Health and Safety Code of Practice

SCP22 Unattended Experiments

Responsibility for Policy:	Finance Director, Deputy Chief Executive & University Secretary
Relevant to:	University Staff, Researchers and students
Approved by:	Health and Safety Committee
Responsibility for Document Review:	Manager, Safety and Health Services
Date introduced:	January 1999
Date(s) modified:	March 2001, February 2004, October 2010, September 2013, September 2015, October 2017
Next Review Date:	December 2020

RELEVANT DOCUMENTS

- Health and Safety at Work etc. Act 1974
- Management of Health and Safety at Work Regulations 1999
- Control of Substances Hazardous to Health Regulations 2004
- Regulatory Reform (Fire Safety) Order 2005
- Dangerous Substances and Explosive Atmospheres Regulations 2005
- Health and Safety (Safety Signs and Signals) Regulations 1996

RELATED POLICIES & DOCUMENTS

- Liverpool John Moores University Health and Safety Policy Statement
- MCP1 Organisation for the Implementation of the Health and Safety Policy
- MCP2 Arrangements for the Implementation of the Health and Safety Policy
- SCP6 Control of Substances Hazardous to Health
- SCP18 Risk Assessment
- SCP42 Dangerous Substances and Explosive Atmospheres

THIS CODE OF PRACTICE FORMS PART OF THE UNIVERSITY'S HEALTH AND SAFETY POLICY AND REPLACES ALL PREVIOUS ISSUES

INDEX

1. INTRODUCTION

The purpose of this Code of Practice is to detail the procedure for ensuring that unattended experiments are conducted safely and notified to Security Services.

1.1 Legal considerations

The following legislation should be considered when conducting unattended experiments:

- Health and Safety at Work etc. Act 1974
- Management of Health and Safety at Work Regulations 1999
- Control of Substances Hazardous to Health Regulations 2004
- Regulatory Reform (Fire Safety) Order 2005
- Dangerous Substances and Explosive Atmospheres Regulations 2005
- Health and Safety (Safety Signs and Signals) Regulations 1996

The Act and supporting Regulations place duties on the University toward employees and students that they supervise and to those who may be affected by its activities. It is the responsibility of the University to ensure that appropriate standards are met in relation to health and safety.

2. RESPONSIBILITY

Where it is considered necessary for experimental apparatus to be left unattended outside normal working hours, the person responsible for the apparatus must establish safe working procedures.

The responsibility for ensuring the form in the Appendix is properly completed and posted rests with the academic research supervisor or the supervising line manager of the work, without exception.

It is the responsibility of the experimenters to design experiments so as to prevent the release of hazardous substances in the event of interruptions in utility services, such as electricity, cooling water, and inert gas. In most cases, experiments should be run in the fume hood.

Arrangements should also be made for other staff/researchers to periodically inspect the operation. Materials, particularly flammable substances, not involved in the experiment should be removed to avoid their involvement in a fire or other incident.

3. RISK ASSESSMENT

Anyone considering running an unattended experiment should consider the possible hazards that could occur as a result of failures, malfunctions, operational methods, environments encountered, maintenance error and operator error. These hazards should be identified during the risk assessment process by looking at the system as a whole and identifying where failure could occur (see SCP6 Control of Substances Hazardous to Health, SCP42 Dangerous Substances and Explosive Atmospheres and SCP18 Risk Assessment). Some examples include:

- Temporary power loss or interruption; if power was suddenly interrupted, would the system or safety features for the system also be shut down?
- Interruption or loss of water supply; if water was suddenly interrupted or a hose pulled out or burst, would the system overheat, flood the room/s, or cause some other problem?
- Interruption in the supply of or loss of compressed gas or air; if it was suddenly interrupted or a pipe pulled out or burst, would the system fail and damage the equipment and room/s, or cause some other problem?

- Interruption or loss of gas supply
- Interruption or loss of ventilation beyond normal working hours
- Defects in the monitoring or detection systems
- Leaks of gases or liquids
- If appropriate signage was not used, could someone mistake the containers or turn a switch that was intended to remain open/closed?

4. FAIL-SAFE DESIGN AND PRECAUTIONS

Experiments should be designed so that they are "fail-safe", which means that they will prevent one malfunction from propagating other failures. Fail-safe designs ensure that a failure will leave the experiment unaffected or will convert it to a state in which no injury or damage will occur; for example, if water is used for certain experiments, then they can be designed with a water flow monitor and solenoid valve, which will turn off the water flow in the event of a broken hose or fitting.

Other possible precautions include:

- correct earthing of electrical devices
- circuit breakers, surge arrestors and similar
- safety thermostats
- automated fire extinguishing systems
- safety valves

5. NOTIFICATION PROCEDURE

The Unattended Experiments and Equipment form (see Appendix) must be completed by the academic research supervisor or the supervising line manager of the work. The accompanying risk assessment should be attached and both should be sent to the Security Services Manager in 2nd floor, Exchange Station. It is important that the action to be taken in an emergency and emergency contacts are clearly shown on the form.

A copy of the completed Unattended Experiments and Equipment form and accompanying risk assessment should be left with the experiment in the laboratory, workshop or studio.

A further copy of the above completed form and risk assessment should be attached to the outside of the door of the laboratory, workshop or studio.

Any additional appropriate safety signage must also be displayed.

Appendix
Unattended Experiments and Equipment

Name of School/Institute		
Name of experimenter:		
Date of experiment:		
Duration of experiment:	Time start	Time finish
Room number:		
Room tel. number:		
Name of supervisor:		Tel number:
Experiment and equipment:	Detail:	
Main details:		
Pathogens		
Toxic/Harmful		
Radiation		
Pressure systems		
Explosive substances		
Highly flammable substances		
Other:	Detail:	
Is the Risk Assessment attached?	Yes ❒ No ❒ Why not?	
Services in use:		
Gas		
Water		
Electricity		
Vacuum		
LEV(fume cupboards)		
Compressed gases		
Other	Detail:	
Action to be taken in an emergency e.g. flood, fire, leaks, spillage, power failure	Detail:	
Emergency contacts	Name(s):	Tel number(s):