Project Students and Trainee Researchers**	
d. All planned preventative maintenance is carried out. this includes any inspection, checks and testing which is specifically required by law e.g. inspection of lifts	✔	✔					
e. all permits, licenses and authorisations required are obtained and appropriate records kept.	✔	✔					
5. Performance measurement and monitoring							
a. Suitable arrangements exist for ongoing monitoring of health and safety performance, both formal and informal, to ascertain how well risk control measures and systems are working, to ensure worker engagement and allow reports to be made to the University Executive;	✔	✔					
b. Ensure systems are in place to enable the prompt and effective reporting of accidents, near misses or unsafe conditions.	✔	✔	✔	✔	✔		
c. Ensure that accidents and near misses are reported investigated as appropriate, with actions taken to prevent a recurrence.	✔	✔	✔	✔	✔	✔	
6. Emergencies							
f. Ensure that suitable and sufficient arrangements are in place to deal with foreseeable emergencies.	✔	✔	✔	✔			

3. PROCESS

Overview

Consideration of Health and Safety must start at the design stage and continue throughout all stages of the research programme. Regular review of risk assessments must be carried out as changes are made during the research programme. It is also important to consider what happens at the end, such as the arrangements for waste disposal and decommissioning of equipment or controlled areas.

The process for managing health and safety in research, summarised in figure 1, requires:-

- clearly defined arrangements and responsibilities (as set out in this document and supplemented by local policy and arrangements)
- a planned approach to hazard identification and risk control resulting in identification of all significant risks;
- a proactive and systematic approach to safety management with clearly allocated roles and responsibilities
- effective operational implementation of control measures to reduce the risk to an acceptable level such as safe systems of work, use of Personal Protective Equipment etc;
- monitoring to check on compliance; and
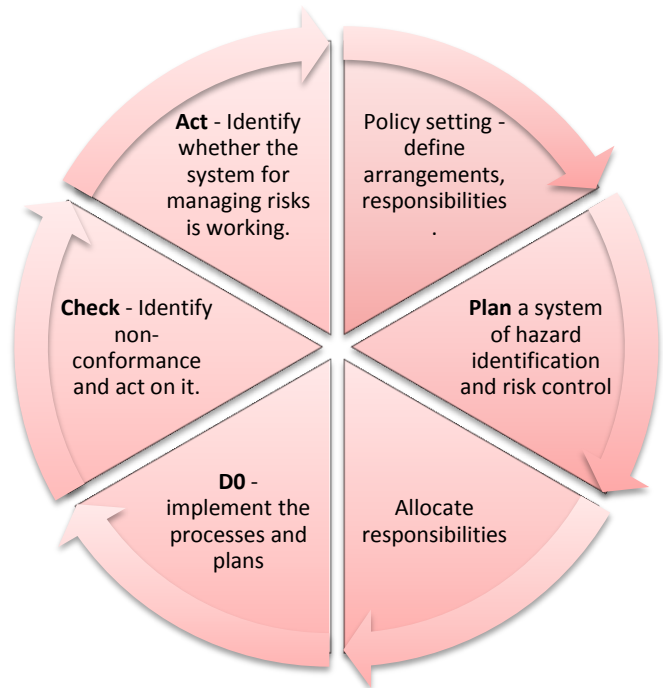- a review process to ensure the system is working effectively

Figure 1 - Safety Management in Research

Researchers must have the knowledge, skills, tools and equipment required to carry out their activities safely.

Risk Assessment

All research tasks and projects must be evaluated for foreseeable risks **before** the work begins. Carrying out risk assessments before committing to the project will help determine whether existing resources and facilities are enough to provide any necessary safeguards. Buildings, rooms, equipment etc, should be designed and maintained to ensure they don't compromise health and safety. For example, research may require interlocked access to rooms containing hazardous equipment or substances such as lasers or microbiological hazards.

Practical research, by its nature, is likely to involve new materials and processes and/or the use and application of hazardous substances, equipment or processes in novel ways.

This may require a more dynamic approach to risk assessment. Identifying hazards as they arise may be the only way of assessing risks as research work develops. However, there is still a requirement to document any significant risks that can be identified from the start and ensure adequate control measures are implemented.

Anyone carrying out risk assessments must be familiar with the more detailed policy and guidance in HSSP22. The risk assessment process is summarised in figure 2.
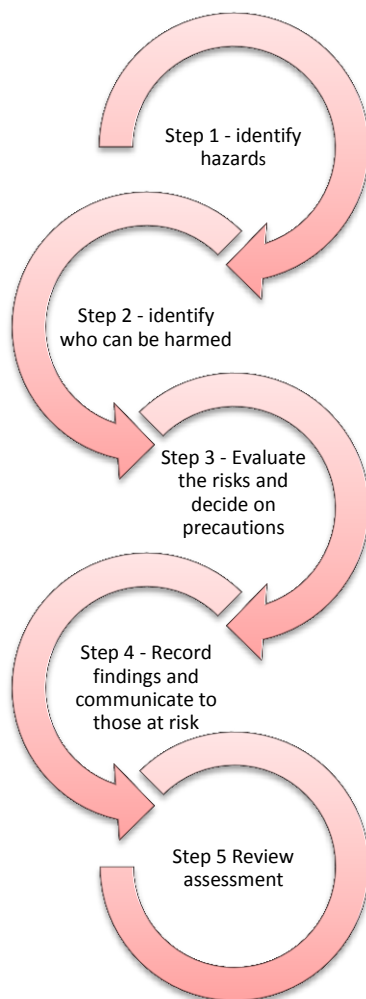
Step 1 - identify hazards

Step 2 - identify who can be harmed

Step 3 - Evaluate the risks and decide on precautions

Step 4 - Record findings and communicate to those at risk

Step 5 Review assessment

Figure 2 - Risk Assessment

Whilst risk assessment in research is no different to that in any other work, some of the key issues to consider are as follows:-

- Risk assessments must always take into account the competence levels of the researchers and any other staff who may be involved. Additional training may be a legal requirement or an essential aspect of the risk controls measures.
- Research may require access to specialist technical advice and support. For example, work with genetically modified organisms may require the involvement of a *Biological Research Officer*, or the use of radioactive substances may require a *Radiation Protection Adviser*.
- Some research may involve more familiar risks and may not require the technical input and support described above. In such cases the research may lend itself to the use of generic risk assessments and/or guidance. However, it should be noted that this often requires a very dynamic approach to risk assessment, requiring staff to 'think on their feet', in order to anticipate and deal with situations which may vary from the norm. It is important to ensure that staff are aware of this and take action to review risk as part of their day to day activities.
- Where a dynamic approach is taken, whether through necessity or choice, any significant decisions or learning outcomes should be recorded and communicated to relevant staff, thereby improving the knowledge and competence of the team and enriching the safety culture.

- One of the most important components of the risk assessment and control process is the communication of the relevant findings, details of the risks and risk controls, to all those involved, or anyone else who may be at risk. Risk assessment will inform the development of research guidance and safe systems of work, and the risks and controls identified should be incorporated into research work protocols. Other means of communication include such basic elements as labels and signage, but verbal explanation and

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┌─────────────────────────────────────┐
│      Elimination or substitution     │
├─────────────────────────────────────┤
│ Can less hazardous materials,        │
│ equipment or processes be used?      │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│        Engineering controls          │
├─────────────────────────────────────┤
│ Can risks be mitigated at source     │
│ using engineering controls such as   │
│ equipment guards and interlocks?     │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│        Administrative controls       │
├─────────────────────────────────────┤
│ Can suitable systems of work be      │
│ designed, specifying what is         │
│ required in terms of training,       │
│ rules, procedures and supervision.   │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│ Personal Protective Clothing and     │
│ Equipment                            │
├─────────────────────────────────────┤
│ What individual protective measures  │
│ are required, such as personal       │
│ protective equipment or health       │
│ surveillance/                        │
└─────────────────────────────────────┘
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Figure 3 - Hierarchy of control measures

demonstration is one of the best ways of ensuring the message gets across. Safety must therefore be reinforced during meetings and as part of supervision.

- Arrangements must be made to monitor the application and effectiveness of the risk controls. Inspections, casual observation, verbal feedback from researchers, as well as incident records can all be used to determine if the safe system of work is effective. If it is found not to be the case, then the risk assessment must be reviewed promptly, and steps taken to remedy the weaknesses, which may involve new control measures.

- Risk assessments must be reviewed frequently in research where the situation may change rapidly, rendering risk assessments out of date. The frequency of reviews depends on how often things change such as changes to activities, locations, layout, materials, equipment or staffing. Effective risk assessment is an evolving process, which seeks to refine and improve the safe system of work.
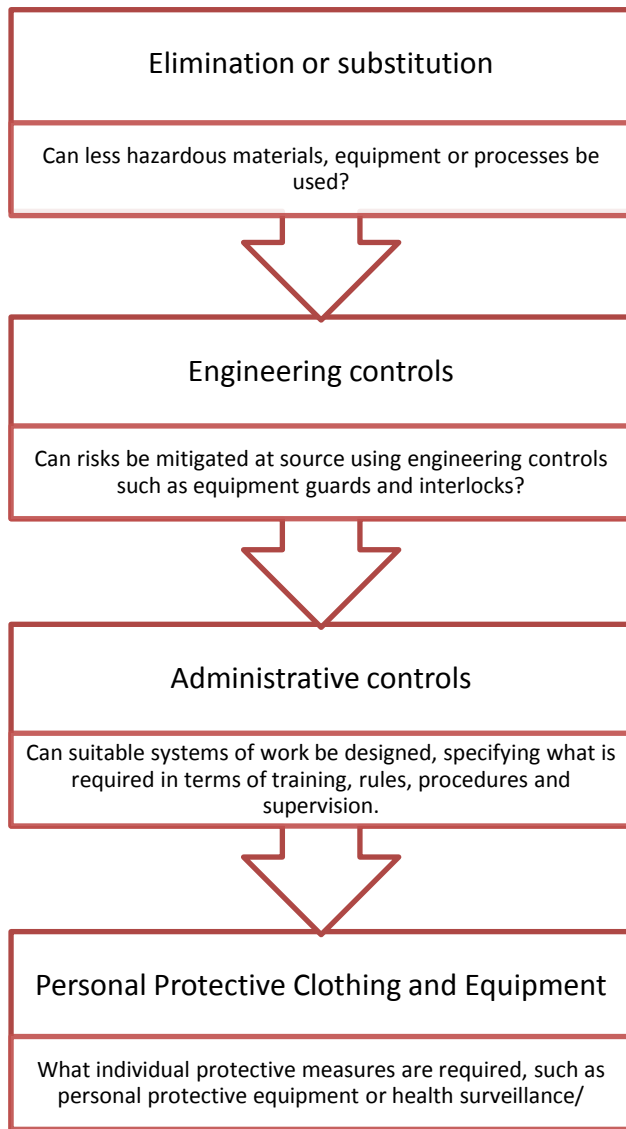
Record keeping

All formal risk assessments should be recorded, and kept for a minimum of three years beyond the point they are no longer applicable or beyond the end of the project.

Examples of the types of record which are required by law, or which should be kept as a point of good practice, are shown below:-

- Appropriate Licenses and Authorisations

- Training and induction records for individual researchers
- Risk assessments and details of risk control measures
- Safe Systems of Work, Standard Operating Procedures or equivalent
- Details of changes made to procedures
- Reviews of any relevant documents
- Records of inspections (workplace or equipment)
- Minutes of team meetings

It is critically important that records are kept in a methodical fashion, and collated such that all aspects of project safety can be accessed and understood, both by the researchers and by an interested third party. As research is, by its very nature, an evolving process, it is vital that records are updated, to reflect any changes made. All records need to be legible, well-explained and collated in an appropriate manner, with due regard to chronology.

4. **FURTHER GUIDANCE**

This policy and guidance is based upon more detailed guidance published by the Institute of Occupational Safety and Health (IOSH), with input from the Universities Safety and Health Association (USHA), in October 2012 - ***Responsible Research***.