Department of Physics Safety Committee Notes, Wednesday 4th September 2024.

Chair: John Gillan

Present: Gabrielle Weir (GW) Mark Wiggins (MW), John Revie (JR) Konstantinos Lagoudakis (KL), Alan Kemp (AK) Helen Vaughan (HV)

Apologies: Jonathan Pritchard (JP), Yu Chen (YC)

Minutes: Michaela Graham (MG)

1. Apologies

Apologies were noted

2. Minutes of Last meeting

The minutes of the last Safety Committee Meeting held on Wednesday 20th March 2024 were approved and the action items reviewed.

3. Safety Convenor Report

A. Annual Safety Plan

JG would like to thank everyone that was involved in the safety plan. HV suggested that the new teaching labs be added to the annual safety plan. Action. HV

B. Departmental Arrangements

The format will change due to the new local rules/arrangements. Remove appendixes from arrangements and save them on Spider X also add them to the course list. Action. JG

C. Roles & Responsibilities

The Roles & Responsibilities were updated. It was suggested that the list should be included in the next safety bulletin to make staff aware of who is responsible for what. Action. JG

D. KPIs

The KPI's were reviewed but not completed. Action. As highlighted.

E. Gap Analysis

The Gap Analysis review took place at the beginning of September 2024.

F. Safety Inspection.

JG reported that there are 12 outstanding items from September 2023 which need to be addressed. It was stated that the safety convenors are working on this. It was requested that all outstanding items be completed by ASAP. Action. ASC's

It was questioned if the hotplate item appears on the register for heat. JR suggested that the item be tagged. Action. JMcG

MW raised the question on who is responsible for ladders & kick stools. JG responded anyone who has completed the safety training on working at Height (ladders). It was suggested a list should be created with the names of the qualified individuals and sent round in the Safety Bulletin. Action. JG

G. Action Points.

JG to look at safety inspection report & review before the next Safety committee meeting in November. Action. JG

4. Fire Safety Report

The committee was informed that there are two new fire panels within the building (SCAPA & Level 5). It was stated that some labs within SCAPA still need detection fitted.

5. Fire Awareness/ Drills

It was mentioned that the department could be responsible for doing our own fire drills. JG should complete the training for this. Action. JG

It was also mentioned that a fire drill should take place at the start of term. Action. JG

Fire safety training is now available on MyPlace and all fire marshals should complete this. Action. Fire Assistants

6. Ionising Radiation Report

In SCAPA, the Panama radiochem lab JA104 is planned to be used in November by NPL. Richard Wright and equivalent at NPL (Lynsey Keightley) are in direct contact to arrange the ownership of the lab during the period of work.

No update from ABP.

The Departmental Arrangements for the Control of Ionising Radiation document has been updated to include Grace Manahan as Deputy RPS (John Anderson Building) and to account for the new Radiation Protection Advisor – not on the document itself – details held by Safety, Health & Wellbeing.

Richard has requested updated appointment letters for all the RPSs so a brief meeting will be held with Head of Department soon (as Head of Department signs off the letters) – myself and Grace for JAB and Kevin and Craig R. for Technology & Innovation Centre.

No issues to report for sealed sources, radiation badges or monitors. Annual calibration of the monitors will be carried out soon.

7. Laser Safety Report

Laser Eye-Strike Incident

Laser eye-strike incident reported 5/8/24 due to a stray reflection from a viewer card in use by a PDRA catching another lab user in the eye. A measurement of the beam power and card reflectivity were performed immediately afterwards, verifying the reflected beam was below MPE. As part of the incident investigation, the following actions have been taken in liaison with Richard from Safety Services:

- EQOP Local Rules and Risk Assessment updated to specifically state that viewer cards only to be used at low optical powers (≤10 mW) without use of goggles, and specifically state that powers must be measured prior to alignment to verify if below MPE or not.
- All EQOP users reminded of safe way to use viewer cards at subsequent group meeting and via an email notification to all users and PI's
- Changes to guidance incorporated into new Department Local Rules
- Area-DLPS notified of incident and response. Safe use of viewer cards to be highlighted at annual training.

Laser Safety Training

Annual Laser safety training lectures scheduled for dates below:

- 2pm on 2nd October : A. Kemp (IOP)
- 2pm on 2nd October : K. Wilson (EQOP)
- 2pm on 2nd October : W. Li (SILIS)
- 2pm on 16th October : K. Lagoudakis (Nanoscience)

Attendance required for new UG/PGT/PGR students and existing staff as a refresh of safety training.

Laser Inventory

Updated laser inventory lists have been collated from each group but work in progress with Safety Services to get e-rad database ready. Deprecated Physics/IOP entries have been deleted but currently not possible to add new entries to the database.

Laser Interlocks

New interlocks for level 4 lab under construction by Electronics workshop – to be installed and Commissioned autumn 2025. Replacement of labs with old maglock entry systems on-going.

8. Biological/ Chemical & Hazardous Waste Safety Report

BP1 and BP2 online level registration forms for the academic year 2024/2025 are now live. These are accessible via Pegasus and must be completed by all staff and post grad students working with biological materials. 4th year undergrad students are also required to register prior to commencing work with biological material.

Any new bio workers can still register throughout the academic year, via Pegasus. On completion, this form will be sent electronically to the Departmental Safety Co-coordinator/Department Biological Safety Co-coordinator. Once online registration is complete the system can be monitored for participants. Please note, work with biological material is not permitted without prior registration.

The BP1 and BP2 online registration forms, along with the associated guidance, can be found on Pegasus, in the Safety Services section under the Human Resources tab. As a reminder:

- BP1 This Form should be completed by those working with biological agents.
- BP2 This Form should be completed by those working with animal or human blood, blood products, tissue or body fluids.

Please be reminded that no physical copies should be sent to Safety, Wellbeing and Resilience (formally SHaW Safety, Health & Wellbeing). The BP registration database is held on Pegasus for security and confidentiality purposes to which Safety, Wellbeing and Resilience have administrative rights.

Please advise safety@strath.ac.uk of any changes to Departmental Safety Co-coordinators and/or Departmental Biological Safety Co-coordinators so that access to the BP database can be kept up to date.

Should you require any further information please do not hesitate to contact Safety, Wellbeing and Resilience?

Bio Safety Training Update from Safety, Wellbeing and Resilience SWaR

The new Biological Safety Training has now gone live. It can be access on MyPlace, link can be provided if required.

An additional non-mandatory module 'Biological Safety Awareness' is in development. It is intended for lab workers who are working in areas where biological work is being undertaken by others. Completion is anticipated within the next few weeks, further information can be obtained from Sarah Carroll, Specialist Health and Safety Manager, University Biological Safety Adviser, Safety Wellbeing & Resilience.

Hazardous Waste Disposal

All areas generating any kind of Hazardous Waste should already have the means and/or knowledge to safely dispose of any waste items. John G or myself can answer any queries and provide any

necessary means of localised waste disposal as well as use of the University Hazardous Waste disposal service.

Please be aware that there should never be any chemical substances put into any of the supplied Hazardous Waste bins. All chem substances are disposed of via the Hazardous Waste service, all sharps (e.g. needles, blades and similar items) go into sharps bins which can be supplied free of charge. They should never be put into any of the Hazardous Waste bins. Non-domestic broken glass can be disposed of via the Hazardous Waste service, advice on how to do this is available.

If anyone is in doubt about how to dispose of any Hazardous Waste items, or if something is classed as HW, please do not hesitate to ask.

Please be aware that it is departmental policy that no chemicals should be poured down sinks. Recent experience has shown that other departments do not share this restriction, please ensure any visitors using our lab facilities to the department are made aware of this restriction.

HW Collection dates

The next batch of collection dates are 18 September, 9 & 30 October. Submission deadline for uplift is one week before the collection date, this is to allow sufficient time to complete documentation submission and packing & labelling of waste items. Due to imminent annual leave, the submission for the next HW uplift has already been sent. Any further items will have to wait until 9 October.

9. Report from Disability Officer

Height adjustable desks in all four of our refurbished teaching laboratories.

The use of them is being assessed to recreate a method of work and risk assessments ed before start of term. This is especially important if they are used to raise or lower equipment using lasers (usually class 2 in the teaching labs) to different heights.

Personal Emergency Evacuation Plans for undergraduate students

Currently have no students that require PEEPS.

DDC team and module leaders to discuss students with additional support needs before term starts.

New cohort to start in welcome week 16th September.

Personal Emergency Evacuation Plans for visitors

Open Evenings/Schools outreach visits

These events are organised by us and we request information about additional support needs.

Open Days

These events are organised centrally and we cannot guarantee that we will receive the relevant information ahead of time. It would be useful to have an up to date plan in place.

Recommendation:

Now the teaching laboratories are available, we will review the Open Day/visitor risk assessments and plans for evacuation.

Parking for disabled visitors – note about signage

Whilst parking for wheelchair users has been organised easily enough for the Open Evening and School groups, additional signage or information pack about which lift to use and what to do in the event of a fire would be gratefully appreciated.

10. Training

Group Induction training has been scheduled for the start of October and all online forms are available on Spider X. It was mentioned that there should be a way to monitor and remind P.Is to complete the forms?

11. First Aid/accidents & Emergencies

It was mentioned that a laser incident was reported to Safety Wellbeing department. Details of this have been included in the laser safety report.

12. Building Access

Nothing to report

13. Red Flag Procedure

Nothing to report

14. ShaW Updates/ Safety Bulletins

There have been 10 Safety bulletins since March 24. List provided below.

14.1 80 Chemical Storage update_Mar 24

14.2 81 SHaW updates_Mar 24

14.3 82 Departmental Safety Training_April 24

- 14.4 83 ShaW update_April 24
- 14.5 84 Lifting tackle Inspection_May 24
- 14.6 85 Shaw Travel Off-Campus and Fieldwork_May 24
- 14.7 86 ShaW update_May 24
- 14.8 87 Departmental Safety Training_June 24
- 14.9 88 Lifting Inspection_June 24
- 14.10 89 ShaW update_July 24

15. Matters Arising and not otherwise on the Agenda

There were no other matters arising and otherwise not on the Agenda.

16. A.O.B

It was mentioned that SHaW has a new name of Safety Wellbeing & Resilience. The new safety calendar dates have been agreed and it was decided that Manjit should send out the Safety committee meeting dates to everyone. Action. MK

It was also noted that there is a new safety sharepoint page.

The next Safety Committee Meeting will take place on 27/11/24 1.15pm-2.45pm in JA824.

2024					
No.	Gap	Specific Action	Action by	Target	Completion
	Analysis			Date	Date
	Ref No.				
Α	Leadership &	Commitment			1
24/01	4.2-1	Review Safety Committee,	DSC/DDSC	Dec-24	
		composition, remit, meetings			
24/02	124	etc.		6 1 2 4	6 1 24
24/02	1.2-1	Review Roles and	HOD/DSC/DDSC	Sept-24	Sept-24
24/02	1.2-4	Responsibilities	ASC	Doc 24	Nov 24
24/05	4.2-1	committed to follow and enforce	ASC	Dec-24	1100-24
	7.2-2	University safety standards and			
		regulation resulting from OHS			
		objectives linked to the SHaW			
		strategy.			
24/04	1.2-5	Hold three safety committee	HoD, DSC	Nov-24	Nov-24
	1.2-6	meetings throughout the year.			
	2.1-3	20 th . March, 4 th . September and			
	2.1-4	11 th November.			
	3.1-1				
B	Risk Control				
24/05	3.1-1	Review Gap Analysis	HOD/DSC/DDSC	Sept-24	Sept-24
24/06	3.1-1	Review Hazard mapping		Sept-24	Sept-24
24/07	3.1-1	Review Kisk register/profile		Sept-24	Sont 24
24/08	3.1-1	The emergency contact details		Dec 24	Ath Oct24
24/03	1.4-1	for Red Elag areas will be tested	DEIVI	Dec-24	4. 00024
		and documented.			
24/10	3.1-1	Review current 'red card' users	DSC/DSC	Dec-24	Nov-24
		list.	, i		
24/11	3.1-1	Build and install 5 new approved	DSC/LRPS/TSM	Dec-24	Oct-24
		laser safety interlock system.			
24/12	3.1-1	L7 Cleanroom: combine pre- and	IOP	Apr-24	May-24
		post-covid master induction			
		documents (eRisk 2688 is			
		superceded)			
24/13	3.1-1	L/ Cleanroom: Migrate DSEAR	ЮР	Jun-24	Dec-23
		tomplate			
24/14	1 5-3			Nov-24	Mar-24
27/17	4 2-1			100-24	Now part of
		L7 Cleanroom: Conduct at least			regular Dept
24/15	2.2.1	two area safety inspections	CCADA.	Dec 24	checking cycle
24/15	2.2-1	and COSHH & DSEAR forms	SCAPA	Dec-24	
24/16	3 1-1	OPTICS: review risk assessments	ΟΡΤΙCS	Dec-24	
24/10	5.1-1	and COSHH & DSFAB forms	ornes	Dec-24	
24/17	2.2-1	Nanoscience: review risk	Nanoscience	Dec-24	
, _,		assessments and COSHH &			
		DSEAR forms			
24/18	2.2-1	ABP: Test new interlocks for	PLASMAS	Feb 24	
		TIC120 and review Standing			
		Orders and Risk Assessments			

C	Communica	tion & Engagement			
24/19	1 4-2	Fire Assistants will regularly be	DDSC	Mar-24	Mar-24
24/15	1 4-3	informed of changes and receive	DDSC		
	1.4 5	relevant training 6 th March			
24/20	1 /1-2	First Aiders will regularly be	DDSC	lun-24	lun-24
24/20	1.4-2	informed of changes and receive	DDSC	Juli-24	Juli-24
	1.4-5	relevant training 5 th lune			
24/21	152			Doc 24	Sont 24
24/21	1.3-5	awaronoss and training by	DDSC	Dec-24	3ept-24
	4.2-1	awareness and training by			
		the year			
24/22	1 5 2	Area safatu conveners will		Dec 24	2rd Oct24
24/22	1.5-5	Area safety conveniors will	DDSC	Dec-24	3.°°. UCI24
		and reactive relevant training			
		This will improve the sector.			
		This will improve the safety			
		Sth May 2 rd Ostebar			
24/22	110	8. May, 3. October		Dec 24	N4
24/23	1.1-6	L7 Cleanroom: The need for	IOP/EEE	Dec-24	IVIAr-24
	1.2-5	responsive safety briefings			system in place
		and/or all-user meetings will be			
		monitored through mechanisms			
		including forthightly			
	12.1	management meetings		D 04	
24/24	4.2-1	SCAPA: staff weekly meetings	SCAPA	Dec-24	
		held and also regular meetings			
		with user teams.			
24/25	4.2-1	Optics: Add safety updates to	OPTICS	Jan-24	Jan-24
	12.1	weekly group meetings			(ongoing)
24/26	4.2-1	Nanoscience: Principal	Nanoscience	May-24	
		Investigators in each area to			
		email all researchers to ensure			
		they are up to date on risk			
		assessments and re-sign as			
		necessary			
24/27	4.2-1	ABP: Briefing of all staff following	PLASMAS	Mar-24	
		implementation of interlocks. E-			
		mail staff to check they remain			
		familiar with all RAs and similar			
		documents			
D		Iraining and C	ompetence	D 24	C + 24
24/28	4.1-2	Holding a minimum of two	DSC/DDSC	Dec-24	Sept-24
	4.2-1	departmental building safety			
24/20			100	A	N4
24/29		L7 Cleanroom: Add signing of	IOP	Apr-24	iviar-24
		relevant risk assessments to the			
		existing training matrix			
24/20	412		SCADA	Dec 34	
24/30	4.1-2	SCAPA: Start & user training	SCAPA	Dec-24	
		retrached as as subject as a			
		refreshed as required and			
		refreshed as required and attendance at annual SCAPA			
24/24	442	refreshed as required and attendance at annual SCAPA safety lecture.	ODTICE	Dec 24	Cont 24
24/31	4.1-2	refreshed as required and attendance at annual SCAPA safety lecture. Optics: Implement new induction	OPTICS	Dec-24	Sept-24
24/31	4.1-2	refreshed as required and attendance at annual SCAPA safety lecture. Optics: Implement new induction procedure to log new users onto	OPTICS	Dec-24	Sept-24

24/32	4.1.1	Nanoscience – check training is up to date for those conducting risk assessments	Nanoscience	May-24	
24/33	4.1-2	Review and augment training material provision for laboratory	PLASMAS	Dec-24	
E	Performance	Management Indicator			
24/34	2.1-2 2.1-3 2.1-4	Review accidents and incidents	HOD/DSC/DSC	Nov-24	Nov-24
24/35	1.5-3	Keep up to date – Red Flag - risk register lists – chemical, biological, radiation	DSC/ DDSC/BSC/ASC	Dec-24	Nov-24
24/36	1.4-1	Carry out 2 fire drills	UFO	Dec-24	
24/37	1.5-3 4.2-1	Hold 2 safety inspections 4 th March to 15 th March & 19 th August to 30 th August	HoD, DSC, DDSC	Sep-24	Sept-24
24/38	4.2-1 4.2-2	L7 Cleanroom: Indicative 10 new risk assessments across different platforms	IOP	Dec-24	Mar-24 Risk Assessments implemented for incoming equipment and new processes as they come online
24/39	4.2-1 4.2-2	SCAPA: representation at all DSC and ASC meetings.	SCAPA	Dec-24	
24/40	3.1-2	Optics: Implement twice-annual cross-checks between labs to provide independent review of safety an best practise across group	OPTICS	Dec-24	Oct-24
24/41	2.2-1	Nanoscience: review inventory and storage of chemicals in L6 labs	Nanoscience	Dec-24	
24/42	4.2-1 4.2-2	ABP: Implement regular safety discussion meetings for staff to raise issues	PLASMAS	Dec-24	

		In Progress	Outs	standing	
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HOD = Head of Department (Stefan Kuhr)

DHOD = Deputy Head of Department (Robert Martin)

DPM = Departmental Operations Manager (Gabrielle Weir)

DSC= Department Safety Coordinator (John Gillan)

DLPS=Department Laser Protection Supervisor (Jonathan Pritchard)

BSC = Biological Safety Co-ordinator (Yu Chen)

SFM= SCAPA Facilities Manager (Mark Wiggins)

TSM= Technical Support & Safety Manager (John Gillan)

UFO=University Fire Officer (Jeremy Eckford)

ASC=Area Safety Convenors

IOP= Institute of Photonics (Alan Kemp)

Nano=Nanoscience (Rob Martin) Optics=Optics group (Jonathan Pritchard) Plasmas=Plasmas Group (Kevin Ronald)

Physics Health & Safety MANAGEMENT ARRANGEMENTS



This document details the health and safety management arrangements for the safety of staff, students, visitors, 3rd parties and others who are based in the department of Physics.

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COVID-19: CURRENT BUILDING WORKING ARRANGEMENTS

This document covers the normal general health and safety arrangements for the Physics department. In addition, whilst the Coronavirus pandemic is on-going, please also refer to the separate and latest building and induction arrangements in respect of Covid-19.

The latest University information on Covid-19 can also be found on the University web pages: <u>Coronavirus</u> and <u>Safety</u>, <u>Wellbeing and Resilience</u>

PART A: OCCUPATIONAL HEALTH AND SAFETY ARRNAGEMENTS



The University's Occupational Health and Safety Policy (OHS Policy) forms a key part of the University's Occupational Health and Safety Management System and represents its commitment to, and plan of action for, managing health and safety requirements. The OHS Policy documentation comprises the following inter-related levels:

Level 1 – The Occupational Health and Safety Policy Statement; an outline of the Occupational Health and Safety Management System adopted; the Leadership, Responsibilities and Organisation for implementing and communicating the OHS Policy; an outline of Occupational Health and Safety Arrangements that exist for a range of University work activities and issues.

Level 2 – Detailed Occupational Health and Safety Arrangements, issued as individual, topic-specific documents, in the form of Standards, Local Rules and Guidance documents.

Level 3 – Departmental Occupational Health and Safety Arrangements, prepared and issued by individual departments/local areas and reflective of their detailed, local Occupational Health and Safety Arrangements. These inform staff of relevant health and safety issues, together with the systems and procedures in place at departmental/local area level to implement OHS Policy objectives.

The **University's Occupational Health and Safety Policy Statement** commits it to ensuring, so far as is reasonably practicable, the occupational health, safety and welfare of all its staff members and those affected by its undertaking, including students, visitors, contractors and members of the public (hereafter, collectively referred to as the University community). Each Department is required to embrace the objectives of the OHS Policy and to implement its associated arrangements to ensure the objectives are fulfilled.

A fundamental principle underpinning health and safety law is that those who create risks from work activities are responsible for protecting workers and the public from the consequences. A similar principle is adopted by University Court. It accepts that in the course of a departments work or research, risks to health and safety may be created. However, the nature of their undertakings does not exempt those and the Technology and Innovation Centre from statutory duties, therefore, they are expected to manage the risks they create.

A2 UNIVERSITY OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

The University has adopted the Plan, Do, Check, Act (PDCA) model for Occupational Health and Safety Management. This provides a robust framework to enable the University community, at both corporate and departmental level, to promote a positive occupational health and safety culture and to effect continual improvement. The components of this system are summarised in <u>Addendum 1</u>.

A2.1 UNIVERSITY-WIDE ARRANGEMENTS

A number of Standards and Local Rules, prepared by the University's Safety, Wellbeing and Resilience (SWR) division provide detailed arrangements for managing health and safety in relation to applicable legislation and/or high-risk work activities. In addition, there are a number of guidance and supporting documents, prepared by SWR that address the health and safety issues concerning a range of topical subjects or other matters pertinent to the operation of the University. A full list can be viewed at Safety, Health and Wellbeing.

All persons involved in any aspect of a work activity or situation mentioned in the following arrangements should familiarise themselves with the applicable legislation/documentation to ensure TIC complies with such legislation, adheres to required management standards, in the case of a Standard, Local Rule, or required objectives in the case of a Guidance Document.

A2.2 ROLES, RESPONSIBILITIES AND ACCOUNTABILITIES

Please refer to the SWR Standard for Roles, Responsibilities and Accountabilities which defines these areas in relation to all governance, leadership, management (senior and operational), staff, students, contractors and as well as compliance support, consultation, committees and forums. Please also see section <u>C11.0</u> for role specific requirements.



A2.3 STATUTORY ADVISORY COMMITTEE ON SAFETY AND OCCUPATIONAL HEALTH

The remit of the University's Statutory Advisory Committee on Safety and Occupational Health (SACSOH) is to ensure efficient and effective communication and consultation with Trades Unions' (and other workers') safety representatives. The committee advises the University Court on all matters relating to health and safety on campus and oversees the implementation of the OHS Policy. All Faculties and Professional Services have a representative on this Committee.



OCCUPATIONAL HEALTH, SAFETY AND WELLBEING A2.4

Safety, Wellbeing and Resilience(SWR) is committed to promoting a positive health and safety culture throughout the University. It exists to help all departments and Faculties effectively manage health and safety by providing advice and guidance on a full range of workplace activities. Whilst it operates an open-door policy, it is preferred that any health and safety issue is discussed with line-managers in the first instance followed by the relevant Area Safety Co-ordinator, so that the themed area has an opportunity to resolve if possible. Failing this, the Health & Safety Convenor or Technical Support and Safety Manager should be contacted for advice on the issue.

A3 PURPOSE OF THESE ARRANGEMENTS

These Occupational Health and Safety Arrangements are made within the context of the University's OHS Policy and represent the Physics's arrangements for achieving its objectives. Their purpose is:

- to outline the organisational structure for managing health and safety within the department of Physics;
- to identify the types of hazards and risks that could arise from work activities, or other hazards/issues within the department;
- to highlight applicable legislation and University Standards/ Local Rules/Guidance that Physics needs to comply with or take cognizance of to address specific issues; and
- to outline the procedural and practical arrangements for ensuring the health, safety and welfare of the University community within Physics.

A4 SCOPE OF THESE ARRANGEMENTS

These OHS Arrangements apply to all employees (including agency and visiting workers), collaborative knowledge transfer partners and research students associated with Physics. They apply to all Physics research labs, office areas, common, communal and shared facilities. These arrangements do not directly apply to leased areas (research labs or offices) or to any areas under Estates Services owned and controlled areas (e.g. plant rooms, cleaning stores, catering and events functions). However, good co-operation, communication and exchange of relevant information is still expected and required with and between these groups.

A5 HOW TO USE THIS DOCUMENT

Throughout this document you will find sources of additional information and guidance as well as other procedures and arrangements specific to Physics. These are identified as follows:

In a box with a **blue** border, you will find additional guidance, documentation or legislation applicable to the topic.

In a box with a green border, you will find additional Physics procedures related to the topic.

In a box with a **red** border, you will find safety warning or prohibitory notices related to the topic.

PARB B: COMMUNICATION, MONITORING & REVIEW OF ARRANGEMENTS



B1 COMMUNICATION OF ARRANGEMENTS

The Physics health & Safety arrangement document is referred to within the Physics General Induction for Health & Safety. All members of staff, students and where appropriate, other relevant parties are required to read, acknowledge and implement these arrangements. An electronic version is available on the Health and Safety section of the Physics 'I' drive. A hard copy of these arrangements can be borrowed for a short time from Health & Safety Convenor (HSC) if required.



In addition to this document, additional health and safety information is displayed on a health and safety notice board outside of JA827. This is regularly updated and has specific information, such as the departmental management structure, staff safety responsibilities and safety bulletins and other useful information or notices.

Regular and routine messages, updates, news and reminders are communicated through the safety bulletins or via relevant Physics Safety Group lists e.g. Fire Safety Assistants, First Aiders etc. as appropriate.

Departments, groups and external parties will also likely have additional communications on health and safety matters through their own local communication systems.

University wide health and safety communications are issued via Corporate Communications or via Departmental Safety Convenors and Safety Committees.

B2 MONITORING AND REVIEW OF ARRANGEMENTS

Physics will continually assess and monitor the effectiveness and implementation of occupational health and safety arrangements by a number of mechanisms (e.g. incident reporting and monitoring, safety inspections, safety inductions, out of hours requests, spot checks etc). The Physics Safety Committee will play an important part in this, although it will be down to the Head of Department, Line Managers and members of Physics to ensure risks are being controlled suitably and effectively.

B2.1 PHYSICS HEALTH AND SAFETY COMMITTEE

The purpose of Physics Health and Safety Committee is to assist Physics Senior Management and the Health & Safety Convenor in carrying out their functions of advising on and co-ordinating health and safety arrangements within Physics. The committee acts as a representative group primarily for University staff and students, across a number of key and themed areas (including representation from a number of Area Safety Co-ordinators and research student representation). See Addendums and the Physics safety 'I' drive for full details. The Head of SWR is an exofficio member and members are generally replaced on a phased basis, so that acquired knowledge is retained. Other duties include:

- undertaking regular and, as necessary, additional Physics safety inspections and compiling safety inspection reports;
- monitoring the implementation of actions arising from safety inspections and the Physics Safety Action Plan;
- promoting a strong safety culture among staff and students within Physics

The Committee meets 3 times a year and details of Safety Committee membership, next meeting dates and latest draft minutes can be found on the safety 'l' drive.

B2.2 3RD PARTY HEALTH AND SAFETY

Third-party groups within Physics must have a representative within the committee to share and exchange health and safety aspects within their particular group.

B2.3 SAFETY INSPECTIONS AND SAFETY ACTION PLANS

A safety inspection is a scheduled, general examination of a range of health and safety issues pertaining to a particular location or area of work and provides a basis for action to assist the Senior Management of Physics in improving safety management throughout Physics. Its purpose is to determine whether:

- The University OHS Policy, Standards, Local Rules and Physics procedures are being complied with, or in the case of Guidance documents, that the particular objectives are being achieved;
- Physics Occupational Health and Safety Arrangements are being adhered to;
- Significant risks are being appropriately controlled, as indicated in the relevant risk assessment or safe system of work and
- An acceptable standard of housekeeping is being maintained.

Safety inspections within Physics are systematic, wide-ranging, thorough and cover all areas and work activities. The Physics Safety Committee is involved in this process and is responsible for ensuring that **at least** two safety inspections in each calendar year (normally between January and May, then between September and December). A formal written report will be made of the findings of each inspection and will be available to all staff and trade union safety representatives. If individuals and groups are tasked with a follow-up action, then they are requested to complete the action within the timescale allocated.

In addition to safety reports, the Physics Safety Action Plan is a means of presenting and prioritising the longerterm health and safety objectives of Physics with a view to continuously improving its health and safety management system and using its resources efficiently.

University Guidance on Safety Inspections.

Physics's Safety Inspection reports, Action Plan and other related safety inspection guidance can be found on the Safety `l` drive.

B2.4 REVIEW OF ARRANGEMENTS

The Physics Safety Committee in conjunction with the Head of Department and the Health & Safety Convenor, will review and revise these arrangements, as necessary and on a regular basis to reflect the hazard and risk profile of Physics, update and incorporate changes to ensure appropriate arrangements are in place for managing risks.

B3 AUDITING

A safety audit is an independent, in-depth, systematic and critical examination of a health and safety management system, for the purpose of identifying its strengths and weakness and making recommendations for improvement. The Department and external parties may be asked to participate in the SWR programme of audits. All members of staff are required to co-operate fully with the audit team. The resulting recommendations will be implemented by management, so far as is reasonably practicable, so that health and safety management in Physics is continually improved. Self-monitoring, in terms of Physics's accident and incident reports, its safety inspection etc. is also an important part of continuous improvement within the remit of the Physics Health & Safety Committee.

B4 DATA PROTECTION AND DOCUMENT RETENTION

Physics recognises that the efficient management of its records, including those relating to the management of health and safety, is necessary for a variety of functional and statutory reasons. Health and safety records must be kept readily accessible and retrievable within a reasonable time, for examination by safety representatives, auditors or inspectors from enforcing authorities.

Where records are kept only in electronic form, these should be backed up to allow them to be accessed in the event of a serious computer failure. In the case of statutory thorough examination and testing reports, will be protected from unauthorised alteration and be authenticated only by the competent person who carried out the examination. Physics will adhere to the recommended retention periods set out by the Joint Information Systems Committee (JISC) in its Records Retention Schedule for Higher Education Institutions. Furthermore, Physics will manage all documents containing personal information in accordance with the University Data Protection Policy

University Data Protection Policy and Guidance University Guidance on the retention of Occupational Health and Safety Records

All health and safety documentation in Physics will be retained electronically and securely within the relevant sections of the Safety `l` drive. Access to certain areas of this site is restricted and users will be given access to their relevant areas.

PART C: STRUCTURE, RESPONSIBILITIES AND ROLES



Roles, responsibilities and accountabilities are defined in the University Occupational Health and Safety Standard.

C1 UNIVERSITY AND PHYSICS HEALTH AND SAFETY RESPONSIBILITIES

As indicated by the University's Occupational Health and Safety Policy (OHS Policy), the legal responsibility for health and safety management within Physics lies with University Court, in conjunction with key University Executive and Senior Management. Whilst responsibility cannot be delegated to others, the actual function of managing and co-ordinating health and safety issues can and should involve others. In relation to Physics, The Head of Department is responsible in ensuring that both the University OHS policy and the Physics OHS management arrangements are relevant and adhered to by staff, students, visitors and others. In Physics, key operational support staff and departmental staff with safety roles assist with the operational implementation of the OHS policy and these arrangements.

C2 OCCUPATIONAL HEALTH & SAFETY MANAGEMENT STRUCTURE

The current management structure of Physics is in Addendum 2.

C3 HEAD OF DEPARTMENT

The Head of Department is responsible for duties spanning: strategy and leadership, technical services, financial and governance, building management and safety and stakeholder management.

Required Training and/or Competence

- Attendance at the Head of Department Legal Responsibility course by SWR
- Additional training as necessary

Duties include:

- ensuring visible leadership in occupational health and safety management, being actively involved in the continual improvement of performance and able to demonstrate how this duty is achieved;
- ensuring suitable occupational health and safety structures and arrangements are established and maintained to provide effective implementation of the OHS Policy, in line with the University's Occupational Health and Safety Arrangements and Local Rules, and the Occupational Health and Safety Management Arrangements;
- ensuring suitable written safety arrangements are in place, communicated to all staff, signed, dated and reviewed annually;
- ensuring management arrangements for staff performance recognise the occupational health and safety duties as assigned by position or role;
- attending any specific health and safety training provided for Heads of Departments;
- ensuring the OHS Policy is brought to the attention of all new members of staff and that they are reminded of their responsibilities at regular intervals
- ensuring the framework for health and safety arrangements for the building are implemented and
- ensuring Senior Management are kept up to date on the management of health and safety within the building

This category includes Principle Investigators, Theme Leaders, Academic Supervisors and others with academic of technical managerial or supervisory roles.

C4 PRINCIPLE INVESTIGATORS AND MANAGERS

A Principle Investigator (PI) is normally an academic member of staff who is in charge of funds provided by the University, a research funding body or other benefactor. In accordance with the OHS Policy, PI's bear day to day responsibility for ensuring that the practical requirements of all current appropriate legislation, the OHS Policy and Physics OHS Arrangements are implemented.

Required Training and/or Competence

- Attendance at the Principles and Practice of Risk Assessment course by SWR and, where appropriate
- Attendance at the COSHH Risk Assessors course by SWR

For work-related activities within their control, their main duties include:

- Understanding and demonstrating leadership in implementing the relevant requirements of the OHS Policy, Physics OHS Arrangements and legislation;
- Engaging the co-operation and commitment of those under their managerial control;
- Ensuring that the risk assessment process is started for any proposed project, **before** applying for a 14 research grant or adopting an experimental protocol;

- Ensuring that suitable and sufficient risk assessments are carried out, either personally or by another competent person, for all work under their supervision;
- Ensuring that, where appropriate, written safe systems of work are provided, based on the significant findings of relevant risk assessments:
- Educating their junior colleagues to become proficient in assessing the risks inherent in their own work;
- Ensuring that all phases of project works are adequately risk assessed; •
- Ensuring that adequate information, instruction, training and supervision, as appropriate, are • provided to their staff, students and visitors etc.
- Monitoring health and safety performance.

C5 DEPARTMENTAL SAFETY CONVENOR

The Physics Health & Safety Convenor is appointed to advice on and co-ordinate health and safety matters in Physics and works closely with the Technical Support and Safety Manager and other University colleagues in Estates and Safety in this role.

General Function: The Departmental Safety Convenor assists the Head of Department to ensure the University OHS Policy is applied correctly and monitored throughout Physics. They support meetings of the Safety Committee, carry out various health and safety duties; co-ordinate various health and safety arrangements and are the point of contact for SWR within Physics.

Required Training and/or Competence

• Departmental Safety Convenor should be an experienced, senior member of staff and receive training commensurate with their duties.

Main Duties

- Being fully familiar with the OHS Policy (including all relevant Standards, Local Rules and the Physics OHS Arrangements) and shall ensure it is applied correctly and monitored throughout Physics;
- Advising and assisting the Technical Support and Safety Manager/Physics Senior Management/Physics Safety Committee to review periodically health and safety procedures and arrangements within Physics;
- Ensuring the dissemination of appropriate health and safety information to staff, students, KTPs, Industry partners and visitors to Physics and to ensure that all new staff (plus postgraduate students) receive induction into the Physics OHS Arrangements and attend SWR general induction, as soon as possible following their arrival at Physics;
- Monitoring that adequate precautions are taken with regard to any new or existing safety hazard within Physics and to seek advice from SWR, if and where appropriate;
- Co-ordinating and conducting systematic health and safety monitoring by means of regular safety inspections and reporting the findings. This is to identify unsafe/unhealthy conditions or work practices with a view to recommending appropriate remedial action;
- Assist and support the Physics Health and Safety Committee and act on its behalf;
- Monitoring that all plant, equipment and processes within Physics are appropriately maintained and that staff and students receive adequate information, instruction, training and supervision in health and safety matters so as to provide a safe working environment so far as is reasonably practicable;
- Monitoring to ensure that all health and safety records are correctly maintained;
- Monitoring that a high standard of housekeeping is maintained within Physics;
- Monitoring that adequate and suitable personal protective clothing and equipment is available and used within Physics;
- Monitoring that safe working practices/procedures and risk assessments relating to student research project work are being carried out and maintained with particular attention being paid to final year 15 project requirements;

- Acting with the delegated authority of the Head of Department in respect of health and safety matters of an urgent nature;
- Referring to the Head of Department /Physics Senior Management or the nominated deputy any health and safety problem which cannot be resolved in a timescale appropriate to the risk;
- Monitoring that appropriate risk assessment procedures are being undertaken within Physics;
- Carrying out accident, ill health and incident investigations and ensuring that SWR are appropriately notified;
- Monitoring that all Physics staff are given appropriate training for the job they are expected to carry out;
- Ensuring that an appropriate member of staff (normally the Departmental Manager) is available to act as deputy in their absence;
- Co-ordinating the activities of Area Safety Co-ordinators;

Departmental Safety Convenor is: See Roles and Responsibilities - addendum 4

C6 TECHNICAL SUPPORT AND SAFETY MANAGER

The Technical Support and Safety Manager is responsible for day-to-day operations and safety within the building.

Required Training and/or Competence

• Technical Support and Safety Manager should be an experienced member of staff and receive training commensurate with their duties.

Duties include:

- Taking a lead role in resolving complaints, problems and requests
- Contribute to strategic management aspects of building and safety operations.
- Working closely with the Departmental Safety Convenor to ensure building safety arrangements are suitable and appropriate.
- Working closely with Estates Services to ensure all preventative planned maintenance and service contracts are implemented and delivered within the building safely.
- Working closely with research groups and industry partners to foster, develop and maintain a fully functioning open innovation environment which meets stakeholder current and anticipated requirements.

Technical Support and Safety Manager is: Mr John Gillan

C7 AREA SAFETY CO-ORDINATORS / REPRESENTATIVES (ASC'S)

Due to the size of Physics and its range of work and research activities, a number of Area Safety Coordinators have been engaged to represent their specific areas/group within Physics.

General Function: To assist the Area Safety Convenor and Technical Support and Safety Manager fulfil their duties in an efficient and effective manner. They should be allowed, to devote an appropriate amount of time to their health and safety duties.

Required Training and/or Competence

• ASC's should receive training commensurate with their duties.

Main Duties

• To work with the Physics Health & Safety Convenor by co-ordinating safety related activities for a particular area or research group and to act as the point of contact for safety related matters between the group/Physics and Departments. The ASCs will also represent their group on the Physics Safety Committee.

The categorisation of areas and contact details of ASC's can be found on the Physics safety folder on `l` drive16

C8 PHYSICS HEALTH AND SAFETY COMMITTEE

General Function: The purpose of the Physics Safety Committee is to assist the Head of Department in carrying out their function of advising on and co-ordinating health and safety matters within Physics. The committee comprises of a representative from various research and non-research areas of Physics. The Departmental Safety Convenor convenes and chairs the Committee, the Head of SWR is an ex-officio member. Committee members should be replaced on a phased basis, so that acquired knowledge is retained.

Required Training and/or Competence

• The committee should be provided with health and safety training commensurate with their duties. Main Duties

- Assisting the Departmental Safety Convenor in the management of health and safety in Physics;
- Assisting the Department Safety Convenor and the Technical Support and Safety Manager in carrying out their functions;
- Representatives should communicate between their groups and the Safety Committee on Health and Safety matters;
- Undertaking regular safety inspections and compiling reports;
- Undertaking additional safety inspections of particular health and safety management systems, as necessary;
- Monitoring the implementation of actions arising from safety inspections and the Physics Safety Action Plan;
- Promoting a strong safety culture among staff and students within Physics;
- Receiving observations and complaints about safety in Physics and referring these with comments to Physics Senior Management; and
- Referring to the University Occupational Health and Safety Consultative Committee any disagreement on matters of safety between itself and the officer responsible.

Details of the Physics Safety Committee function are given in Addendum 3 and member composition in Addendum 4.

C9 ALL MEMBERS OF STAFF AND STUDENTS

The Department requires that all members of staff, students, KTPs and Industry Partners adhere (where applicable) to these arrangements and co-operate on all relevant health, safety and welfare arrangements established for Physics. Staff and students are also required to report hazards, other inadequacies in the working environment and accidents, without delay, to their Line Manager, Area Safety Co-ordinator or to the Technical Support and Safety Manager.

Each member of staff has a personal and legal responsibility (under section 7 of the Health and Safety at Work etc. Act 1974) to take reasonable care for their own health and safety and for that of others who may be affected by their activities or omissions.

Any member of staff or student contravening any aspect of the University OHS Policy may be subject to University disciplinary procedures (and possibly legal action). It is also an offence for **any person** (including students) to interfere with or misuse anything that is provided in the interests of safety.

Although **everyone** has a part to play in ensuring a state of health and safety is maintained, Physics personnel have particular duties. The following section identifies and outlines some of these key roles. Further details of these and other roles are available from the Departmental Safety Convenor.

Specific names and contact details can be found on the Physics safety folder on `I` drive. You are free to make direct contact with those involved regarding issues for which they have particular responsibility.

Required Training and/or Competence

• Departmental Safety and Group Induction courses and any other training required.

C10 3RD PARTY HEALTH & SAFETY REPRESENTATIVES

Organisations and businesses which are based and operating from or within Physics, have health and safety responsibilities in relation to their employees and to all other persons in and around Physics that could be affected by their business activities.

Estates Services, Research, Knowledge Exchange Services and SWR are normally involved in the initial stages of space allocation and 3rd party agreement documents. Following completion of this, the exchange of relevant health and safety information between the University, Physics and the 3rd party takes place. For each 3rd party in Physics, an individual will be identified and appointed as the health and safety representative for the group.

Required Training and/or Competence

• Should be provided with health and safety training commensurate with their duties.

Representative duties include:

- Taking a visible and lead role in overseeing and managing health and safety arrangements for their group.
- Consult and seek competent health and safety advice on arrangements and activities (where applicable).
- Have suitable and appropriate safety documentation in place for work activities (e.g. riskassessments)
- Attend and contribute to health and safety committee.
- Review and ensure suitable local arrangements are in place for induction, staff training, fire safety assistance and First Aid requirements.
- Undertake routine and regular safety inspections of work area(s).
- Have suitable reporting procedures (or be aware of the University reporting procedures) in place for accidents, near misses and dangerous occurrences.
- Participate in the exchange of relevant H&S information with the University and Physics.

Please refer to the 'Roles & Responsibilities' documents on the safety section of the Physics safety 'I' drive.

C11 OTHER UNIVERSITY RESPONSIBILITY POSTS AND ROLES (IN ALPHABETIC ORDER)

(Univ.staff & students) for the current list of Physics safety related roles and post holders. Please note that all roles and responsibilities may not be applicable to third parties. Please contact the Physics Department Safety Convenor or SWR if in doubt.

C11.1 BIOLOGICAL AND CHEMICAL SAFETY ADVISER

General Function: To co-ordinate the Physics biological and chemical safety arrangements within the appropriate themes areas, to ensure they are adequate and in compliance with current statutory and OHS Policy duties.

Required Training and/or Competence

- Sufficient training and experience to be aware of the hazardous properties of biological agents and the appropriate risk control measures;
- Attendance at the COSHH Risk Assessors course by, or
- Attendance at the COSHH Awareness course by SWR

Main Duties

- Providing early notification to SWR of any proposed installation of new microbiological safety cabinets, or relocation of existing ones;
- Liaising with the Biological Safety Adviser on all matters involving biological safety;
- Attending and representing relevant group/area on the Biological and Chemical Safety Forums;
- Ensuring that each individual wishing to work with biological agents and biological materials, registers with SWR, before commencing such work;
- Ensuring that relevant persons receive adequate information, instruction, training and supervision before commencing work using biological agents and biological materials;
- In association with the COSHH Assessor, ensuring that COSHH-based guidance on biological agents and biological materials has been made available to relevant personnel (e.g. '*Biological agents: Managing the risks in laboratories and healthcare premises*' published by Advisory Committee on Dangerous Pathogens).

Biological and Chemical Safety Adviser is: Dr Yu Chen Deputy Biological and Chemical Safety and GM Adviser is: Dr Brian Patton

C11.2 CLINICAL AND HAZARDOUS WASTE CO-ORDINATOR

General Function: To co-ordinate the Physics's clinical and hazardous waste arrangements, to ensure they are adequate and in compliance with current statutory and OHS Policy duties.

Required Training and/or Competence

• Sufficient training and experience to be aware of the hazardous properties of clinical and hazardous waste and the appropriate risk control measures.

Main Duties

- Liaising with the SWR on the appropriate disposal of waste;
- Ensuring that safe systems of work are in place for segregating and containing waste in Physics;
- Ensuring that safe procedures are adhered in the packaging, storage and movement of waste to designated collection points;
- Accompanying each consignment of waste to a designated collection point for handover to the licensed waste contractor;
- Dealing with any spillage, whether inside or outside the premises, according to a safe system of work and if necessary seek advice from the SWR Biological Safety Adviser;
- Maintaining a record of all clinical and hazardous waste processed through the Clinical and Hazardous Waste Service.

Clinical and Hazardous Waste Co-ordinator is: Mr John Revie

C11.3 COSHH ASSESSMENT CO-ORDINATOR

General Function: To co-ordinate Physics's arrangements for work with hazardous substances, to ensure compliance with the Control of Substances Hazardous to Health Regulations (COSHH).

Required Training and/or Competence

- Attendance at the COSHH Risk Assessors course by SWR Main Duties
- Identifying the need for COSHH assessments within Physics
- Monitoring that COSHH assessments are carried out to a suitable and sufficient standard;
- Maintaining a Physics register of COSHH assessments for the benefit of knowledge exchange between colleagues;
- Instigating a review of COSHH assessments when changes may mean they are no longer valid;
- Advising colleagues on the hierarchy of control measures to reduce risks from substances hazardous to health;
- Advising on COSHH training needs within Physics.

COSHH Assessment Co-ordinator is: Principal Investigators and Line Managers have duties to ensure COSHH assessments have been done, are readily available and are appropriate for the work activities being carried out.

C11.4 DISPLAY SCREEN EQUIPMENT ASSESSOR

General Function: To co-ordinate Physics's arrangements to ensure compliance with the Health and Safety Display Screen Equipment Regulations.

Required Training and/or Competence

- Attendance at the Computer Workstation Assessors course by SWR. Main Duties
- Identifying and maintaining a record of all users of display screen equipment within Physics;
- Carrying out individual workstation assessments for all users;
- Co-ordinating the implementation of measures recommended to reduce identified risks;
- Reviewing assessments when changes may mean they are no longer valid;
- Advising colleagues on the general use of display screen equipment, and computer workstation training needs within Physics.

Display Screen Assessors is: Technical Support and Safety Manager

C11.5 DSEAR ASSESSOR

General Function: To co-ordinate Physics's arrangements for work with hazardous substances, to ensure compliance with the Dangerous Substances and Explosives Atmospheres Regulations (DSEAR).

Required Training and/or Competence

- Attendance at the Principles & Practice of Risk Assessment course and the COSHH Risk Assessors course, both by SWR;
- Attendance at the Fire Extinguisher Practical Training, arranged by SWR;
- Sufficient training and experience to be aware of the hazardous properties of dangerous substances. Main Duties
- Identifying the need for DSEAR assessments within Physics, in conjunction with the Fire Safety Adviser;

- Ensuring that DSEAR assessments are carried out to a suitable and sufficient standard;
- Maintaining a Physics register of DSEAR assessments for the benefit of knowledge exchange between colleagues;
- Instigating a review of DSEAR assessments when changes may mean they are no longer valid;
- Advising colleagues on the hierarchy of control measures to reduce risks from dangerous substances;
- Being familiar with the types and uses of portable fire-fighting equipment and be trained in its correct use;
- Reporting any defects with existing fire safety provisions e.g. defective fire doors, missing signage, damaged fire extinguishers, etc. to the Physics Fire Safety Co-ordinator;
- Communicating to the Physics Fire Safety Co-ordinator any changes to Physics procedures, functions or use of accommodation that may impact on existing fire safety arrangements, in advance of any changes being implemented.

DSEAR Assessor is: This is devolved to groups to ensure that areas in Physics carrying out specific tasks have assessed them appropriately.

C11.6 ESTATES HELPDESK LIAISON PERSON

General Function: To co-ordinate communications with Estates Services on health and safety issues relating to Physics premises, fabric and services.

Required Training and/or Competence

- An awareness of the operations of Estates Services and the ability to progress reported matters. Main Duties
- Acting as the point of contact for receipt of information about defects in Physics premises, fabric and service;
- Raising the necessary Service Request or Maintenance Request to have the defect corrected, or to inform the Estates Helpdesk about an imminent danger;
- Liaising with Estates Services personnel on prioritisation, timescales and completion of corrective actions.

Estates Helpdesk Liaison Person is: Technical Support and Safety Manager

C11.7 FIRE SAFETY CO-ORDINATOR

General Function: The Fire Safety Co-ordinator co-ordinates the Physics's fire safety arrangements, in conjunction with the University Fire Safety Adviser (UFSA), to ensure they are adequate for the fire risk profile. Their duties include assisting the Disability Advisers of Physics with the preparation of personal emergency evacuation plans (PEEP) for those with special needs and for developing a network of fire safety assistants.

Required Training and/or Competence

- Attendance at the Fire Safety Co-ordinators Training arranged by SWR;
- Attendance at the Fire Extinguisher Practical Training arranged by SWR.

Main Duties

- Assisting the Senior Management of Physics to periodically review the fire safety arrangements;
- Assisting the with the preparation of personal emergency evacuation plans (PEEP) for students, staff, or where appropriate, visitors with special needs;
- Providing information to the UFSA on the specific functions and activities of each Physics area, to enable Physics fire risk assessments to be produced;
- Being familiar with the layout of Physics building and building fire risk assessments and their specific action plans and any arrangements regarding emergency procedures in relation to evacuation in the event of fire;
- Communicating to the UFSA and Estates Services any changes to Physics procedures, functions or use of

accommodation that may impact on existing fire safety arrangements, in advance of any changes being implemented;

- To develop a network of Fire Safety Assistants who will assist in stewarding the safe and efficient evacuation of all persons from all Physics areas in the event of a fire alarm or other such emergency evacuation;
- Being familiar with the types and uses of portable fire-fighting equipment and be trained in its correct use;
- Reporting any defects with existing fire safety provisions e.g. defective fire doors, missing signage, damaged fire extinguishers, etc. to Estates Services or SWR, where appropriate;
- Producing an annual written report covering the progress and development of fire safety-related issues for submission of Physics's Annual Health and Safety Report;
- Advising on fire safety training needs within Physics.

Fire Safety Co-ordinator is: Technical Support & Safety Manager

C11.8 FIRE SAFETY ASSISTANT(S)

General Function: Fire Safety Assistants assist the Fire Safety Co-ordinator in maintaining fire safety precautions and in the orderly and complete evacuation of Physics during fire alerts.

Required Training and Competence:

• Attendance at the Departmental Fire Safety Training arranged by SWR

Main Duties:

Fire safety monitoring:	During a fire alert:		
 Being aware of escape routes and fire signage within Physics areas 	 Checking allocated areas for persons unaware of a fire alert 		
 Removing or reporting to the FSC any identified fire safety hazards 	Assisting with orderly evacuation of the building		
Monitoring that fire safety precautions are being maintained	 Reporting any knowledge of source of fire to the Fire Safety Co-ordinator 		

Fire Safety Assistants – Details can be found on the Physics safety `l` drive

C11.9 GAS SAFETY CO-ORDINATOR

General Function: To co-ordinate Physics's arrangements for the use of compressed and natural gas to ensure they are safe, adequate and compliant with current statutory duties and recognised good practice.

Required Training and Competence:

- Successful completion of Gas Safety Awareness/Practical
- Sufficient training and practical experience in handling compressed gas cylinders Main Duties
- Being familiar with current good practices and relevant reference materials;
- Providing advice and general supervision to colleagues in the use, handling, storage, locating, transporting and changing of gas cylinders;
- Advising on the gas safety training needs of new and existing users within Physics;
- Monitoring the state of control measures installed to prevent or give warning of oxygen depletion;
- Ensuring all compressed gas cylinders are appropriately marked;
- Ensuring all compressed gas cylinders are stored in the correct designated area with signage
- Being familiar with the location of gas isolating valves;
- Ensuring that formal and statutory procedures for routine maintenance and examination of safety critical

parts of gas cylinder systems e.g. gas regulators, are implemented;

- Recording routine maintenance and examinations of gas cylinder systems;
- Maintaining a record of all-natural gas appliances and liaising with Estates Services on any changes and on annual maintenance schedules.

Gas Safety Co-ordinator is: This is devolved to groups to ensure that areas in Physics carrying out specific manual handling tasks have assessed them appropriately.

C11.10 HAZARDOUS WASTE CO-ORDINATOR

General Function: To co-ordinate Physics's hazardous waste arrangements, to ensure they are safe, adequate and compliant with current statutory and OHS Policy duties.

Required Training and/or Competence

• Sufficient training and experience to be aware of the hazardous properties of redundant substances and the appropriate risk control measures required during transportation to the Hazard Waste Adviser.

Main Duties

- Ensuring that safe systems of work are in place for containing and segregating, redundant substances in Physics approved areas;
- Ensuring that safe procedures are adhered to in packaging, uplift and transportation of each consignment of redundant substances to be transported to the contracted Hazardous Waste Adviser;
- Accompanying each consignment of redundant substances, to the point of handover to the contracted Hazardous Waste Adviser and carrying relevant chemical hazard warning and spillage handling information for reference in the event of an accident;
- Dealing with any spillage, whether inside or outside a vehicle, according to a safe system of work and if necessary seeking advice from contracted Hazardous Waste Adviser and/or SWR;
- Completing and retaining copies of S15 Forms, used to notify transfer of consignments to the contracted Hazardous Waste Co-ordinator.

Hazardous Waste Co-ordinator is: John Revie.

C11.11 LEV TESTING CO-ORDINATOR

General Function: To co-ordinate the Physics arrangements for regular checks, periodic thorough examinations and maintenance of Local Exhaust Ventilation (LEV) systems.

Required Training and/or Competence

• Sufficient training and practical experience in the use of fume cupboards. Main Duties

- Producing and keeping up to date an inventory of all forms of LEV system;
- Maintaining a record of the types of substances extracted by each LEV system;
- Ensuring that regular anemometer checks are carried out and recorded for each LEV system;
- Ensuring that each LEV system is marked with appropriate warnings to indicate maximum openings for each class of substance;
- Ensuring that LEV systems are maintained in an efficient state, in efficient working order, in good repair and in a clean condition;
- Ensuring that each LEV system is thoroughly examined and tested by a competent person, at least once every 14 months, or as legal requirements dictate;

- Ensuring that LEV systems are safe to work on by maintenance personnel and signing permits-to-work to this effect;
- Maintaining and keeping, for at least 5 years, a record of such examinations and tests, along with the associated repairs;
- Advising colleagues on the safe use of LEV systems;
- Advising on LEV training needs within Physics.

LEV Testing Co-ordinator is: Technical Support and Safety Manager

C11.12 LIFTING OPERATIONS CO-ORDINATOR

General Function: To co-ordinate users and operations in Physics involving lifting operations and the arrangements for regular checks, periodic thorough examinations and maintenance of lifting equipment and accessories.

Required Training and/or Competence

• Sufficient training and practical experience in lifting operations and maintenance of equipment requirements.

Main Duties

To ensure all lifting operations involving lifting equipment are:

- properly planned by a competent person;
- appropriately supervised;
- carried out in a safe manner;
- lifting equipment and accessories must be appropriate and suitable for the task;
- lifting equipment and accessories are appropriately marked to indicate 'safe working load' (SWL) and the maximum load the equipment can safely lift.
- Equipment is positioned or installed in such a way as to reduce the risk, as far as reasonably practicable, of the equipment or load striking a person, or of the load drifting, falling freely or being unintentionally released.
- The complexity of the plan and the extent of the resources used to manage risk must reflect the complexity and difficulty of the lifting operation.

Lifting Operations Co-ordinator is: Technical Support and Safety Manager

C11.13 MANUAL HANDLING ASSESSOR(S)

General Function: The main function of this Assessor is to co-ordinate Physics's arrangements for ensuring compliance with the current Manual Handling Operations Regulations

Required Training and/or Competence

• Attendance at the Manual Handling Assessors course arranged by SWR. Main Duties

- Identifying manual handling activities or tasks where there is the possibility of risk of injury, to assess those risks and then make suitable recommendations to avoid or reduce risks for employees and others;
- Advising on the general use of mechanical handling aids;
- Providing information on manual handling to colleagues;
- Advising on manual handling training needs within Physics

Manual Handling Assessor: This is devolved to groups to ensure that areas in Physics carrying out specific manual handling tasks have assessed them appropriately.

C11.14 OVERSEAS BUSINESS TRAVEL CO-ORDINATOR

General Function: To co-ordinate the Physics's arrangements for ensuring that relevant health and safety information is provided to and received from staff travelling overseas on University business and for liaising with them whilst away.

Required Training and/or Competence

• No specific training, but having the ability to arrange for the implementation of contingency plans, in the event of an emergency.

Main Duties

- Ensuring business travellers are aware of and apply the good practice outlined in relevant University documentation and guidance;
- Safe keeping of essential contact details (home address, destination address, telephone number, itinerary, copies of passport and tickets etc.) of business travellers, whilst overseas;
- Ensuring that information about specific vaccinations and/or additional health precautions is provided to business travellers, several months in advance (advice can be obtained from the Occupational Health Service);
- Ensuring that a suitable and sufficient risk assessment has been carried out for the work to be undertaken and/or acknowledgement that a safe working environment can be provided by a host organisation;
- Ensuring that contingency plans are in place and enacted in the event of an emergency.

Overseas Business Travel Coordinator is: Departmental Manager

C11.15 PLACEMENT ORGANISER

General Function: The essential role of a Placement Organiser is to administer arrangements that are designed to enable Senior Management of Physics to be reasonably satisfied that host employers will ensure the health, safety and welfare of students on placement.

Required Training and/or Competence

- Attendance at the Principles & Practice of Risk Assessment course by SWR
- Additional training as necessary

Main Duties

- Being familiar with the content of the Local Rule: Safety Requirements for the Placement of Students;
- Checking with the Finance Office that appropriate insurances are in place;
- Holding initial discussions with each host employer about their systems for ensuring the health, safety and welfare of students;
- Ensuring that a Health and Safety Checklist is sent to host employers for completion;
- Assessing the answers on the returned Health and Safety Checklists and following up any 'No' responses;
- Where placement is approved, providing a letter of authority to start each placement to both the student and host employer;
- Ensuring that host employers are given all appropriate health information and any necessary advice well in advance of the placement;
- Arranging a health and safety briefing for each student and recording the content and attendance;
- Ensuring the return of each student induction checklist; noting and auctioning any concerns;
- Making arrangements to visit students on placement, where practicable;
- Taking decisive action to remove students from host employers, if significant risks are not adequately
controlled;

- Arranging a de-briefing with each student to be appraised of the health and safety management standards and raising any issues with host employers, if necessary;
- Sending a copy of the Health and Safety Checklist to host employers on an annual basis;
- Providing a risk assessment for all student placements overseas.

Placement Organiser : Secretary to Head of Department

C11.16 PORTABLE APPLIANCE TESTING (PAT) CO-ORDINATOR

General Function: To co-ordinate the Physics's arrangements for testing portable appliances, to ensure they fulfil current statutory duties, OHS Policy duties, plus good practice

Required Training and/or Competence

• A general awareness of the requirements to provide safe work equipment and the ability to co-ordinate arrangements.

Main Duties

- Producing and keeping up to date an inventory of all items of portable electrical equipment;
- Making arrangements for the testing of portable electrical equipment by a competent person, at appropriate intervals;
- Ensuring that new items of portable electrical equipment are visually inspected by a competent person, before going into service;
- Advising colleagues on the testing of portable electrical equipment and the location of electrical isolating switches.

PAT testing is co-ordinated either internally (via existing Departmental Arrangements, where suitable arrangements exist) or externally (if no suitable arrangements exist) via the Estates Department. External charges for PAT testing will be initiated via a Purchase Order to the external contractor. All groups should retain records of the PAT Testing and have these available for inspection if requested.

Portable Appliance Testing (PAT) Co-ordinator is : Technical Support and Safety Manager

C11.17 PPE/RPE CO-ORDINATOR

General Function: To co-ordinate the Physics arrangements for risk assessing, selecting, issuing, storing and maintaining Personal Protective Equipment/Respiratory Protective Equipment (PPE/ RPE).

Required Training and/or Competence

- Attendance at the COSHH Risk Assessors course by SWR, or
- Attendance at the COSHH Awareness course by SWR;
- A good understanding of the current statutory duties and guidance governing the use of PPE/RPE, along with practical experience of specifying, selecting and using such equipment.

Main Duties

- Identifying work activities or tasks where risk assessment has indicated the use of PPE/RPE as an appropriate risk control measure;
- Checking that risk assessments specify appropriate types of PPE/RPE;
- Advising on the selection, use, storage and maintenance of PPE/RPE;

- Advising on the need for and arranging face-fit tests, where necessary;
- Advising on and arranging to fulfil PPE/RPE training needs within Physics.

PPE/RPE Co-ordinator is: Principle Investigators or Line Managers. PPE/RPE should be assessed and the need and type appropriate for the task.

C11.18 PUWER CO-ORDINATOR

General Function: Making and co-ordinating the necessary organisational and procedural arrangements to enable Physics to fulfil all its duties under the current Provision and Use of Work Equipment Regulations (PUWER).

Required Training and/or Competence

- Attendance at the Provision and Use of Work Equipment course by SWR;
- A good understanding of the current statutory duties and guidance governing the use of work equipment, along with practical experience of specifying, selecting and using such equipment.

Main Duties

• To co-ordinate the Physics's arrangements for selecting, specifying, purchasing, risk assessing, installing, maintaining, inspecting, training in the use of, and disposing of work equipment.

These arrangements will include ensuring that work equipment:

- is selected to be suitable for its purpose and conditions of use;
- is kept in a suitable condition and any maintenance log kept up to date;
- is formally inspected under specified circumstances;
- is restricted to trained designated persons, where specific risks cannot be eliminated or physically controlled;
- users receive appropriate information, instruction and training;
- complies with legislation implementing any relevant EC directive;
- has risks from any dangerous parts and other specified hazards appropriately controlled;
- has the required start, stop, emergency stop, control and isolation actuators, where appropriate;
- is stable, where necessary, for purposes of health and safety;
- is provided with sufficient lighting to avoid risk;
- can be maintained in a safe manner;
- has appropriate health and safety markings and warnings.

PUWER Co-ordinator is: This is devolved to groups to ensure that areas in Physics carrying out specific tasks have assessed them appropriately.

C11.19 RADIATION PROTECTION SUPERVISOR(S)

These appointments must be made in writing by the Head of Department and are a requirement of current legislation and University Local Rules. The roles are to supervise all work and research activities involving ionising and non-ionising radiation within Physics and to ensure, activities are carried out according to the appropriate standards.

Required Training and/or Competence

• A knowledge and understanding of all relevant sections of the Ionising Radiation Regulations 2017 (IRR2017) or non-ionising legislation and appropriate Local Rules;

- An ability to exercise the required level of supervision of ionising and non-ionising (as appropriate) radiation work;
- An understanding of the precautions necessary for particular work being performed and the degree of exposure restriction achieved from using the precautions.

Main Duties

- Ensuring that work with ionising radiations is carried out in accordance with the requirements of IRR2017;
- Ensuring that relevant Local Rules are observed;
- Maintaining records of all radioactive sources within Physics;
- Performing routine workplace radiation (dose rate) monitoring and recording results;
- Making arrangements for the testing of radiation monitoring equipment;
- Checking the operation of safety systems and warning systems and recording results;
- Making arrangements for the statutory leakage testing of radioactive sources;
- Arranging for the issue and return of personal dosimeters, worn by employees, at the start and finish of the dosimeter wear period;
- Co-ordinating with any relevant contractors on site;
- Discussing with the Radiation Protection Adviser (RPA) significant issues or changes to work practices or equipment;
- Liaising with SWR Radiation Protection Officer.

JA Radiation Protection Supervisor is : Dr Mark Wiggins TIC Radiation Protection Supervisor is : Prof Kevin Ronald This role is appointed by the Head of Department.

C11.20 Laser Protection Supervisor(s)

The Head of Department is required to appoint, in writing on form RP2, suitable personnel as Departmental Laser Protection Supervisors (DLPS) and Area-DLPS (where appropriate) to assist locally with the implementation of the Local Rule at Departmental level. The area-DLPSs serve also as deputies for the DLPS.

Prior and during their appointment, the DLPSs must receive appropriate training for their work and should be part of their Department's Safety Committee.

Required Training and/or Competence

- Attendance at the Laser Safety course by SWR;
- A good understanding of the current statutory duties and guidance governing the use of Lasers, along with practical experience of specifying, selecting and using such equipment.

General Duties of LPS:

- Co-ordinate NIR safety management procedures at department level.
- Prepare and issue Departmental Local Rules for NIR sources and work. These can be separate or part of Departmental Regulations.
- Liaise with the Radiation Protection Officer, RPA and other external bodies in relation to NIR safety.
- Review NIR risk assessments
- Act as a point of contact for departmental NIR queries and for new NIR workers.
- Retain an up-to-date inventory of NIR sources.
- Co-ordinate with Safety Services on University NIR training requirements. They may also be involved with NIR training at departmental level along with Principal Investigators, Academic Supervisors, Trade Supervisors or Line Managers.
- Co-ordinate departmental safety audits with Safety Services.

- Co-ordinate with the work of contractors or service engineers involved with NIR sources or NIR facilities.
- Liaise with the Head of Department to ensure they are kept informed of all NIR issues.

Heads of Department retain legal responsibility for all health and safety issues at departmental level; the PI also retains a high level of responsibility; whilst the DLPS and Area-DLPS roles are purely a functional one to assist the HoD in the management of this area of safety.

Department Laser Protection Supervisor;	Prof Thorsten Ackemann	
Area-/Deputy DLPS;	Dr Jonathan Pritchard (EQOP)	
	Dr Konstantinos Lagoudakis (Nanoscience) Dr Wentao Li (SILIS/SCAPA) Prof Alan Kemp (IOP)	

C11.21 UNIVERSITY SUPERVISING OFFICER (SERVICE PROVIDER CO-ORDINATOR)

University Supervising Officers (USO) are staff members that play a key role in the co-ordination and cooperation process that ensures risks to Service Providers from University activities and risks to staff, students, visitors, the public and property from Service Providers' activities are adequately controlled. See also Contractors and Service Providers in this document.

Required Training and/or Competence

It is advised that, as a minimum, newly appointed University Supervising Officers should be given an induction into their role, by someone from SWR or Estates Services.

Main Duties

- Being familiar with the contents of Guidance: Engaging Service Providers and Local Rule: Safe Practice
- Liaising with Service Providers at all stages of particular contract work, to champion the University's and/or Physics's health and safety interests;
- Identifying the hazards and evaluating the risks posed to Service Providers by Physics premises, specific accommodation, activities, equipment, procedures etc;
- Understanding the risks posed to staff, students, visitors the public (University community) and property arising from the Service Provider's work and the kinds of precautions to be taken by the Service Provider to control those risks;
- Receiving, from Service Providers, the significant findings of relevant risk assessments, product safety data sheets, method statements or procedures;
- Being aware of good practice in relation to the work being undertaken by Service Providers they are liaising with;
- Monitoring that the precautions referred to in the risk assessment and/or method statement, submitted by Service Providers, are being adhered to;
- Communicating, when necessary, with all who may be affected regarding the hazards and risks arising from a Service Provider's work;
- Suspending work where serious and imminent danger could arise;
- Being aware of their own limitations in relation to the above bullet points and be willing, where necessary, to obtain competent assistance from others.

University Supervising Officer is: Technical Support and Safety Manager

C11.22 FIRST AIDER

Required Training and/or Competence

• Obtain and maintain a valid EFAW or FAW certificate or other relevant certificate e.g. outdoor First Aid, based on the First Aid Needs Assessment.

Main duties

- Attend First Aid incidents when called to do so
- Administer First Aid as first respondent within the limitations of their First Aid Training
- Promptly and effectively deploy the Automatic External Defibrillator in accordance with training where necessary
- Notify the University First Aid Co-ordinator and the DSC in the event of a First Aid incident
- Organise for the First Aid box/kit to be adequately stocked and regularly monitor its contents
- Ensure First Aid notices are displayed beside First Aid boxes/kits
- If the injured/ill person is taken to hospital by ambulance or taxi ensure the someone accompanies them

First Aider - Details can be found on the Physics safety `I` drive

C11.23 MENTAL HEALTH FIRST AIDER

In general, the role of a Mental Health First Aider in the workplace is to be a point of contact for an employee who is experiencing a mental health issue or emotional distress. This interaction could range from having an initial conversation through to supporting the person to get appropriate help. As well as in a crisis, Mental Health First Aiders are valuable in providing early intervention help for someone who may be developing a mental health issue. Mental Health First Aiders are not trained to be therapists or psychiatrists but they can offer initial support through non-judgemental listening and guidance.

Required Training and/or Competence

• Obtain and maintain a valid MHFA certificate or other relevant certificate based on the First Aid Needs Assessment.

General duties

- Spot the early signs and symptoms of mental ill health
- Start a supportive conversation with a colleague or student who may be experiencing a mental health issue or emotional distress
- Listen to the person non-judgementally
- Assess the risk of suicide or self-harm
- Encourage the person to access appropriate professional support or self-help strategies. This might include encouraging access to internal support systems such as in-house counselling services
- Escalate to the appropriate emergency services, if necessary
- Maintain confidentiality as appropriate
- Complete critical incident documents as and when necessary
- Protect themselves while performing their role at no time does the Mental Health First Aider role (or anyone trained in MHFA skills) supersede company policy: first and foremost, they are all employees of the company.

Mental Health First Aider – Details can be found on the Physics safety `I` drive

C11.24 MORR CO-ORDINATOR

The MORR Coordinator is an administrative role to assist the HoD with implementing this Standard. Where appointed, the MORR Coordinator has delegated responsibility to:

- carry out and record evidence of specific checks of departmental drivers and where applicable, their private vehicles (see appendix 1A);
- create and maintain a list of 'approved' drivers, which is shared with the Finance Directorate;
- maintain records in conjunction with the University's data protection procedures (see appendix 1A);
- maintain a data base of completed risk assessments;

• maintain accurate records of vehicles under the control of the Department.

MORR Co-ordinator is: Departmental Manager

C11.25 DEPARTMENT DRIVERS

All drivers of University, department, hired or leased vehicles, or those who may use their private vehicle for work purposes must:

- cooperate with the requirements of this Standard;
- observe the Highway Code and current driving legislation;
 - complete the 'Driver's Declaration Form' annually (see appendix 2) and forward it to their MORR Coordinator, detailing the following information and evidence: driving licence details, including a DVLA 'check code';
 - ii. details of any private car(s) which may be used on University business to allow the MORR Coordinator, to carry out a 'Tax and MOT' check (where applicable)
 - iii. for private vehicles use, a copy of their current motor insurance certificate, detailing 'business car insurance' and redacting any additional names (e.g. spouses, dependants).
- inform their MORR Coordinator of any relevant changes to their insurance, MOT, tax and driving licence details;
- inform their line manager and MORR Coordinator if they are suffering from any medical condition, or taking any medication that might adversely affect their ability to drive safely and refrain from driving;
- carry out a daily check of departmental and leased vehicles prior to use and update the vehicle log book. (see appendices 4A & 4B);
- report all accidents, collisions and near misses to both their Line Manager and DSC;
- seek advice from the Occupational Health Service on any health concerns that may affect their ability to drive.

Departmental Drivers – Details can be found on the Physics safety `l` drive



D1 INTRODUCTION & GENERAL ARRANGEMENTS

Physics is a multidisciplinary department, which covers a range of activities from low to high hazard. This section covers the types of hazards that are present within this environment and how these are managed in Physics. The section begins with the general arrangements and hazards that are applicable to all Physics occupants and then moves onto more specific hazards that are applicable to laboratories, certain groups and work activities as you move forward through the section.

D1.1 ACCESS

Normal opening times for the university buildings are Monday to Friday 08.00-18.00hrs. Access outside of the normal core opening hours is controlled by an authorised "out of hours access" system.

Physics "out of hours" working times are defined as follows:

- **Standard** "out of hours working" is any work within Physics (office or lab work) between 06.00-08.00hrs and 18.00-22.00hrs and Monday Friday, and at any time between 08.00–22.00hrs on weekends and Bank Holidays.
- Exceptional "out-of-hours working" is defined as any work within Physics (lab or dry work) between 22.00-06.00hrs, Monday-Sunday. Work during these hours should only be carried out in exceptional circumstances or where approval has been authorised by the Head of Department as additional notifications to Security are required for this.

D1.1.1 ACCESS: STANDARD OUT OF HOURS - (WEEKDAYS, 18.00-22.00HRS)

Any PGR/PGT or student requiring to work during standard out-of-hours **MUST**:

- a) Complete an application for out of hours, see D.1.1.3.
- b) Phone Security Control on Ext. 3333 to log their presence in the building.
- c) Repeat the above process i.e. log out again by with a phone call to notify of their exit from the building.

The above procedure is essential to ensure accurate numbers and the locations of individuals are known to the University Security staff. University Security staff patrol the building out-of-hours and spot checks are also routinely carried out to confirm that this policy is being adhered to by occupants. It is essential that Security staff are aware of who is working, where in the building at any given time for personal safety reasons and in the event of fire or other emergency.

All university staff, students and building occupants must be in possession of their identity card.

The only exception for a student being in the building out with normal working hours, without permission is where the student is WITH and being supervised at the time by their supervisor. In this situation, it is the Supervisor's responsibility to ensure that Security Control has been appropriately notified of who is in the building and where.

D1.1.2 ACCESS: EXCEPTIONAL OUT OF HOURS (WEEKENDS and WEEKDAYS 22.00-06.00HRS)

The buildings are locked up and alarmed at 22.00hrs. Anyone wishing to:

- a) remain in the building after 22.00hrs or
- b) who needs access to the building before 06.00hrs or
- c) requires to access the building at the weekend or during a public holiday (excluding Christmas and New Year which requires Head of Department's approval), must sign in at Security Control (Livingston Tower) and must contact Security Control on Ext. 3333 when leaving or exiting the building.

D1.1.3 APPLICATION FOR OUT-OF-HOURS ACCESS

All postgraduates/students who require access to out with normal working hours, will need to complete a SharePoint out of hours access form. There are certain health and safety training requirements and other conditions that need to be meet and adhered to as part of the agreement for out of hours access in the building. The PI or Line Manager must also give their permission for the individual to be permitted access.

Once granted, individuals must produce the identity card when asked to do so by the Security Staff (or other suitable personnel) and failure to produce the card, when requested will result in the individual being asked to leave the building and their unauthorised presence in the building being reported to the Head of Department.

All aspects of **any** proposed out-of-hours work must be risk assessed **before** any work commences. Due consideration must be given to the implications of lone working (such as reduced first aid availability, personal safety issues, etc.). In all cases, suitable control measures must be in place to avoid or manage the risks and ensure that lone workers are monitored. Appropriate emergency response procedures must be established and staff trained accordingly. It is the duty of supervisors to make themselves fully aware of the proposed activities for those for whom they are responsible.

- High risk activities are normally **forbidden** outside normal working hours. However, in some cases this will be permitted but approval will be required from the Head of Department.
- In situations where an external contractor or visitor requires to be in the building outside on normal working hours, then the host for this person will be responsible for arranging and logging relevant notifications with the Technical Support and Safety Manager (University Supervisor Officer).
- It is HIGHLY recommended that supervisors do not permit new postgraduate students and inexperienced staff to work <u>out-of-hours</u> for the first 3 month.

Access to University Premises Policy

University Staff and Students – <u>Estates Services - Out of Hours Access - All Items (sharepoint.com)</u> External & Third Parties – <u>Estates Services - Out of Hours Access - All Items (sharepoint.com)</u> Ensure you notify Security if in the building during out of normal working hours and when you leave again. Also see section <u>D1.4: Safety Induction and Safety Training</u>

D1.2 ACCIDENTS & INCIDENTS REPORTING

All health, safety and wellbeing incidents must be reported. Incidents are categorised into the following categories:

- Accidents
- Fire
- Near Miss
- Occupational III Health
- Unsafe Acts
- Unsafe Conditions
- Violence / Aggression

Who can report

Anyone can report an incident, whether they are associated with the University of Strathclyde or not. Reports can be completed by someone involved in the incident, on behalf of someone else or as a witness to an incident. Reports should be completed and submitted with as much information as possible. Where an incident occurs in a hosting department, notification will be sent to both the DSC of the hosting department and the DSC of the reporting person's department.

How to report - Safe360

All incidents, or suspected occupational ill-health, must be reported to the immediate academic supervisor, line manager, or safety co-ordinator as soon as possible. This will enable any necessary remedial action to be taken to ensure.

Safe360 should be used to report any occurring either on University of Strathclyde premises or in work related incidents occurring off campus. Reports must be submitted by the <u>webform</u> which is accessible both on and off campus. Reports can be submitted via computer, tablet or mobile phone.

In the case of an emergency where an immediate response is required on campus Security Services should be called internally on X2222 or externally on 0141 548 2222 from a mobile. If off campus local emergency arrangements should be followed or the emergency services contacted on 999 (UK).

For further information on reporting incidents using Safe360 please refer to the [Insert Safe360 user guide and videos].

Incidents reportable to the health and safety executive

Certain types of injury incidents are reportable to the HSE under RIDDOR. Full details on RIDDOR can be found on the <u>HSE website</u>. **RIDDOR reports must only by made by SWR following assessment of the incident. All RIDDOR reportable events are investigated by SWR.**

Incident and Reporting Management Standard Safe360 Incident Reporting and Investigation Safe360 System User Training

• Following an accident, incident or dangerous occurrence, complete the online reporting form.

D1.3 FIRE SAFETY - GENERAL

An automatic fire detection and warning system is installed in the buildings and on operation provides an audible warning from electronic sounders. The system can be activated manually by the break-glass call points, located on escape routes and at other strategic positions, or by automatic smoke/heat detectors. The fire warning system is single stage system which on activation requires the full and immediate evacuation of all occupants from the building.

- Remain vigilant at all times. Look out for hazards and remove or report them to the FSC and to designated safety contacts for the area. Examples of hazards to report include missing fire extinguishers, wedged open fire doors, combustible materials too near to heat sources, electrical defects, obstructed fire exits.
- Suitable fire extinguishers are available locally (close to most exit stairwell locations).
- All fire-fighting equipment must be unobstructed and clearly visible at all times.
- Fire-fighting equipment must only be used by trained staff and not be used for other purposes.
- Any significant changes to the fire hazard of an area brought about through change of use for example must be notified to the Fire Safety Co-ordinator as a new fire risk assessment may be required.
- All rooms must be unlocked when occupied unless additional security measures are necessary.
- All doors and windows should be locked at the end of the working day.
- Keep exits clear of all obstacles.
- Do not store items or equipment in areas that may obstruct a fire exit or hinder the passage of persons or goods to and from the building.

All Staff and postgraduates must familiarise themselves with their main escape routes as part of their initial induction into the building. All building occupants and visitors must follow the instructions of the Fire Safety Assistants and Fire Safety Co-ordinator and should be prepared to guide others out of the building of necessary.

Fire drill evacuations are carried out twice per year normally in Mar/Apr and Oct by the University Fire Safety Adviser (UFSA) to test systems and evacuation procedures.

D1.3.1 FIRE EXITS AND EVACUATION PROCEDURES

Physics has a number of designated Fire Safety Assistants and a Fire Safety Co-ordinator to help comply with fire safety legislation and building evacuation procedures.

All individuals have the responsibility to evacuate from a building when the fire alarm is activated.

- Know how to raise the alarm. Most red activation call points are located close to exit stairwell locations and in some other general public areas such as entrance locations.
- If you have special needs then a personal emergency evacuation plan (PEEP) will need to be drawn up in conjunction with the UFSA.
- Know the meaning of the audible and visible (certain locations only) fire alarms. If they are sounded, obey them at once.
- Know the escape routes from any area in which you are working. Evacuation routes are identified by following the green fire evacuation notices or 'running man' signage.
- The illuminated green evacuation lighting is the primary route from your location and the running man signage is the secondary route.
- Leave the building immediately, direct and instruct others to leave also.
- Close doors as you leave.
- Do not stop to collect belongings.
- Do not use lifts.
- Proceed directly to your nearest Assembly point. Assembly Points (not signposted) are:
 - 1. Rottenrow (concourse)
 - 2. Richmond Street
- Report any individuals that refused to leave the building to the Fire Safety Co-ordinator at the front of the building (level 5)
- Keep clear of all exits and do not re-enter the building until authorised to do so by either Security or Fire Assistants.
- Regular weekly testing of the fire alarm systems is carried out on Thursday at 09.00 hrs. During exams times the times may change.
- Fire drills will be held at least twice a year.

D1.3.2 EVACUATION OF DISABLED PERSONS

Physics has a large number of Fire Safety Assistants and a Fire Safety Co-ordinator to ensure the safe evacuation of any staff member, student or visitor with special needs or temporary mobility impairment, from all areas they are likely to occupy. Physics will endeavour to instigate early discussion between each person who requires assistance, and with appropriate personnel where appropriate (e.g. other staff, hosts, Fire Safety Co-ordinator, Fire Safety Assistants, Human Resources, Disability Services and the UFSA) to ensure that an appropriate Personal Emergency Evacuation Plan (PEEP) is developed. Each PEEP will be prepared initially by the UFSA in conjunction with the afore-mentioned persons.

The Primary aim is to safely evacuate all personnel from the building as quickly and as easily as possible.

A PEEP may be required for staff/students with:

- mobility difficulties, hearing or sight disabilities (particularly if they work alone at any time).
- certain health conditions (e.g. asthma or mental health / emotional difficulties).
- temporary, short term problems (e.g. broken leg).

Lifts: In the event of an emergency press the emergency call button and wait for assistance. Do not use the lifts in the event of a fire.

D1.3.3 FIRE RISK ASSESSMENTS

A fire safety risk assessment involves the formal and systematic consideration of Physics areas, its work activities, the potential for a fire to occur, the harm fire could cause to those in and around the premises along with existing fire safety measures. This helps to establish whether fire safety measures are adequate or if more are required. Fire safety risk assessments are carried out by the UFSA with copies also available on the safety section of the Physics safety folder on `l` drive.

The Fire Safety Co-ordinator will review the fire safety risk assessment on a regular basis. If its findings are considered to be no longer valid or there has been a significant change in the matters to which it relates, such as a change to the premises that has affected the risk or to the fire safety measures, the UFSA will need to be informed and the assessment revised.

General and local fire safety instruction is provided as part of the initial induction of new staff and research students. If you become aware of any matter that would increase the risk of the start or spread of fire then report it immediately to the Fire Safety Co-ordinator.

University Local Rule - Fire Safety University Local Rule - Engaging External Service Providers University Guidance - Departments on Engaging External Service Providers Practical Fire Safety Guidance for Educational & Day Care for Children Premises, Scottish Government Management of Health and Safety at Work (HSE);

The fire alarm in the John Anderson building is tested every **Thursday** at **09.00hrs** (unless an alternative arrangement has been agreed and advised to building occupants). The occupants do not have to leave the building during the test.

NOTE: If an individual has a personal health issue (disability, mobility problems, etc.) that could affect their safe egress from the building, then they should contact their Departmental Disability Officer, the University Fire Safety Advisor (USFA) or the Fire Safety Co-ordinator **in advance** about a personal emergency evacuation plan (PEEP), which may need to be completed and implemented for them.

In the event of a PEEP being required, an assessment will be made by the UFSA of what options and locations are the most appropriate for the individual based on their individual mobility/impairment needs.

The John Anderson has four fire evacuation chairs on mobile stands, there are dedicated staff that have been trained to use. These are normally located at:

- Level 8 beside the North lift
- Level 5 beside the North lift
- Level 8 beside the South lift
- Level 3 beside the South lift

The mobile units can be located to various areas in the building according to PEEP requirements. There are many temporary refuge areas in protected lobbies and stairwell areas throughout the buildings which have a linked communications system to the building's fire panel.

There are firefighting lifts in the John Anderson building which can be controlled by the Fire Service if required.

For further information or advice, **contact** the Fire Safety Co-ordinator or the UFSA.

D1.4 SAFETY INDUCTION AND SAFETY TRAINING

The University is responsible for ensuring that all staff, students and visitors complete appropriate induction and safety training for their activities and time in Physics. All staff and research students must complete the University Health and Safety online induction as well the general Physics Building Health and Safety Induction. In addition, Supervisors, Line Managers and/or other appropriate persons are required to give a local induction to new staff and students based on their work location(s) and work activities. This may also include relevant additional Dept. information.

A record of all safety training must be retained on the Spider training platform. Record (**S17**) must be retained by each person. Departments/Groups are also encouraged to maintain an up-to-date health and safety training matrix record for their groups.

SWR run a large number of in-house safety training courses. However, in some cases, external courses may be required.

Knowledge Transfer Partnership (KTP) associates, staff of private companies (including spin outs) and other collaborators working in Physics will require to complete a suitable and appropriate induction and ensure that an appropriate exchange of health and safety information and arrangements is in place between Physics, the University and 'the 3rd party'. The exact format and nature of this will be determined by what type of arrangements or agreement is in place for the 'group' e.g. 3rd Party policy agreement. Estates Services will generally be involved in this process for space allocation purposes.

University Safety, Health and Wellbeing Training Courses (OHS Part 1 online & other courses) <u>https://spider.science.strath.ac.uk/spiderX/</u> HR Website: University Staff Induction

- Physics occupants should receive suitable and appropriate training that will meet the needs of the activities carried out in Physics.
- Various basic, advanced and specialist training courses are available and these should be selected by PI's and Line Managers for individuals.
- Details of all safety related training completed by individuals should be recorded and maintained on Spider safety platform.
- Training requirements as suggested on the Spider Platform.

D1.4.1 STAFF AND POSTGRADUATE RESEARCH STUDENTS

As part of the general induction for new members of staff (including postgraduate experimental research students), information must be provided on the University's OHS Policy and Management Arrangements as well as Physics's OHS Management Arrangements which includes details on local arrangements such as fire evacuation procedures, first aid provision, and any necessary on-going health and safety training related to their specific job or responsibilities. Some work within Physics may be dependent on the completion of other appropriate health and safety training, for example, work with substances hazardous to health will be dependent on completing a COSHH Awareness or COSHH Assessors course.

All staff and students working in Physics must complete the University OHS Induction, as well as a Physics general Health and Safety Induction (obtainable via Departmental Safety Convenor). In addition, Line Managers are required to give a local induction, which is specific to the location, work activities and any departmental arrangements specific to the individual. Line Managers must also identify any specific training needs for staff and students and ensure appropriate information, training and supervision is given and in place. Some training courses are available online, whilst others more specialist courses are class taught. Please note that only when this induction has been completed, (along with any other identified or required training) can any experimental research take place by new staff, PhD students or new post-doctoral researchers.

Details of all health and safety training completed should be recorded and maintained by the Departmental Safety Convenor. Each individual's health and safety training should be recorded on the Departmental Spider training platform. All Area Safety Convenors in Physics are also strongly encouraged to maintain their group safety training details on a health and safety training matrix sheet which they can keep in their Safety Section of the Physics safety folder on `l` drive.

The need for additional and/or refresher training should be discussed at regular meetings or at performance reviews with Line Managers. A range of safety training courses is available through SWR, for details please see Health and Safety Training. The core training courses are highlighted on the departmental Spider safety platform and must be completed every 3 years.

D1.4.2 KNOWLEDGE TRANSFER PARTNERSHIPS / ASSOCIATES

A Knowledge Transfer Partnership (KTP) is a partnership between the University and an external organisation (partner organisation) that allows one or more University-employed **KTP Associates** to work on a project, which is core to the strategic development of that organisation.

As employees of the University, new KTP Associates are required to undergo the normal Physics health and safety induction, prior to commencing with the partner organisation. Since most of a KTP Associate's time is likely to be spent at the partner organisation, the primary responsibility for ensuring their health, safety and welfare whilst engaged in work activities on behalf of the partner organisation, lies with that organisation

Through a structured process of vetting, communication and administration, Department's must endeavour to do everything reasonably practicable to ensure that partner organisations' fulfil their health and safety duties to KTP Associates. It is expected that each will receive an induction into the partner organisation's health and safety management system. Based on this induction and depending on the type of work being undertaken, other specific health and safety training may be required. Such training may either be provided by the University or the partner organisation; in the latter case this should be to an approved or other competent standard.

If a KTP Associate has any concern with regard to their health, safety or welfare, then it should be discussed, without delay, with the partner organisation and with the relevant partnership supervisor, to establish a way forward.

D1.4.3 VISITORS, GUESTS, AND EXTERNAL SERVICE PROVIDERS

For all other (non-staff and non-student) visitors to Physics, suitable and appropriate health and safety training Must be provided by the host or other appropriate designated personnel. In many cases, this will involve escorting the individuals during their time in the building, so that they can be safely escorted out of the building in the event of a fire alarm. All lecture and teaching rooms have safety brief information which should be referred to by the hosts.

D1.4.4 EXTERNAL SERVICE PROVIDERS

Individuals, sole traders, contractors, businesses or organisations, external to the University and which are engaged by University departments to provide services on the premises, fall into the category of members of the public and are therefore owed a duty by the University. Such services may include, for example, construction, refurbishment, installation, inspection, maintenance, cleaning, repair, supply of hired equipment/facilities or some other physical work, whether through a term or one-off contract. Those providing services (External Service Providers) will also owe a reciprocal health and safety duty to the University. In order that these respective duties can be effectively fulfilled, the University recognises its responsibility to ensure that co-operation and coordination procedures are in place to allow both the University and External Service Providers to conduct their work in a safe manner and to adequately control any risks to the employees or property of the other.

The University has specific guidance, documents (S7 form) and requirements for the procurement, agreement and induction of External Service Providers to ensure work is carried out in a safe and appropriate manner for all involved. S5 form is requirement to allow out of hours working.

D1.5 LONE WORKING

Lone workers are those who work by themselves without close or direct supervision. Within Physics these may include:

- people working alone in premises or separate from others in premises, e.g. in workshops or research laboratories
- people who work at home
- people working outside normal hours
- people working away from their fixed base e.g. involved in maintenance, cleaning, electrical repairs etc.

Working alone is perfectly safe in many instances. However, in some cases, the nature of the work (e.g. highrisk lab work), may create additional risks which requires additional control measures to be implemented e.g. labs often require a "buddy system" to be in operation for safety reasons. In some cases, lone working may also be required out with the normal working hours and again this requires some additional issues to be considered.

All lone worker situations in Physics must be risk assessed with co-operation from the individuals involved. For example, some employees may have a medical condition that will increase their risks or make it unsuitable for them to work alone. If applicable, individuals should inform their Line Managers of any concerns and/or consult their GP or Occupational Health Service for advice. It will then need to be ensured that measures are in place to avoid or control the risks and that lone workers are monitored, using various means, to help keep them healthy and safe. Appropriate emergency response procedures should be established and staff trained accordingly.

It is HIGHLY recommended that supervisors do not permit new postgraduate students and inexperienced staff to work <u>alone</u> for the first 3 months. Additionally, no medium to high risk work is permitted without a suitable control system such as a "buddy system" being in place.

Working alone - health and safety guidance on the risks of lone working (INDG73 HSE).

- Have a suitable risk assessment in place for the work to be carried out during this time
- Have received suitable and appropriate training for the building and work activities
- Complete an "out of hours" request to work outside the normal hours
- Contractors must sign in with the Technical Support and Safety Manager
- Are not undertaking any tasks considered to be "High Risk" during these hours.

Also see section D1.4: Safety Induction and Safety Training and D1.8: Supervision of Students

D1.6 SCHOOL PUPILS ON WORK EXPERIENCE

From time to time, Physics accepts school pupils on work experience, which is beneficial for both Physics and the personal development of the pupils concerned. It is recognised that, in general, school pupils are without training and experience, so are liable to underestimate danger and overestimate their own capabilities. Additionally, because of their age and specific legislation, they may be prohibited from undertaking certain work activities or using certain equipment.

The University has a recognised procedure for preparing for school pupils, which will be followed by those responsible within Physics. This includes carrying out a risk assessment relating to pupils' proposed work activities, <u>well in advance</u> of the scheduled work and sending copies to parent(s)/guardian(s) and the school/organising body, prior to placement. The procedure also includes providing relevant induction, information, instruction and supervision during the placement.

University Guidance – Accepting school pupils on Work Experience What the Law says about young people at work (HSE)

- Ensure forms S32a, b, c & d in the University's Guidance document are completed as appropriate.
- Staff should also notify the Departmental Safety Convenor where arrangements have been made for school pupils on work experience.
- Pupils will require to be given a visitor or staff safety building induction depending how long the work experience term.

D1.7 STUDENT PLACEMENTS

In the context of the University, "student placement" is defined as a period of paid or unpaid work experience in industry, commerce, the public or voluntary sector (host employer) and undertaken as an integral part of a student's course.

For the purpose of health and safety management, students on placement will be treated as employees of the host employer, irrespective of whether they are paid or unpaid. Consequently, the primary responsibility for ensuring their health, safety and welfare rests with the host employer.

Through a structured process of vetting, communication and administration, Physics will endeavour to do everything reasonably practicable to ensure host employers fulfil their duties. For this reason, Placement Organisers are appointed by Departments, who are competent and aware of relevant health and safety legislation. Their essential role is to administer arrangements as set out in the applicable documentation below.

University Local Rules for the Safety Requirements for the Placement of Students University Leaflet: Placement of Students – Guidance for Students. Student Exchange Pre-Departure Checklist (Form S23)

- Students can obtain the S17P Safety Induction training form on Spider X
- Students should contact the Department Placement Organiser

D1.8 SUPERVISION OF STUDENTS

Supervisors and Line Managers have a duty to provide such information, instruction, training and supervision as is necessary to ensure the health, safety and welfare of all students whilst undertaking research activities and coursework, which may include practical classes, project work, fieldwork, use of workshops, work outside normal hours, etc.

Adequate arrangements will be made, in all cases, to provide appropriate health and safety induction to students, including subsequent supervision. Those in charge of particular aspects of coursework, such as, Academic Supervisors, Principle Investigators, Tutors, Line-Managers, Laboratory Supervisors and Demonstrators etc., have a responsibility to clearly understand their supervisory roles and to ensure they are actively fulfilling them. They will decide on the extent of the supervision required, in each circumstance, based on a risk assessment undertaken by themselves, or other competent person. This assessment will take account of the following:

- the nature of the processes/activities/project/fieldwork etc. to be undertaken;
- an evaluation of risks associated with the processes/activities/project/fieldwork etc., including articles, substances, materials, equipment etc., available for use;
- an evaluation of risks associated with the workplace and working environment;
- the existence of recognised safe systems of work (or standard operating procedures);
- the level of instruction and training provided to the students involved;
- the level of experience and competence of the students involved;
- any declared medical condition of individual students

All proposed student research project work must be risk assessed for development, construction and operational phases, <u>before</u> work commences. Assessments may need to include a general risk assessment, plus other specific assessments, for example a COSHH assessment etc. These risk assessments will be overseen and signed by the

member of staff initiating the work but they are encouraged to include the student in the process, for training purposes.

With regard to the health and safety supervision of these students and their experimental work, the member of academic staff responsible should satisfy themselves, that each stage of the research, before it proceeds, is based on safe working practices that have been informed by the significant findings of a suitable and sufficient risk assessment, undertaken by a competent person.

D1.9 PERSONAL SAFETY & SECURITY

It is the University's policy to provide, so far as is reasonably practicable, an environment in which the personal safety of staff and students is assured. Where necessary, Physics will assess risks in relation to personal safety, promote awareness of the issue and, where appropriate, provide training for staff and students.

D1.9.1 ID CARDS AND LANYARDS

All occupants of Physics should wear their ID cards and lanyards at all times (or have these readily available for presentation if asked). It is important to be able to identify authorised Physics personnel from others categories of Physics occupants e.g. visitor, contractors, conference delegates as well of being able to distinguish any unwanted or unauthorised individuals in the buildings.

D1.9.2 TAILGATING

The John Anderson building is a mix of general public areas and secure high-risk areas. It is extremely important that you remain vigilant at all times and do not permit any person to 'tail-gate' behind you in order to access an area that they are not permitted into. Do not hold a door open for someone behind you that is not wearing their ID badge and lanyard or you do not recognise. If possible, politely explain that they need to use their own ID card as you are not familiar with them and that it is a required security measure.

If you observe someone acting suspiciously inside or outside the premises, please report their whereabouts to Security Control on Ex. 3333 (0141 548 **3333** from a mobile phone or outside line). Your personal safety is paramount in such circumstances.

University Leaflet: A Sensible Approach to Personal Safety and Campus Security by Security Services University Personal Safety Guide

D1.10 ROLES AND RESPONSBILITIES

Please refer to the University OHS standard covering 'Roles, Responsibilities and Accountabilities'. This document defines the roles, responsibilities and accountabilities necessary to implement the University's Occupational Health, Safety and Wellbeing Policy statement at each level of the organisation and follows the four-step Plan-Do-Check-Act (PDCA) management model which requires leadership, commitment and participation of all staff from all levels and functions of the University to achieve continual improvement.

Areas covered include the following:

- Governance Roles
- Leadership Roles
- Senior Management Roles
- Operational Management Roles

- Compliance Support Roles
- Duties of all staff
- Students
- University of Strathclyde Students' Association
- Contractor/Service Providers
- Collaborative Research with External Partnerships
- Consultation, Committees and Forums
- Mandatory Health and Safety Training
- Documentation and Records
- Communication

D1.11 HEALTH AND SAFETY COMPLIANCE

Compliance with University policy and safety standards as well as the Physics health and safety arrangements is expected from all building occupants. Every effort will be made in the first instance to resolve any safety issues locally. However, in cases, where this fails to result in a satisfactory and acceptable outcome, the matter will be escalated to appropriate senior management and in serious instances, could result in disciplinary measures being taken.

General compliance for safety will be routinely monitored via the Physics Health and Safety Committee and via a variety of mechanisms e.g. safety inspection reports, audit findings, complaints etc. Compliance checks may be carried out by other University areas e.g. SWR, Estates etc. to meet specific requirements e.g. building inspections, inspections for insurance purposes etc.

D1.12 VACATING PREMISES

Space Planning in Estates Services deal with the allocation of all University space. When occupants are vacating areas for hand back to Estates, they must ensure that they comply with the Estates policy for vacating areas. This is to ensure that all areas and in particularly, laboratory areas are properly decommissioned and decontaminated prior to an individual's exit and prior to any renovation, refurbishment or transfer of lab occupancy. It is applicable to all areas with laboratories or operations where hazardous materials or equipment that has come in contact with hazardous materials are used.

It is mandatory that Principal Investigators, lab users and 3rd parties decommission their laboratories to ensure that the legal and ethical expectations associated with termination of their research and lab space are met.

When properly applied, an exit protocol ensures that:

- Unsafe conditions are eliminated;
- A proper clean-up is performed;
- Lab equipment is properly decontaminated and disposed of or recycled;
- Hazardous materials are properly disposed of or recycled/reused;
- Work surfaces are free of contamination;
- The health and safety of researchers is protected;
- University policies and Departmental procedures are followed; and
- Regulatory requirements are met.

D1.12.1 HOW DOES THE PROCEDURE WORK?

1	Principal Investigators must inform the Head of Department immediately when the appointment of a staff or candidature / attachment of a student in their laboratory has been terminated or ceased, and not renewed or extended.
2	Staff or students must complete the Exit Declaration for Laboratory Users by the end date of employment, candidature or attachment at Physics.
3	Exiting staff or students must hand over all laboratory books, research data, surplus reagents, cell stocks, plasmid stocks, laboratory equipment, etc. to their Principal Investigator / Supervisor prior to leaving.
4	All of their chemicals must be appropriately disposed or given away to colleagues before leaving. All chemicals must be clearly labelled.
5	Staff or students must empty and clean laboratory bench and all designated storage spaces in cold rooms, fridges and freezers, prior to leaving.
6	All area and laboratory locker keys etc must be returned to the Principal Investigator for the area.
7	The duly completed form must be submitted together with the user's access card to the secretary to the head of department, by the last day of employment, candidature or attachment at Physics.

Estates: Vacating Room Policy

D1.13 VISITORS (INCLUDING VISITING RESEARCHERS)

Visitors to Physics include persons who call with members of staff, either with or without an appointment, plus those invited for a one-off purpose, for example guest speakers, University colleagues etc. All visitors should be given a suitable induction and made aware, by their host, of the action to be taken in the event of certain occurrences (e.g. fire alarm sounding). Casual visitors should be escorted in operational areas at all times and provided with necessary PPE, where this is mandatory, advised by the relevant risk assessment or by displayed signage. Any visitors with special requirements should be discussed in advance with the Departmental Safety Convenor.

Those visiting Physics for an extended period, for example visiting academics or researchers will be provided with Physics's normal health and safety induction, plus other information and training necessary to enable them to work safely. Where visiting researchers need to use Physics's facilities and equipment, then they will be required to undergo relevant training and/or to demonstrate an appropriate level of competence, prior to use. In addition, a risk assessment needs to be undertaken for the work involved. Training needs should be discussed and arranged with the appropriate host member, PI or the Departmental Safety Convenor.

Occupants must notify the Departmental Safety Convenor in advance of any visitors. Visitors requiring to use departmental facilities/equipment must complete a S17P Safety Induction form. Forms can be sought from the Departmental Safety Convenor or on Spider training platform. Also see section D1.4: Safety Induction and Safety Training

D2 EMERGENCY ARRANGEMENTS

This section covers arrangements for all occupants to be aware of in emergency situations such as bomb threats, fire evacuations, suspicious packages and First Aid arrangements.

Physics is responsible for establishing and giving effect to appropriate arrangements that are to be followed in the event of serious and imminent danger to persons within Physics.

For specific emergencies related to local work activities e.g. accidental chemical spillage, uncontrolled gas release etc., Principal Investigators, Line Managers and supervisors should have suitable arrangements in place to deal with these events.

D2.1 BOMB THREATS

Bomb threats may be received in a phone call, via email or through social media applications. No matter how ridiculous or implausible the threat may seem, all such communications are a crime, and should be reported to the police by dialling (9)999 (when using an internal phone).

Upon receiving a bomb threat.

- Stay calm and listen carefully.
- Have immediate access to a checklist on key information that should be recorded (an example can be found <u>here</u>)
- If practical, keep the caller talking, and have a colleague dial (9)999.
- If displayed on your phone, note the number of the caller, otherwise dial 1471 to obtain the number once the call has ended.
- If the threat is a recorded message, write down as much information as possible.
- If the threat is received via text message, do not reply to, forward or delete the message. Note the number of the sender and follow police advice.
- Contact Security on (0141 548) 2222 as they will need to assess the risk.

If the threat is delivered 'face-to-face':	 Try to remember as many distinguishing characteristics of the threat- maker as possible
If discovered in a written note, letter or as graffiti:	 Treat as police evidence, and prevent others from touching the item
If the threat is received via email or social media:	 Do not reply to, forward or delete the message. Note the senders email address or username / user ID for social media. Preserve all web log files for your organisation to help the police investigation (As a guide, 7 days prior to the threat being received and for 48 hours after).

Additional Points

The University has procedures in place for dealing with such incidents and liaising with the emergency services.

D2.2 EMERGENCY MANAGEMENT INFORMATION

Physics requires all building occupants to assist the University in ensuring we have accurate and up-to-date information that may be needed in the event of an emergency situation. The department requests that all research group leaders and 3rd parties complete, submit and regularly review the hazard data information

which we hold on the Safety 'I' drive regarding their area/s and ensure that contact details are accurate and upto date. This information will also be used by Security by electronic means in the event.

Physics will work with colleagues in Estates and Security to ensure emergency response and business continuity plans are in place to deal with emergency incidents and events.

All Occupants:

• Ensure your location and contact details are correct and up-to-date on the University systems (e.g. PEGASUS)

Pls / Lab Supervisors

- Ensure lab emergency sheets are correct and up-to-date.
- Upload sheets to the Safety `I` drive.
- Ensure lab door contact details are correct and up-to-date.

University webpages for Risk and Resilience Management

D2.3 EMERGENCY REPAIRS

During normal working hours (08.00-18.00hs, Mon-Fri), all emergency repairs should be reported to Technical Support and Safety Manager who will report the issue to Estates via the most appropriate mechanism based on the issue.

Outwith normal working hours, all emergency repairs should be reported to Security Services on 0141 548 3333 (3333).

NOTE: All general building issues should be reported centrally to ensure the Technical Support and Safety Manager has an overall awareness of reported building issues.

University webpages for Risk and Resilience Management

D2.4 EVACUATION (NON-FIRE) SITUATIONS

It may be necessary to evacuate the building or area(s) in a non-emergency situation e.g. an electrical power failure. In this type of situation, the fire alarm will not sound.

- When requested you should leave the building as soon as you can after making safe any equipment or apparatus (i.e. anything that would switch off at night or over weekends) and that may be damaged by electrical power surges.
- Exit by normal routes and secure access points as normal.
- DO NOT USE LIFTS OR EMERGENCY EXITS UNLESS TOLD TO DO SO.
- Assemble outside the building at normal assembly points away from the building entrances and road.
- Wait at the assembly point until a senior member of staff provides further instruction
- Floor to floor searches will be made to ensure all areas have been vacated.

General and local fire safety instruction is provided as part of the initial induction of new staff and research students. If you become aware of any matter that would increase the risk of the start or spread of fire then report it immediately to the Fire Safety Co-ordinator, Fire Assistant or Security.

D2.5 EVACUATION – CITY CENTRE

In exceptional circumstances (e.g. Utilities failure or terrorist attack) and in event of an evacuation of Glasgow city centre, the Police may require the evacuation of part or all of the University John Anderson campus, and will contact the University, advising of the need to evacuate.

In the event of such an evacuation:

- You will be informed via your department / host department, email or social media;
- Follow all instructions provided on what action to take.

Additional Points

- Transport system may be affected by the city centre evacuation; therefore, you should be prepared for disruptions to arrangements for travelling home
- In the event that you are in the city centre, and become involved in an evacuation not related to the University, ensure that you follow all instructions given to you by the Police or Glasgow City Council.

The University has procedures in place for dealing with such incidents, and liaising with emergency services.

D2.6 FIRE AND EVACUATIONS

D2.6.1 DISCOVERING A FIRE

- Leave the room.
- Close the door and activate the nearest "break glass" fire alarm call point (located near most stairwells and some other common areas).
- Alert Security at Ext. 2222 or 0141 548 2222.
- If it is safe to do so **and training has been given**, use the appropriate fire extinguisher (located beside most stairwells) to attack the fire.
- Leave the building by the nearest available exit and make your way to the designated Assembly Points.

D2.6.2 EVACUATION (FIRE ALAR)

- If the fire alarm sounds, leave the building immediately by your nearest exit.
- Evacuation routes are identified by following the illuminated green evacuation lighting which is the primary route and the running man signage the secondary route.
- Close doors as you leave.
- Do not stop to collect belongings.
- Do not use lifts.
- Proceed directly to your nearest Assembly point. Assembly Points (not signposted) are:
 - 1.Rottenrow (concourse)
 - 2.Richmond Street

- Pass on any relevant or useful information to appropriate personnel such as security, Fire Safety Assistants.
- Report any individuals that refused to leave the building to the Fire Safety Co-ordinator at the front of the building.
- Ensure any persons requiring assistance or who have a PEEP as assisted in exiting the building.
- Keep clear of all exits and do not re-enter the building until authorised to do so.

D2.6.3 FIRE ACTION NOTICES

These are displayed throughout our buildings for the benefit of staff, students and visitors. The details are reproduced below, with some additional information.



D2.7 FIREARMS OR WEAPONS ATTACK

In the event of a firearms or weapons attack on campus, off campus, at home or abroad, follow the UK Government's "Stay Safe" principles.

DUN	To a place of appendix. This is a few bottom antian to survey day or attempt to reactivity.			
KUN	To a place of safety. This is a far better option to surrender or attempt to negotiate:			
	Consider the safest options			
	Escape if you can			
Å	Is there a safe route?			
~	 Can you get there without exposing yourself to greater danger? 			
	Insist others leave with you			
	Leave belongings behind			
	If you have nowhere to go, then:			
HIDE	It is better to hide than confront an attacker			
	Find cover from gunfire			
	 It you can see the attacker, they may be able to see you 			
;	 Cover from view does not mean you are safe. Bullets can go through glass, brick, wood and metal 			
	 Find cover from gunfire e.g. substantial brickwork / heavy reinforced walls 			
	Be aware of your exits			
	Try not to get trapped			
	Be quiet. Silence your phone and turn off vibrate			
	Lock / Barricade yourself in			
	Move away from the door			
	Then finally, and only when it is safe to do so:			

TELL	•	Call 999				
	•	Consider what the police need to know (If you cannot speak or make a noise, listen to the				
		instructions given to you by the can naminer).				
		 Location - Where are the suspects? 				
•		 Direction - Where did you last see the suspects? 				
		 Descriptions - Describe the attacker, numbers, features, clothing, weapons etc. 				
		• Other information - Casualties, types of injuries, building information, entrances,				
		exits, hostages etc.				
		 Stop other people entering the building, only if it is safe to do so. 				

Arm	ed Police Response:	Offi	cers may:
0 0 0	Follow any officers' instructions. Remain Calm. Avoid sudden movements that may be considered a threat. Keep your hands in view at all times.		Point guns at you. Treat you firmly. Question you. Be unable to distinguish you from the attacker. Officers will evacuate you, only when it is safe to do so.

Good to Know:

- The University has procedures in place for dealing with such incidents and liaising with emergency services.
- Given the rapidly evolving nature of such situations, you must adopt the **Run, Hide, Tell** principles as soon as you suspect an incident is happening.
- **Personal Emergency Evacuation Plans (PEEPs)** should be in place for people who require assistance during an evacuation.

Plan and Prepare Now:

- Know your plans if there was an incident.
- Consider First Aid only when it is safe to do so. <u>Citizen Aid</u>' is one example of a source of information of a simple, clear teaching aid for immediate actions and first aid for a stabbing, bomb or firearms incident.
- University webpages for Risk and Resilience Management (including link for Security Guidance information)

D2.8 FIRST AID

All University Security Wardens are qualified to administer First Aid. A number of Physics colleagues are also trained First Aiders. A list of first aiders is displayed next to the lift. First aiders are supplied with a British Standard compliant portable first aid kit.

The names of Departmental First Aiders should be included as part of the local safety induction process. Departments and 3rd parties are responsible for ensuring they have adequate numbers of trained First Aiders, based on their First Aid Needs Assessment.

There is a procedure for summoning First Aid Assistance which is displayed in poster form (see Image 4) in various locations. All occupants should make themselves familiar with this procedure.

In all cases where it is suspected that urgent medical attention will be necessary, whether this is due to an accident or illness, contact a nearby First Aider or contact Security using the following procedure:

- Telephone Security Control on Ext: 2222 (or 0141 548 2222 from a mobile telephone)
- State your name, area and the telephone extension or mobile number from which you are calling.
- Give your location and brief details of the casualty's injuries.
- If you consider the injuries are sufficiently serious to warrant hospital treatment, inform Security Control that an ambulance is required.
- Remain with the casualty until the arrival of the First Aider who will take charge of the situation. Do not move the patient.
- Render assistance/comfort to the casualty. First Aid should, however, only be administered by a trained First Aider. University Security Staff are trained first aiders.
- A colleague should, if possible, travel with the patient to the Hospital. If the patient is kept in hospital, this must be reported immediately to the Physics Departmental Safety Convenor and to SWR. If allowed home either the patient should be accompanied home or adequate transport should be made available.

Inhalation or swallowing of infective material or dangerous chemicals must be regarded as an injury and treated as below. It should be noted that the University First Aiders (Security Wardens) are not trained to deal with specific risks associated with particular chemicals or biological agents. These first aid measures must be included in the risk assessment, which should accompany the individual to the hospital.

Image 4

Poster notice advising of First Aiders



Poster for summoning a First Aider



D2.8.1 FIRST AID BOXES AND AUTOMATED EXTERNAL DEFIBRILLATOR (AED)

First Aid Room Location: JA510 Level 5, close to the entrance on the left-hand side of the foyer area.

All persons must familiarise themselves with the location of first aid boxes in their respective areas. An AED is also located at Main Foyer on Level 5.

Dressings and plasters may be obtained for minor injuries from the First Aiders.

If chemicals do come into contact with the eye, rinsing should be carried out with the eye wash stations located in the laboratories.

Contact x2222 if University First Aider assistance is required.

University First Aid Information (SWR website)

• Be familiar with the nearby First Aiders and procedure for summoning First Aid

D2.9 SERIOUS AND IMMINENT DANGER

In the event of a serious incident, which either cannot be managed by staff at Physics or may impact on the whole University community, the University Emergency Management Team will convene and co-ordinate an Emergency Plan.

D2.10 SUSPECT PACKAGE

If a suspect package is delivered or found in Physics, please adhere to the following:

- Do not touch or interfere with the item or handle it as little as possible as soon as it is considered suspicious.
- If possible, attempt to identify the owner in the immediate area.
- If you still think it's suspicious, do not feel embarrassed or think somebody else will report it.
- Report it to a member of staff, Security on (0141 548) 2222 or if they are not available, dial (9)999. Do not use your mobile phone in the immediate vicinity.
- Move away to a safe distance Even for a small item, such as a briefcase, move at least 100m away from the item.
- Evacuate any other personnel from the immediate area and leave the room, closing (and if possible locking) the door behind you. If it is not possible to lock the door, someone should be stationed in the vicinity of the suspect area to warn colleagues against entering the room;

Remember: If you think it is suspicious, say something.

University webpages for Risk and Resilience Management (including link for Security Guidance information)

D3 SUPPORTING SERVICES AND PROVIDERS

D3.1 CATERING SERVICES

Catering Services adheres to a Hazard Analysis and Critical Control Point (HACCP) food safety management system called 'Cooksafe'. This is a written food safety management system that identifies Critical Control Points (CCPs) during food preparation and production that are critical to food safety and will help to ensure food is safe. Suitable control measures are in place to manage all hazards that could be present during food production and handling. These measures include procedures, systems, risk assessments and training and all aim to prevent hazards from occurring or controlling them to an acceptable level.

For further details: Contact Nourish Catering Food Standards Scotland

D3.2 CONFERENCING AND EVENTS (ORGANISING AND HOSTING)

The John Anderson building has teaching space which is also used for Conferencing and Events on Levels 3, 4, 5 and 8. This space is managed by the Central Pool Teaching. The hire of the Conferencing and Events space either by internal users or external customers will be governed by the Terms and Conditions Governing the Use of University Premises. These terms and conditions detail the things which the hirer must take responsibility for in relation to Health & Safety/Fire Precautions, Staging and Props and Sound and Lighting. The Terms and Conditions will be issued by the Conferencing and Events team and must be signed by the hirer in conjunction with the booking contract.

University webpage: Conferencing and Events

D3.2.1 PHYSICS OCCUPANT LED EVENTS

From time to time, Physics will organise or hosts events for interested parties, both from within and from outside the University. Examples include schools' events, science fairs, graduate fairs, research presentation days and conferences. Physics has a duty to conduct these events in such a way as to ensure, so far as is reasonably practicable, that visitors are not exposed to risks to their health or safety. The hazards associated with an event may include equipment, lasers, chemicals, demonstrations, layout, location, lack of supervision, temporary structures etc.

For each event, an event safety Co-ordinator should be appointed to take on the role and task of ensuring the event will be suitably and safely managed. The event safety Co-ordinator and/or event committee will adhere to the advice in the guidance referred to below and will ensure that a suitable and sufficient risk assessment is made of the event and that appropriate risk control measures are implemented and remain effective.

University Guidance on Organising and Hosting Safe Events.

- All Physics staff events (other than those organised by conference and events) should be discussed with the Secretary to the Head of Department in the first instance.
- Once agreed to, the person organising the event will be the event safety Co-ordinator and require to follow and complete the appropriate University guidance.

D3.3 CONTRACTORS & EXTERNAL SERVICE PROVIDERS

Contractors include individuals, sole traders, businesses, organisations or other service providers external to the University, which are engaged to carry out work on or within the premises.

If not properly controlled, their work may expose the University community to risks to their health and safety. Similarly, work being carried out by University personnel may expose contractors to risks. Both parties owe reciprocal legal duties to ensure the health, safety and welfare of the other from the risks they generate.

On occasions Estates or Physics staff may require to engage external service providers for purposes such as: routine inspections, maintenance or repairing of systems or equipment; routine collections of items or equipment; hiring services, delivery or installation of equipment for special events.

Physics has a duty to ensure that external service providers are not exposed to risks to their health and safety by the way it conducts its undertaking. Similarly, service providers owe a reciprocal duty to the University community. Physics will therefore ensure that relevant information is exchanged and procedures implemented to enable all parties to conduct their work in a safe manner. The **S7 Form** is the main mechanism that should be used to demonstrate this exchange of information and this will be the case for many Estates managed, higher risk and larger scale works.

However, it is also recognised that this is not an appropriate practical method in all cases, so other arrangements may be used to complete this aspect. The Supervising Officer who is involved or responsible for bringing in the contractor or external service provider into the building should determine the most suitable method to exchange this information between parties.

The University Supervising Officer must provide a suitable induction, which must include appropriate fire safety instructions to service providers, who will be asked to convey such instructions to his employees who may not be present at the time of the initial meeting.

Since only Estates Services has the necessary competence to manage work involving construction, refurbishment, installation of services etc. then **all work to internal and external fabric and services must be referred to Estates Services** in the first instance.

Where a service provider's work may affect the building's fire detection system (e.g. hot work, or dust generation) then appropriate arrangements **MUST** be made beforehand, with Estates Services and the University Fire Safety Adviser, to avoid inadvertent operation of the alarm system and to ensure that fire protection is maintained. **At no time should any University work equipment be permitted to be used by a Service Provider.**

University Local Rules for Engaging External Service Providers; University Guidance on Safety Standards Expected from Service Providers University Guidance on Engaging External Service Providers;

- Works organised and undertaken by Estates Works management staff or contractors engaged directly by Estates, are managed by Estates whilst liaising with the Technical Support and Safety Manager, liaising with others in Estates as required.
- Staff will be notified in advance and advised of any potential impact by the works.

D3.4 DISABILITY, HEALTH AND WELL-BEING

Disability Support provides Information, advice and support for disabled students and staff. For example, the Service can help with arranging assessments, where these are needed to support applications for assistance measures that support safe working conditions for the applicant.

The University also offer a range of services for health and wellbeing of staff. Areas include general health, lifestyle, supporting services and mental health.

D3.5 ESTATES SERVICES

Estates Services are responsible for providing a wide variety of services and activities across the University, including space management, room bookings, general maintenance, waste management, grounds and gardens to name but a few.

D3.5.1 MAINTENANCE

The Works Management Section (WMS) of Estates Services is responsible for providing a complete routine maintenance service to the University. This includes maintaining buildings and services, carrying out minor alterations, upgrading of the existing property portfolio and meeting accommodation client needs. All maintenance and service requests are logged through the EMS (Estates Management System) by nominated personnel. Emergencies should be reported by telephone to the Estates Helpdesk on Ext. 2164 during the hours 08.00-17.00hrs and to Security Control Ext. 3333 outside of normal working hours.

Estates Services - Works Management

- All requests for Physics maintenance items should be reported to the Technical Support and Safety Manager including emergencies.
- Emergencies should be reported by telephone to the Estates Helpdesk on Ext. 2164 during the hours 08.00-17.00hrs and to Security Control Ext. 3333 outside of normal working hours.

D3.5.2 WASTE DISPOSAL – GENERAL & RECYCLING

The University's general waste and recycling system is identified below. For specialised laboratory waste disposal and recycling, see section <u>D.3.5.3</u>

Bin Type	Bin Description	What to Dispose	What not to Dispose
Convertor to training plastic packaging Wash and squash before disposing		What to dispose in the Plastic Packaging bin? All plastic bags Detergent bottles Disposable water cups Water and Drink bottles HDPE labelled items Milk cartons PET labelled items Plastic bottle tops Plastic food packaging Plastic food trays Tetra Pak cartons Yogurt pots	 Bubble Wrap Cans Cellophane Food and liquid residues Landfill waste Paper Plasticized paper Whole files with plastic dividers
Convolution times & drink cans		 Aluminium cans Aluminium foil Metal foil Tin cans Steel cans Wash and squash before disposing 	Empty aerosol cans Chrome Liquid & food residues Paper Plastic
Current la tatal		 White Paper Paper with staples Newspaper & magazines Office paper & Yellow Pages Junk mail & envelopes Catalogues & brochures Manila folders Brown paper Grey card & file folders Laminated / waxed paper Brown cardboard Shredded paper Toilet roll tubes Hand Towels 	 Plastics bottles or packaging Metal cans Plasticized paper Whole files with plastic dividers Jiffy or poly envelopes Laminated card or paper Plastic covers Food and crisp packets Plastic binding Bubble Wrap
Create to Lot		 All cooked and uncooked food Fruits and vegetables Meat and fish, including bones Bread, cakes, and pastries Dairy and eggs Rice, pasta, and beans Tea bags Coffee grounds 	 Oils and fats Foil and cling film Food and drink containers Empty packaging Cutlery, crockery or glass Bottles, cans or jars.
Create la solution		 Glass bottles Glass jars Drinking glasses Coffee jars Safety First- Broken glass is a health and safety hazard. All broken glass should be properly contained prior to disposal in the recycling caddie. Wash - Before disposing 	 Contaminated lab glass Winchester (brown chemical) bottles Glassware which has contained hazardous or special wastes Crockery Ceramics Glass wool



Estates Waste Management Policy Estates Services - Sustainable Strathclyde Estates - A-Z of Waste Disposal & Recycling

D3.5.3 WASTE DISPOSAL – LABORATORY WASTE

Lab waste can consist of a variety of different types of waste which must be appropriately segregated, stored, treated (if applicable) and disposed of. Please refer to the relevant sections for a summary of the segregation of general waste and laboratory hazardous (special) waste.

D3.5.3.1 CHEMICALS AND SOLVENT WASTE

For various reasons laboratory chemicals, solvents and other substances are required to be removed from Physics premises. Many of these chemicals are **hazardous** because of their potential to cause adverse effects to humans, animals or the environment and are therefore subject to statutory requirements for their handling, transportation and disposal.

Suitable waste containers are available for laboratories and workshops for the safe containment and segregation of chemical waste and surplus substances. These should be used as appropriate. The Physics Hazardous Waste Co-ordinator will liaise with the University Hazardous Waste Service, provide necessary information on Form S15 and ensure such waste is safely transferred for safe storage until removed for offsite treatment and disposal. This includes Flammable or toxic solvents.

Estates – Hazardous Waste Disposal

Please contact the Hazardous Waste Co-ordinator in the first instance for the day-to-day waste operations and contact your Lab Safety contact for any specific queries.

D3.5.3.2 CHEMICAL AND SOLVENT EMPTY CONTAINERS/BOTTLES

Where possible all empty chemical and solvent containers/bottles should be thoroughly washed out with water. Any 'empty' container with volatile substances (e.g. acetone, chloroform, etc.) **MUST** be placed in a fume cupboard until all odour has been eliminated. The containers must then be labelled in indelible marker pen with "Physics - clean waste".

Where possible all empty glass Winchester bottles from Sigma-Aldrich, VWR, Fisher and SLS should be returned to their suppliers (if possible). If residues of chemicals remain on glass bottles, then these should be disposed as Hazardous Waste. All other "clean" glass bottles can be disposed into the general glass waste stream.

D3.5.3.3 CLINICAL (SPECIAL) WASTE

Clinical waste is known as special waste in Scotland and is defined as any waste which consists wholly or partly of:

- human or animal tissue;
- blood or bodily fluids;
- excretions;
- drugs or other pharmaceutical products;
- swabs or dressings; or;
- syringes, needles or other sharp instruments; which unless rendered safe may prove hazardous to any person coming into contact with it; and:
- any other waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practical investigation, treatment, care teaching or research, or the collection of blood for transfusion, being waste which may cause infection to any person coming into contact with it.

The main hazards from clinical waste arise due to the existence of pathogens that may have the potential to cause disease in humans, animals or affect the environment. Good management of clinical waste focuses on ensuring that the risk of such exposure is minimised.

Clinical waste must be handled, moved, stored and transferred for offsite disposal through an approved waste contractor and in accordance with University procedures. Estates Services disposes of clinical and biological waste on behalf of the University. Subject to risk assessments, all animal and biological waste (including containers, tubes, residues, mixtures and disposable equipment) must be appropriately decontaminated by the appropriate manner before disposal. **All** biological waste must be treated and/or disposed as clinical waste.

Decontamination: Any containers placed in an autoclave should be arranged to allow penetration of steam.

Lab disposal: Designated bins with designated bags must be used for the disposal of clinical and microbiological waste in the laboratories. It is up to the originator of the waste to ensure that it is transported safely, in a suitable condition for autoclaving or disposal through the university waste disposal.

Sharps: Any sharp items contaminated with biological material (e.g. hypodermic needles, syringes, glass pipettes, blades etc.) should be discarded separately into the approved puncture-proof container for that specific purpose. This is a different container to that used for the safe disposal of sharps which are contaminated with chemicals. Disposal arrangements for biological sharps containers uses the same system as for the disposal of bagged clinical waste.

Estates - Clinical Waste Disposal

- Users who have clinical waste to dispose of should ensure waste has been appropriately segregated, treated, (if applicable e.g. by autoclaving) contained and appropriately labelled prior to disposal. NOTE: Waste labels are provided by the Clinical Waste Co-ordinator based on user needs.
- University uplifts for clinical waste are scheduled once a month.
- Each bag/container/item will require the correct label to be attached to it prior to being uplifted and transported by Estates Services.
- Please contact the Biological and Chemical Safety Adviser for specific queries or advice.

- The Clinical Waste Co-ordinator will send the CW1 form to Estates Services the Wednesday before the uplift date to confirm the waste details and the waste bins which are required to be uplifted.
- Further details on segregation can be obtained from the Clinical Waste Co-ordinator.

Example of European Waste Codes (EWCs)				
Description of waste	EWC			
Waste from research, diagnosis, treatmen	t or prevention of disease involving animals			
Sharps that are not Special Waste	180201			
Waste that is infectious	180202			
Waste that is not infectious	180203			
Cytotoxic and cytostatic medicines	180207			
Other medicines including controlled drugs	180208			
Identifiable human tissue, blood, animal carcases and tissue from labs				
Body parts and blood that is Special waste	180102			
Other wastes that are Special waste due to risk of infection	180103			
Other wastes that are not Special waste	180104			
Waste from human healthcare, diagno	osis, treatment or prevention of disease			
Sharps that are not Special waste	180101			
Sharps that are Special waste due to risk of infection	180103			
Cytotoxic and cytostatic medicines	180108			
Other medicines including controlled drugs	180109			
Microbiological cultures and potentially in	nfected waste from clinical or research labs			
Wastes that are Special waste due to risk of infection	180103			
Wastes that are not Special waste	180202			
Genetically n	nodified waste			
Animal tissue	180103			
Plant tissue	180103			

CW1 Form and Example of European Waste Codes for Waste Labelling

D3.5.3.4 GENERAL NON-HAZARDOUS WASTE

This includes general laboratory waste such as non-contaminated paper, plastics, packaging, tips, etc. These should be disposed of via the cleaning services in laboratory bins designated and labelled as non- hazardous waste. General waste is collected and delivered by cleaning staff to the general waste bin area.

Aqueous solutions of harmless inorganic substances and soluble organic compounds should be neutralised and well diluted before disposal down the drain.

D3.5.3.5 GLASS

Examine all glassware before use and reject any which is chipped or damaged. Dispose of broken glassware in the designated bins using a dustpan and brush or thick gloves; **never** put broken glass into ordinary rubbish. Keep contaminated and non-contaminated glass separate.

D3.5.3.6 GENERAL LOW-LEVEL LAB WASTE

Low level lab waste which is or may be chemically contaminated, must be disposed of as hazardous waste. This type of waste must be placed into the appropriate bin with a clear bag inside and **MUST NOT** be placed into lab general (non-contaminated) waste bins in labs. Once full, the bin bag must be sealed and the bag disposed via the Hazardous Waste route.

D3.5.3.7 SHARPS WASTE

This includes needles, scalpel blades, razors, etc. These items **MUST** go in a yellow sharps bin. They **MUST NOT** be placed into any other waste bins/bags. Once the bin is almost full, it should be sealed and taken disposed of as either hazardous or clinical waste depending on the bin contents. The appropriate waste disposal paperwork and procedure should be followed to allow the waste to be collected by specialist waste contractors for disposal.

Bag/Bin Type	Bin Description	Examples	Notes
Yellow Bags	Clinical & Biological Waste Waste which requires disposal by incineration in a suitably permitted or licensed facility		
Orange Autoclave Bags	Clinical & Biological Waste Autoclaved waste Indicative treatment has been "rendered safe" in a suitably permitted facility prior to disposal		this waste may also be disposed of by incineration
Blue bin	General laboratory glassware	(not including chemical bottles). Beakers, test tubes, pipette. Please wash the items if possible before depositing in the bin	
Green bin	General laboratory plastics	Pipette tips, beakers, centrifuge tubes, sample holders	
Yellow bin	General laboratory cleaning materials	PPE, tissues, hand tissues, gloves etc.	

D3.5.3.8 SUMMARY OF CLINICAL & HAZARDOUS (SPECIAL) WASTE DISPOSAL

Sealed rigid container 60ltr & Cytotoxic label	Cytotoxic waste Indicative treatment/disposal required is incineration in a suitably permitted or licensed facility.		Sealed container and bags must be labelled with a Cytotoxic label.
Rigid, puncture proof sharps container	Contaminated sharps	Contaminated needles, syringes with needles attached, broken glass ampoules, scalpel and other blades, infusion sets (the sharps part), medicinal waste in the form of bottles or vials	Containers with sharps contaminated with Cytotoxic/Cytostatic medicinal products must be labelled as Cytotoxic waste.
Sealed rigid container - 60ltr	Offensive waste-	body parts or other recognisable anatomical items, such as small animal carcasses (Larger items can be placed in larger receptacles).	

D3.5.4 WATER QUALITY MANAGEMENT

Legionnaires` disease is a potentially fatal pneumonia caused by legionella bacteria, which are widespread in natural water courses such as rivers and ponds. The bacteria may also grow in manufactured water systems such as hot and cold-water services and plant which use or store water. Water temperatures in the range 20°C to 45°C seem to favour growth.

Infection is caused by breathing in small droplets of water contaminated by the bacteria. Everyone is potentially susceptible to infection but some people are at higher risk, e.g. those over 45 years of age, smokers and heavy drinkers, those suffering from chronic respiratory or kidney disease, and people whose immune system is impaired. The disease cannot be passed from one person to another.

Estates Services implement an established programme to identify potential sources of the legionella organism and to manage the University's water systems in order to prevent its proliferation and to control the risk of exposure.

In addition, Estates Services manage the quality of stored water and water supplied from storage through a schedule of physical inspections, microbiological and chemical testing (by UKAS accredited laboratory) and disinfecting.

Estates Services - Information on drinking water
D3.6 SAFETY, HEALTH AND WELL-BEING

The University's Safety, Health and Well-Being Team (previously known as Occupational Health and Safety) is responsible for setting out the University Health and Safety Management system and coordinate, support, appraise and maintain the effectiveness of this. There are several experienced advisers, who are responsible for producing a variety of health and safety related guidance and information and are able to offer advice on a variety of topics including risk and resilience, general, fire, chemical, biological and radiation safety.

SWR Webpages

D3.7 OCCUPATIONAL HEALTH SERVICE

Occupational health is concerned with the impact of work and the working environment on an employee's health and the impact of an employee's health on their work.

The OHS provides support to Human Resources and departmental managers in developing healthy workplace policies and promoting environments where employees are healthy and well-motivated. It also provides an impartial and confidential support service to individual members of staff, plus postgraduates and undergraduates where the nature of their work or course work poses a risk to health. Individuals may self-refer or request referral through their Line Manager.

The University provides a confidential an Occupational Health Service that can be contacted directly on ext. 4824 (occupationalhealth@strath.ac.uk)

University Local Rule: Occupational Health OHS Webpages

D3.7.1 HEALTH SURVEILLANCE

Some Regulations require health surveillance where appropriate for the protection of the health of employees, and postgraduate students, exposed to substances hazardous to health. The University Occupational Health Service manages these arrangements with individuals and their line managers where required. Employees engaged in work of a hazardous nature which may cause an identifiable adverse health effect may be required to comply with a specific health surveillance programme. Health surveillance programmes are in place for individuals that work with certain chemical, biological and radiological materials. Contact the Health & Safety Adviser or Safety, Health & Well-Being for further details.

D3.7.2 PERSONAL HEALTH ISSUES

Most people have or will encounter some form of personal health issue(s) during and/or throughout their life. Various factors can affect a person's health and well-being, and these can be due to internal factors (e.g. inherited or acquired, such as a medical condition or physical impairment) or external factors (generally out with the individual's control such as the unexpected death of a family member). These can result in the individual having some personal issues that may need to be recognised or require some form of assistance. Personal issues can be temporary or permanent and can be wide and varied in nature. For example, a person who has a

temporary condition such as a broken leg, may need some additional assistance in terms of access to and egress from the building, they may require some adjustments to be made to their work equipment or their work procedures etc. Some individuals may have certain allergies that need routine monitoring, or in some cases, an individual may suspect that they are starting to develop an allergy or becoming sensitised to something they work with. Some other examples which come into this category are conditions related to pregnancy, disability or mental health issues.

It is therefore, important for individuals to contact the appropriate departmental person, Occupational Health Service or Disability Support if they have a personal issue that may affect the health, safety and wellbeing of themselves or others.

- Occupational Health Service : ext. 4824
- Department Disability Support : Dr Helen Vaughan / Deputy Jacqueline Gordon

D3.8 OCCUPATIONAL HYGIENE

Occupational hygiene is concerned with people and their working environments. It uses scientific and engineering techniques to measure workplace exposures to agents harmful to health. The results are then used to determine the effectiveness of existing risk control measures, to evaluate risks to health, to advise on new measures to control the resulting risks and to assist design of safer processes or activities. Harmful agents include chemical vapours, dusts, heat, cold, noise, vibration, plus ergonomic and psychological hazards.

The University's Occupational Hygiene Service is provided by an external competent occupational hygienist and falls within the remit of SWR. All those responsible for designing, assessing and running work/research activities, which utilise or generate agents' hazardous to human health, are required to identify occupational hygiene needs. Contact SWR for occupational hygiene queries or to make arrangement for monitoring.

Users and those responsible should also be vigilant as to the effectiveness of existing risk control measures designed to protect health; any suspicion of fault or ineffectiveness should be reported immediately to a line manager.

University Guidance on Occupational Hygiene Services

D4 GENERAL WORKPLACE HAZARDS

This section covers general workplace hazards that are applicable to all building occupants. For each hazard, it then explains the main requirements and management controls in more detail. These hazards can apply to all individuals and all areas to some extent.

D4.1 DISPLAY SCREEN EQUIPMENT

Display screen equipment (DSE) includes any screen used to display letters, numerals, computer-generated graphics or pictures, but excludes portable systems having small data used for short periods, such as calculators. A workstation assembly includes DSE, its accessories and furniture, plus the working environment.

Within the University, a 'user' of display screen equipment (DSE) is defined as either:

- someone who uses DSE more or less continuously as the main part of their job, or,
- someone who uses DSE sporadically for 2 hours a day or more, averaged over a week.

These definitions are likely to encompass most technical, academic and administrative staff.

The associated hazards include the prolonged/incorrect use of display screen equipment and/or poor arrangement of the workstation which can give rise to ill health effects, such as, repetitive strain injury, muscular-skeletal disorders and eye problems.

All workstation users in Physics are required to have an up-to-date workstation assessment in place. Where possible, all staff and postgraduates should complete DSE Assessor training and carry out their own workstation assessment. If this is not possible, occupants should organise this to be carried out by the DSE assessor. Any identified issues will be flagged up through the assessment and sent to the Departmental DSE assessor for action. Any recommended risk control measure should then be followed up within an appropriate timescale.

Users are encouraged to report, to their line manager or DSC without delay, any health issues arising from the use of display screen equipment so that early remedial action can be taken. Workstation users are entitled to a free eye and eyesight test to determine any requirement for corrective appliances (glasses) for viewing a display screen at the normal viewing distance. If glasses are required, Physics (for Physics staff) will pay up to £54 towards their purchase. Further details may be obtained from the Health & Safety Adviser, or DSC's.

Users will be required to complete SWR's **Display Screen Equipment On-Line Awareness** training, where they will receive useful information and instruction to carry out an assessment and to help minimise the health risks.

University Standard - Display Screen Equipment Display Screen Equipment On-line Awareness training course Display Screen Equipment (DSE) Risk Assessors training course Homeworking Checklist Work with Display Screen Equipment (L26 HSE)

- Complete DSE Awareness / assessor training (online or via a class course as appropriate) and complete your own workstation assessment or arrange to have a workstation assessment done through your Departmental Assessors.
- Send a copy of the completed assessment to the DSE assessor/Technical Support and Safety Manager. If your assessment is carried out by someone else, then you will still be required to complete the University's Display Screen Equipment course (class or online)

D4.2 DRIVING

It is recognised that in the course of their work, it is necessary for staff to travel to various locations within the UK, for example, to attend conferences, to visit host employers or simply between campuses. Where possible, the use of public transport should be the default choice for travel. Where this is not practicable or convenient, University, hired or private vehicles may be used, with the appropriate consent, checks and authorisations.

Heads of Department are responsible for ensuring suitable arrangements and provisions are in place for the management of departmental vehicles and road risks. This includes where staff and students drive on behalf of the University for business purposes, either on a casual basis as part of their employment or for convenience e.g. travel between University premises.

The University Standard for the Management of Road Risks covers all aspects of this and includes:

- Vehicles
- Driver licences, Insurance
- Fitness to drive and ergonomics
- Journey planning
- Transport of materials
- Risk Assessments
- Smoking, vaping, mobile devices
- Accidents and breakdowns
- Minibuses

University Standard for Management of Occupational Road Risks University Local Rule for Travel and Working off Campus Workplace Transport Safety – An Overview – INDG 199 HSE

- Complete 'Driver Self-Declaration' Form and 'Medical Health Assessment' Form if applicable
- Submit to Departmental MORR Manager or Occupational Health Service as applicable
- Await confirmation from MORR Manager if approval to drive has been given
- Complete any additional requirements e.g. risk assessment, vehicle checks, journey planning etc prior to driving.

MORR Co-ordinator is: Departmental Manager

D4.3 ELECTRICAL SAFETY

The main hazards from electricity and electrical equipment are:

- contact with live parts causing shock, burns or death (normal mains voltage of 230 volts AC, can kill);
- faults which could cause fires;
- fire or explosion where electricity could be the source of ignition in a potentially flammable or explosive atmosphere, e.g. in a chemical store.

The risk of injury from electricity is strongly linked to where and how it is used. The risks are greatest in harsh conditions, for example:

- in wet surroundings unsuitable equipment can easily become live and can make its surroundings live;
- out of doors equipment may not only become wet but may be at greater risk of damage;
- in cramped spaces with a lot of earthed metalwork, such as inside a tank or bin if an electrical fault developed it could be very difficult to avoid a shock;
- frequently used equipment, such as extension leads, whose plugs, sockets, connections and cable can suffer damage.

Estates Services are responsible for the regular testing and repair of all electrical services within the University, e.g. isolators, busbars, sockets, fixed installations etc, so access to the electrical system is not permitted unless managed by Estates Services and the relevant permit-to-work issued.

University Local Rule for Electrical Safety Memorandum of Guidance on the Electricity at Work Regulations 1989 (HRS25 HSE);

D4.3.1 GENERAL SAFE WORKING PRACTICE FOR ELECTRICAL EQUIPMENT

A. Visual Inspection: User Checks

Any user with basic electrical knowledge together with common sense could be regarded as competent to carry out the following simple checks:-

- All electrical equipment should be used with care and respect.
- Do not overload the mains power outlet circuits supplying mains sockets.
- Do not plug several heavy current installations e.g. ovens, centrifuges into adjacent sockets.
- Visually check all electrical equipment prior to use, to ensure that all cables and connections appear to be in sound condition.
- Use low voltage equipment where applicable.
- Use safety devices (e.g. residual current devices where provided or if required by the relevant risk assessment or safe system of work).
- The use of adapters is not recommended.
- Block type adaptors should not be used as these can encourage overload and local overheating.
- Where an adaptor is required, this should be of the fused and switched 4-socket strip type.
- <u>Under no circumstances should strip adaptors be `daisy chained' together.</u>
- Familiarise yourself with the position of isolating switches for equipment you are using.
- Isolators must never be locked in the 'on' position; the occasion may arise when speedy isolation is imperative.
- Trailing mains and other cables can be dangerous. They must be shortened/tucked away or lifted above walkways. If a cable does lie across a walkway a cable protector must be used to reduce the trip hazard.
- Equipment incorporating fans with inlets and outlets for air circulation must be installed with consideration given to not obstructing these features. This particularly applies to equipment pushed up against a wall or to the back of a bench.
- Equipment should always be used in strict accordance with the manufacturers' instructions.
- Electrical apparatus that may be safe in normal laboratory conditions may be dangerous in a wet/damp

environment such as cold-rooms. Apparatus must either be especially designed for the wet environment or protected by an appropriate residual current device type circuit breaker (RCD) if mains power is to be used.

- Users of hand-held equipment and items that are moved regularly should take particular care to avoid damaging the mains cable and plug. It is important not to stretch the cable and put stress on internal connections of the plug or apparatus.
- Apart from installations designed to be left on permanently, all equipment should be switched off after use at the appliance itself and at the wall socket at the end of the day (unless an S19 form has been completed for it to remain running overnight or out with normal working hours).
- In the event of fire or flood **never** switch on lights or any electrical appliance only Estates Services are authorised to check and restore power.
- If trained to do so, use only suitable extinguishers on electrical fires i.e. carbon dioxide.

ALL electrical equipment and installations within the Physics must be regularly inspected and maintained. Depending on the equipment type and owner, this responsibility will fall to either Estates Services or the Department.

B. Formal Visual Inspection

At intervals determined by a risk assessment the apparatus and its usage, basic user checks should also be carried out in a more detailed manner by a qualified person with adequate technical knowledge. These checks should only be carried out by a person considered "qualified" by virtue of relevant experience, qualification or attendance at an appropriate training course. Such a person should know how to use the equipment correctly and how to interpret the results of any checks that are made. The Electrical Safety Officer can provide advice on the formal visual inspection.

- Before using the equipment, ensure you have received proper training on how to use it.
- Do a visual inspection, checking that there are no visible signs of damage and that is has been PAT tested (see section D4.3.4 also).
- Do not interfere or attempt to modify electrical equipment unless trained and permitted to do so.
- Do not interchange mains leads and cables between equipment.
- Adapters if used, if essential, do not overload these.
- Damaged or faulty equipment **MUST** be taken out of use immediately and reported to a suitable person for checking/repair.

D4.3.2 LIVE WORKING

Under the Electricity at Work Regulations 1989, work on live equipment should only be carried out if there is no reasonably practical alternative. Personnel wishing to work on live equipment *must* present a written case to their HOD and/or Estates Services, justifying the need to work live, detailing the safe system of work to be used and their competence to carry out the work, in terms of experience and technical knowledge. If Senior Management are satisfied with the case and the risk control measures detailed, then written permission for live working may be given at their discretion. Estates Services has its own control arrangements for live working.

D4.3.3 ELECTRICAL ACCIDENTS AND FIRES

The majority of electrical accidents are caused by electric shock resulting in electrocution. However, others can result in severe burns from arcing or fire. Shock from voltages as low as 120v AC and 50v DC can be potentially lethal.

In the event of an accident involving electrocution **DO NOT TOUCH THE VICTIM.** Always switch off the electrical power first before attempting to move the victim, commencing cardiac and/or mouth to mouth resuscitation and other appropriate First Aid. If this is not possible, use an insulated pole e.g. broom handle, to lever the victim away from the electrical source! In the event of electrical equipment severely overheating and catching fire, firstly SWITCH OFF THE POWER AT THE MAINS SOCKET if at all possible before tackling the conflagration with a CARBON DIOXIDE fire extinguisher.

D4.3.4 PORTABLE ELECTRICAL EQUIPMENT

All portable electrical equipment must be inspected by a competent person at regular intervals, taking account of manufacturers' recommendations, frequency of use and service conditions.

In between the official inspections and testing, users should regularly examine their equipment for signs of damage or deterioration, both on the appliance and on the mains cable and plug. Hand-held tools and portable apparatus e.g. stirrers, bench lamps, should be visually checked every time before they are used.

All equipment should be safe to work on arrival and prior to first use. In most cases equipment will either be brand new equipment bought from reputable manufacturers' or it will be within its recommended portable appliance testing period. Thereafter, all portable electrical equipment should be visually checked prior to use (where possible). In addition, formal Portable Appliance Testing (PAT) should be undertaken for electrical equipment on a risk basis which takes into consideration use, activity, equipment type, environment etc.

Individuals are discouraged from bringing to the University personal electrical equipment, however where appropriate e.g. mobile phone charges, laptop chargers etc., these should be included in the inspection and testing regime for the area/group. In all respects, the University Local Rule: Electrical Safety should be strictly observed.

NOTE: (Qualified" P.A.T." testers only)

- 1) After passing the visual inspection, a piece of equipment should be tested for adequate earth and evidence of internal leakage current using a Portable Appliance Tester.
- 2) The most frequently found faults are concerned with the earth path of devices. It is a general rule that any metal parts of a casting that could be rendered live by coming into contact with a wire or some other internal high voltage part under fault conditions must be earthed. This includes any screws which although holding a plastic housing in place may themselves project into the interior of the device. In general, check all exterior metal parts and if any are found to be un-earthed, understand why this is the case before proceeding further.

Equipment that passes both tests must be marked with a sticker.

Double Insulated Equipment

Only earthed equipment can be inspected with a Portable Appliance Tester. Double insulated equipment (like modern VDU's and computers) should be visually checked only. Double insulation is denoted by a symbol on the equipment that shows two squares, one inside the other.

High voltage testing of such equipment can be dangerous and lead to severe damage, and should not be attempted. **Preventative Maintenance**

Prompt maintenance (by competent people) of equipment that has failed inspection or testing, to correct minor faults before equipment failure, should be carried out.

Repair

The repair of failed equipment by competent, or, if necessary, specialist people (internal or external) should be carried out. Suspect or faulty apparatus should be taken out of use, put in a secure place, and labeled '**do not use**' until attended to by a competent person.

Disposal

Equipment which is found to be beyond repair should be disabled by cutting off the mains leads, removed from the work place and moved to a recognised rubbish collection point. All laptops, computers and items of value are registered on the university asset register so details of disposed items must be reported to the Technical Support and Safety Manager.

- Arrange disposal of item with supplier or Technical Support and Safety Manager
- Update relevant Asset Register or equipment inventory by reporting to the Technical Support and Safety Manager

Frequency of Inspection and Testing

Frequency of inspection and testing depends on the type of equipment and how it is used. Equipment involved in heavy-duty use, used in harsh environments, high current and with the potential to damage it, falls in a high-risk category and should be tested frequently. Extreme low voltage equipment and apparatus that is rarely moved may be inspected at regular intervals.

University Local Rule for Electrical Safety Maintaining Portable Electric Equipment (HSE HSG107) Maintaining Portable Electric Equipment in Low Risk Environments (HSE INDG236)

- Inspection and test results should be recorded and available for inspection if required.
- PAT testing can be carried out via the Dept. or via Estates Services to arrange this (at cost).
- Groups with suitable and competent staff can undertake and continue with their own PAT testing regime. For Groups that don't have the necessary resources for this, then they need to organise for this to be carried out via the PAT Co-ordinator.
- All Depts./Groups/Areas should be able to confirm that their equipment is being inspected and tested as required and that evidence of this can be visibly viewed and/or produced if requested.
- Do not interfere or attempt to modify electrical equipment unless trained and permitted to do so.
- Do not interchange mains leads and cables between equipment.
- Do not overload mains extensions or adaptors.
- Damaged or faulty equipment MUST be taken out of use immediately and reported to the PAT

Co-ordinator VIA the Group Supervisor for checking.

D4.3.5 FIXED APPLIANCE TESTING (FAT) AND INSPECTION

A fixed appliance is an electrical appliance which is usually connected to the electricity supply via a fused outlet to which the flex is permanently connected. Fixed appliance examples include: some specialist laboratory equipment, ovens, chillers, large machinery etc.

All electrical appliances which are 'hard wired' into the building's electrical systems must be inspected and confirmed safe prior to use. This includes equipment connected to single or three phase electrical supplies. Thereafter, this equipment must be routinely inspected and test results retained. The University's Local Rule and Guidance Document for Electrical Safety must also be followed.

The testing and inspection of electrical fixed wiring systems i.e. those that are part of the building infrastructure and cover electrical supplies from the source of origin, via distribution systems to electrical outlet points, is the responsibility of Estates Services and is not included or covered here.

Most fixed appliances will be required to be on the university asset register.

- Inspection and test results should be recorded and be available for reviewing/auditing if required.
- To arrange for FAT testing contact Technical Support and Safety Manager or Estates Services.
- To register your <u>equipment</u>, contact the Admin Team for an Asset Register form (ADM-ASF-16).

D4.3.6 PROCUREMENT AND "SECOND-HAND" EQUIPMENT

Potential purchasers must ensure that the equipment to be obtained is electrically suited to the intended use. Expert advice should be sought and manufacturers" literature consulted. So far as is reasonably practical, equipment conforming to the appropriate British Standard should be purchased. When obtaining foreign equipment, the purchaser should ensure that the equipment is as least as safe as equipment constructed to the equivalent British Standard e.g. IEC Standards.

Used, "second-hand" or equipment on loan **MUST** also be checked by a competent person prior to use.

HSE: Electrical Safety Standards

- Arrange for equipment to be inspected and electrical tested prior to use.
- Update relevant Dept. Asset Register or equipment inventory.

D4.3.7 DISPOSAL OF ELECTRICAL EQUIPMENT

Electrical equipment must be appropriately disposed of in accordance with the Waste Electrical and Electronic Equipment Regulations (WEEE) and details updated on relevant equipment databases, such as Departmental Asset Registers where applicable. In some cases, suppliers will remove old electrical equipment, in other cases disposal can be arranged via Technical Support and Safety or Estates Services.

- Arrange disposal of item with supplier or via Technical Support and Safety Manager
- Update relevant Asset Register or equipment inventory via Technical Support and Safety Manager

D4.4 FIELDWORK

Fieldwork (or a Study Trip) is defined as any practical work carried out by staff or students, for the purpose of teaching and/or research, in places which are not under University control, but where the University is

responsible for the safety of its staff and/or students and of others exposed to their activities. Voluntary and leisure activities are excluded.

Hazards in study trips may include, travel arrangements, remote and/or rugged terrain, extremes of weather, collecting of samples etc., leading to serious accident, or illness.

The Head of Department must be satisfied that the study trip organiser (usually the member of academic staff responsible for that part of the coursework) has planned the trip in advance; is competent to lead, has sufficient awareness of the legal obligations to those under their supervision and that the study trip meets University safety criteria. The PI/Line Manager or study trip organiser; will ensure that a suitable and sufficient assessment is made of the risks to the health and safety of the staff/students in question and of other persons who could be affected and that a safe system of work has been established for the study trip.

Areas that should be covered include:

- Fieldwork health and safety policy, procedures, arrangements and authorisation processes
- Advance planning and preparation for the trip
- Inclusion of threat analysis
- Risk assessment
- Incident and emergency response planning
- Insurance
- Exchange of information
- Communication
- Competency
- Supervision
- Health, medical and disability issues
- Third party providers
- Accommodation, catering, transport, equipment
- Monitoring and review

Staff and students involved in study trips will be fully informed of the nature of the work and the associated hazards, through communication of the significant findings of the risk assessment carried out. This process can also serve as a preliminary health checklist, since some study trip activities may prove to be physically or psychologically challenging. The early identification of such issues will allow liaison with the Occupational Health Service (for staff) or the Student Health Service (for students) to ensure a suitable resolution.

University Local Rule for Travel and Working off Campus University Local Rules for Management of Occupational Road Risk Standard

• Arrange via your Departmental contacts and procedures for following required guidance.

D4.5 HOMEWORKING

The term 'home worker' applies to members of staff who have been given permission, by their Supervisor or Line Manager, to carry out certain types of work in the home environment. The role and objectives of home workers should be clear, both to the individual and to their Line Manager.

The Department must facilitate the undertaking of display screen equipment assessments for all relevant personnel and consider both the HSE's Management Standards for Stress and communications issues.

OHS Standard for Display Screen Equipment University Guidelines for Home Working Homeworking Checklist Display Screen Equipment (DSE) Risk Assessors training course Homeworking (INDG226 HSE);

For Agile Working Policy see Web Toolkit for Staff and Managers

D4.6 MANUAL HANDLING

Manual handling operations are those that involve the transporting or supporting of a load by hand or bodily force, including lifting, lowering, pushing, pulling, carrying or moving discrete objects.

If you are either occasionally or regularly involved in such operations, then you should contact the Dept. Manual Handling Assessor. The Assessor will apply a structured approach to each manual handling operation to determine if a formal assessment is required and what measures are necessary to minimise the risks to as low a level as reasonably practicable. Any resulting assessment findings will be available to you to read, sign for and work in accordance with. In addition, the Assessor will advise you of any necessary training requirements.

Written risk assessments should be produced for routine handling of heavy/awkward objects. "One-off" lifts of heavy/awkward objects should be assessed by the person concerned to determine if they can lift the object without risk of injury. All staff and students who undertake manual handling tasks as a regular part of their jobs MUST attend the manual handling training course.

Think Before Lifting/Handling

Plan the lift. Can handling aids be used? Where is the load going to be placed? Will help be needed with the load? Remove obstructions such as discarded wrapping materials.

Lifting from the floor

- Bend at the knees, to crouch with one foot on either side of the load.
- Rock the load to test if it is within your lifting capabilities.
- Grip the load securely by its faraway corners.
- Raise your head, tucking in your chin. (This straightens the back without tensing the muscles, reducing the chances of injury.)
- Straighten the knees and stand while holding the load close to the body.
- When lowering the load, the above steps are carried out in reverse.
- IT IS IMPORTANT TO KEEP THE BACK STRAIGHT, YET CLOSE TO THE LOAD.
- Avoid over reaching or stretching. BEND the KNEES. DO NOT STOOP.
- If the load is bulky, heavy, has sharp edges, or is a difficult shape which makes the above operation difficult to carry out then the operation requires assessment by a trained manual handling assessor.

Changing grip

DO NOT attempt to change your grip on the load while still carrying it. This may result in loss of control over the load. An attempt to 'recapture' the load could result in injury to the back, shoulders, arms, etc. from twisting or 'jarring'. Instead the load should be placed on a level flat surface at approximately waist height, e.g. a table, and then picked up.

Carrying the load

- Keep the load close to your body, with your elbows and chin tucked in.
- Change direction by using your feet, NOT by twisting.

- If the load is so heavy that you find yourself stooping or leaning back to counterbalance it, then the operation should be assessed.
- If it is so bulky that it impairs your vision or you cannot grip it properly then again, the operation should be assessed.
- Unless very light (less than 5 Kg) frequent rests should be taken every 10 minutes or so.

University Standard for Manual Handling Manual Handling On-Line Awareness Training Manual Handling Risk Assessors Training The Manual Handling Operation Regulations 1992 (L23 HSE) Manual handling at work – a brief guide (INDG143 HSE)

- Complete the University's Manual Handling Awareness Course On-Line and the Assessors training where applicable.
- Ensure you have a manual handling risk assessment in place (if required for the task) and have been trained for carrying out the operation(s).
- Groups should have their own trained manual handling assessors. Contact these assessors to arrange for a manual handling assessment to be carried out.
- Details of Manual handling aides training is available via Technical Support and Safety Manager (group cost).
- Do not attempt to move a load if you are in any doubt as to your ability to do so without risk to your health.

D4.7 MENTAL HEALTH & WELL-BEING

The World Health Organisation (WHO) defines mental health as 'a state of wellbeing in which the individual realises his or her abilities, can cope with the normal stresses of life, work productively and fruitfully, and is able to contribute to his or her community'.

Our mental health influences our physical health, as well as our capability to lead a healthy lifestyle and to manage and recover from physical health conditions.

People with physical health problems, especially long-term conditions, are at increased risk of poor mental health - particularly depression and anxiety. Around 30% of people with any long-term physical health condition also have a mental health problem. Poor mental health, in turn, exacerbates some long-term conditions, such as chronic pain.

D4.7.1 STRESS (WORK-RELATED)

The term 'work related stress' refers to an adverse reaction that an individual has to work demands of various types and combinations that exceed their capacity and capability to cope. Common physical symptoms include headaches, insomnia and digestive problems. Psychological and emotional symptoms include anxiety, depression, anger and loss of confidence. Stress is a significant cause of illness and disease and is known to be linked with high levels of sickness absence, staff turnover and other indicators of organizational underperformance - including human error.

To manage stress effectively, the University has embraced the Management Standards approach, developed by the Health and Safety Executive, which is designed to simplify risk assessments for stress, encourage partnership working to address it and to provide a benchmark against which Physics can gauge its performance in managing the key causes of stress.

Managers play a key role and have access to training, advice and help to improve understanding of stress and how best to support staff. They will work with employees and key support services at the University to identify stress issues and then agree realistic and workable ways to address the issues.

If you experience stress, irrespective of its source, you are advised to speak to your manager, someone in Human Resources, the Occupational Health Service, a Trade Union representative or another relevant member of staff to discuss a way forward.

University Mental Health and Wellbeing Support University Leaflet: Stress – Information for Employees. Occupational Health & Wellbeing - Stress and Mental Health HSE Stress web pages

D4.8 NEW AND EXPECTANT MOTHERS

As a rule, risk assessments of a general nature should include any specific risks to females of childbearing age, who could in the future, become an expectant or new mother. However, once a Head of Department has received formal written notification that an individual is pregnant; has given birth in the last 6 months or is breastfeeding, action must be taken to ensure they are not exposed to any significant risk that may affect their own health and safety or that of their child. This requires carrying out a risk assessment specific to the individual, based on the general assessment for their work and any medical advice the individual provides from their GP or midwife. Where risks cannot be avoided by preventive and protective measures then, where reasonable and feasible alternative options must be investigated.

Some hazards in the workplace may affect the health and safety of new and expectant mothers (NEMS) and a specific written risk assessment (S12) must be completed. Staff should notify the Head of Department in writing that they are pregnant or have returned to work as an expectant mother. Other Staff and students should notify their relevant PI's in writing. Only when written notification has been received, can arrangements be made for the individual's supervisor/line manager, DSC or the Health & Safety Adviser to carry out the NEM risk assessment. The assessment should be carried out by the most appropriate person who is familiar with the work activities of the individual. It is in the interest of the individual to notify as soon as possible.

University OHS for New & Expectant Mothers; New and Expectant Mothers - HSE

- Notification must be made in writing to the individual's Head of Department.
- The NEMS risk assessment (S12) must be completed by a suitable person and reviewed regularly as appropriate.

D4.9 SMOKING AND VAPING

The University recognises it has a legal duty to comply with the Smoking, Health and Social Care (Scotland) Act 2005, which prohibits smoking in wholly or substantially enclosed public places. The University's No-Smoking Policy applies to all staff, students, visitors and contractors. Smoking and vaping of e-cigarettes are both treated the same in respect of the 'no smoking policy' and is outlined below:

SMOKING IS PROHIBITED within 15 feet (4.6m) of any University building entrance, doorway, stairs or covered areas where this distance is within University property.

Smokers are requested to take a responsible attitude to ensure that areas are kept litter free and they do not stand in close proximity to open windows, and specifically where 'no smoking' signage is in place. Failure to comply with this policy could result in disciplinary action being taken against individuals. Due to the potential for re-usable e-cigarettes to explode or ignite while recharging owing to the lack of over-charge safeguards, charging of e-cigarettes is not permitted in University premises or vehicles.

University Standard – No Smoking Smoking, Health and Social Care (Scotland) Act 2005.

D4.10 TRAVELLING OR WORKING OFF-CAMPUS

This includes any work-related activity that takes place in the United Kingdom or abroad. Please see the relevant sections below.

D4.10.1 WORKING ABROAD

Whilst most business travel, for example, to attend meetings or conferences in say, developed countries can generally be categorised as low risk, overseas travel will still require some additional advance planning, care and common sense. Travel abroad, can expose staff and students to a number of health and safety hazards arising specifically from the travel itself and/or the conditions within the country being visited at the time. These hazards may not be directly work-related.

The hazards concerned with travelling and working overseas can include, deep vein thrombosis during long-haul flights, civil and political unrest, infectious diseases, unreliable medical facilities, poor sanitation and food hygiene standards, poor standards of driving, higher crime rates and over exposure to the sun.

The Foreign and Commonwealth Office (FCO), Travel Advice section provides up to date information on the political stability in countries throughout the world. It also issues warnings against travelling to certain countries or parts thereof. Prior to planning any overseas business trip, please check with the FCO that it is safe to travel to your intended destination(s).

The University's liability insurance cover protects the University, its staff and students from liabilities occurring in the course of University business. However, travelling against FCO advice will invalidate this cover. The cover is not intended to be all embracing and it is recommended that staff/students consider the need for additional cover in relation to, for example, certain high value personal effects or extended travel. It is essential to read the information in the Travel Insurance Information Pack issued by the Finance Office and to notify it of proposed travel, using the Travel Insurance Notification Form, included in the pack.

The planning of an overseas business trip should include being informed about health risks and accessibility to reliable healthcare, local laws, customs and political situations and contact details of UK Embassy, High Commission or Consulate etc. It is advisable to consult your GP or Travel Clinic approximately 6 weeks before departure for immunisation advice.

In addition, a risk assessment should be undertaken of the work being carried out, either by the host organisation or University personnel, or a collaboration of both, depending on the degree of control each has over the work.

- Check travel advice from the FCO
- Follow Finance Office Procedures and Complete Travel Insurance Notification Form if applicable
- Arrange via your Departmental contacts and procedures for following required guidance.

University Local Rule for Travel and Working off University Campus – Staff and Students Local Rule for Management of Road Risks University Finance Office – Insurance Arrangements Foreign and Commonwealth Office (FCO)

D4.10.2 WORKING IN THE UK

A proportionate degree of planning should also be carried out for proposed work or travel within the UK, including an assessment of the risks. Appropriate contact and other details should be left with the appropriate Departmental contact for information and safe keeping. These arrangements apply irrespective of the type of employment contract that may exist (e.g. KTP Associates, casual workers, agency workers, volunteers).

- Follow Finance Office Procedures and Complete Travel Insurance Notification Form if applicable
- Arrange via your Departmental contacts and procedures for following required guidance.

D4.11 WORK AT HEIGHT AND LIFTING OPERATIONS

A place is 'at height' if a person could be injured falling from it, even if it is at or below ground level (unless appropriate measures are in place or are followed, as outlined in the Work at Height Regulations). For instance, an individual using a stepladder to retrieve items from shelving would be working at height.

Falls from height remain the single biggest cause of workplace deaths and one of the main causes of major injury. Physics will adhere to the following hierarchy for managing work at height:

- it will avoid work at height, where reasonably practicable;
- where work at height cannot be avoided, it will use work equipment or other measures to prevent falls;
- where the risk of a fall cannot be eliminated, it will use work equipment or other measures to minimise the distance and consequences of a fall should one occur.

Lifting operations involving lifting equipment must be properly planned by a competent person, appropriately supervised and carried out in a safe manner. In addition all equipment used for lifting must be fit for purpose, appropriate for the task, suitably marked and, in many cases, subject to documented statutory periodic through examination. Records must be kept of all thorough examinations and any defects found must be reported to both the person responsible for the equipment and the relevant enforcing authority.

A 'lifting operation' is an operation concerned with the lifting or lowering of a load. A 'load' is the item or items being lifted, which includes a person or people. 'Lifting equipment' means work equipment for lifting and lowering loads. This includes lifting accessories and attachments used for anchoring, fixing or supporting the equipment.

University Local Rule: Work at Height The Work at Height Regulations 2005 (as amended) – A brief guide (INDG401 HSE).

- Do not use any defective items or items without a test record. Remove item/s from service and report to the Technical Support and Safety Manager.
- All work at height must be risk assessed and planned, organised and carried out by competent persons with the necessary knowledge, experience and training in this area.
- All kick stools, ladders and platforms must be inspected on an annual basis and should have a test record attached to the equipment.

D4.12 WORKPLACE SAFETY

A "workplace" means any premises or part of premises which are made available to any person as a place of work, or to which they have access while at work for example, a room, laboratory, workshop, corridor, staircase etc. Physics aims to provide safe workplaces for all users and visitors.

D4.12.1 WORKING ENVIRONMENT

The internal working environment relates to issues such as the maintenance and cleanliness of the workplace, ventilation, temperature, lighting, available space and welfare facilities. The temperature in workrooms should normally be at least 16 degrees Celsius unless much of the work involves severe physical effort in which case the temperature should be at least 13 degrees Celsius. These temperatures may not, however, ensure reasonable comfort, depending on other factors such as air movement and relative humidity.

Estates Services is responsible for maintaining and repairing all University buildings, fabric, fittings and services.

• Report working environment defects or issues, immediately to the Technical Support and Safety Manager

D4.12.2 HOUSEKEEPING

Good housekeeping can greatly reduce the risk of fire and accidents. Everyone has a part to play in achieving and promoting tidy workplaces. The elements of good housekeeping are as follows:

- encouraging a 'see it, sort it' attitude;
- organising workspaces so that everything has a place;
- ensuring there is enough storage space for components, materials, chemicals, equipment etc. in daily use;
- arranging any workflows to avoid 'bottlenecks' in the work process;
- avoiding obstructions on floors;
- storing personal belongings in appropriate storage areas;
- organising a goods in (or out) system, so that deliveries will not obstruct where people walk;
- providing enough waste bins in convenient locations so that packaging, waste etc. can be disposed of straight away;
- avoiding cables or pipes being trailed across aisles or walkways or ensure these are secured and protected if unavoidable;
- marking out walkways to make it easier to see that they are being kept clear; and
- devising rotas and schedules to ensure daily, routine and non-routine tasks are planned and carried out e.g. washing of lab glassware, cleaning of fridge/freezer, fume cupboards, lab benches and lab stock taking etc.

If creating a temporary obstruction is unavoidable, e.g. for loading and unloading, you should have a system of warning people about the hazard, or ideally preventing access to the affected area.

D4.12.3 SLIPS, TRIPS AND FALLS

All areas within Physics must be kept free from hazards that would cause people to slip, trip or fall over. Such hazards might include, spillage of wet or dry substances, trailing cables, miscellaneous rubbish, unsuitable mats and poor lighting. The use of footwear with unsuitable sole material also increases the risk of accident.

If you become aware of any slip or trip hazard and can act to eliminate it, without harm to yourself or others, then you are at liberty to do so. Otherwise, report it immediately to a supervisor, line manager or other Departmental Safety Convenor who will instigate the appropriate remedial action.

University Guidance on Managing Workplace Environment Requirements Workplace Health, Safety & Welfare - A short guide for Managers (INDG 122 HSE).

D4.13 WORKPLACE TRANSPORT

Workplace transport refers to any vehicle that is used in a work setting, such as a forklift truck, tractor or mobile crane. It can also include cars, vans and large goods vehicles when these are operating off the public highway and loading or unloading on the public highway.

Every year, a significant number of people are killed by accidents involving vehicles in the workplace, and many more people are injured. Property and financial resources also suffer considerable damage. Good planning, training and awareness plus the appropriate use of vehicles, can avoid the potential for such accidents. Physics will ensure that:

- appropriate information is communicated to suppliers and hauliers about suitable delivery locations;
- the types of workplace routes and their layout are appropriate for the vehicles being used
- drivers receive appropriate training and supervision as necessary
- on-campus vehicle activities are managed so as to reduce risks, so far as is reasonably practicable

Workplace Transport Safety – An overview (INDG 199 HSE) University Local Rules for Management of Occupational Road Risk Standard

D5 GENERAL LABORATORY SAFETY

Laboratories are higher risk environments due to the fact that many other hazards such as chemicals, gases, biological materials, radiation sources laboratory equipment etc. can be present. If equipment, arrangements, procedures and operations are not well controlled in these areas, then this can increase the risk of accidents, incidents and dangerous occurrences happening.

The section covers some general lab aspects which may be applicable to many labs and includes:

- DSEAR
- General Lab Safety Rules
- Gas safety
- Nanotechnology
- Lab Access and Induction
- Permits to Work
- Personal Protective Equipment
- Risk Assessment

D5.1 DANGEROUS AND EXPLOSIVE ATMOSPHERES (DSEAR)

Dangerous substances are any substances used or present at work that could, if not properly controlled, cause harm to people as a result of a fire or explosion or corrosion of metal. They include such things as solvents, paints, varnishes, flammable gases, dusts from machining and sanding operations, dusts from foodstuffs, pressurised gases and substances corrosive to metal.

The Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) place duties on employers to protect people from risks to their safety from fires, explosions and similar events in the workplace.

Physics groups must work in conjunction with the University Safety and Estates colleagues Fire Safety Advisers to:

- find out what dangerous substances are in Physics and what the risks are;
- put control measures in place to either remove those risks or, where this is not possible, control them;
- put controls in place to reduce the effects of any incidents involving dangerous substances;
- prepare plans and procedures to deal with accidents, incidents and emergencies involving dangerous substances;
- make sure employees are properly informed about and trained to control or deal with the risks from the dangerous substances; and
- identify and classify areas of the workplace where explosive atmospheres may occur and avoid ignition sources (from unprotected equipment, for example) in those areas.

If a substance has been classified as explosive, oxidizing, extremely flammable, highly flammable, highly flammable or flammable or have the pictograms below then DSEAR is applicable. In addition, from 2015, DSEAR also now includes any gases that are under pressure (e.g. gas in a cylinder) which may present a risk of explosion if not correctly handled in the workplace and any substances that can corrode metals which could cause structural damage reducing integrity of structures if not suitably contained.



Where dangerous substances have been identified DSEAR requires that a risk assessment must be carried out. The DSEAR Assessment requires that the physical and chemical properties of the substance or preparation and the work involving the substance is assessed to identify if a dangerous substance can arise as the result of the work.

The risk assessment includes the following steps:

Assessment of the risks

• Substance properties, activities involved and ways in which the substance can harm people

Prevention or Control the risks

• Where it is not possible to eliminate the risk control or reduce the effects and spread of any fire or explosion, provide suitable personal protective equipment.

Controls Measures

- Reduce quantities, control and minimise release, use ventilation, avoid ignition sources.
- Experiments involving toxic gases or extremely volatile toxic substances must be carried out in suitably approved location.
- The work must be covered by a suitable COSHH Risk Assessment which must include a written scheme of work.
- Apparatus under vacuum must be shielded by protective screens and glass apparatus must also be encased in protective plastic netting.
- Hazardous operations conducted at increased pressure or *in vacuo* must be covered by suitable written schemes of work.
- Many organic solvents are readily ignited not only by flames but also by hot surfaces. Diethyl ether has a flash point of -45°C. Ethanol has a flash point of 10°C. Naked flames must be used with caution.
- Materials liable to spontaneous detonation (e.g. organic peroxides and peracids) must be handled behind protective screens and in small quantities only. The use of hot perchloric acid in fume hoods with metal ducting can lead to the build-up of explosive deposits. Solutions containing sodium azide as preservative must not be freeze-dried in equipment fitted with metal piping or powder dispensed with metal spatulas. Heavy metal azides are explosive.
- Fume hoods must be operated according to their efficiency rating and the instructions attached to the fume hood. They must be kept clean and tidy and not used for storage purposes.

Emergency Plans and Procedures

• Include any spillage procedures, emergency evacuation and firefighting.

D5.1.1 STORAGE

All highly flammable liquids (HFLs) must be stored in approved cabinets (fire rated) or a properly equipped solvent store.

HFLs must be stored separately from oxidising acids. No more than 50 litres of HFLs may be stored in any one laboratory. Only small volumes of HFLs should be left out on benches. Winchesters should be returned to approved cabinets after use.

HFLs or combustible materials must not be stored or used near sources of ignition, heat, or electricity, unless as part of a controlled procedure. **DO NOT STORE HFLs IN ANY AMOUNT IN NORMAL REFRIGERATORS**; only <u>spark-proof</u> fridges/freezers may be used for this purpose.

Flammable cabinets must be compliant with:

- D S E A R 2002
- HS(G)51, 1990
- Factory Inspectorate Certificate of Approval No1: Parts 3 & 4
- COSHH, help achieve ISO14001

D5.1.2 ZONE CLASSIFICATION

Where an explosive atmosphere may occur, groups must ensure such areas are classified into zones, based on the likelihood and persistence of any such atmosphere. Zoned work places will be classified as follows:

- Zone 0 A place in which an explosive atmosphere consisting of a mixture of air with dangerous substances in the form of gas, vapour or mist is present continuously or for long periods of time or frequently.
- Zone 1 A place in which an explosive atmosphere consisting of a mixture of air with dangerous substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally.
- **Zone 2** A place in which an explosive atmosphere consisting of a mixture of air with dangerous substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.
- **Zone 20** A place in which an explosive atmosphere in the form of a combustible dust in air is present continuously or for long periods of time or frequently.
- **Zone 21** A place in which an explosive atmosphere in the form of a combustible dust in air is likely to occur in normal operation occasionally.
- **Zone 22** A place in which an explosive atmosphere in the form of a combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.



Points of entry to zoned areas are marked with a specified "EX" sign (Triangular shaped, block capital lettering, black text on yellow background). Staff working in zoned areas must be provided with appropriate anti-static clothing. Before a zoned hazardous workplace is brought into use for the first time, departments must ensure that overall explosion safety is verified by a person who is competent in the field of explosion protection. All equipment should be checked that it's suitable before being used in zoned area.

Hazardous waste and solvent stores classified as zone 2 areas. Only authorised and trained staff are allowed access to the room. All risk assessments and SOP's must be read and signed and training given before access is

granted.

Anti-static clothing must be worn when entering the room. Storage of any new material should be authorised by suitable and appropriate personnel.

University Local Rule on Dangerous Substances and Explosive Atmospheres (DSEAR) University DSEAR Assessment Form S30 University DSEAR Aide Memoire for Completing Form S30 Dangerous Substances & Explosive Atmospheres Regulations 2002 (L138 HSE); HSE webpages on DSEAR

D5.2 EXPECTATIONS FOR SAFE RESEARCH

Research excellence and safety are inextricably intertwined. Safety is a core value in the University and an integral part of the responsible conduct of research. Everyone plays an important role in ensuring safety. The department expects all members of our research community to integrate safety into their research activities, to strive for excellence, and to go beyond minimum compliance. It is our expectation that every researcher will:

Expectations for Conducting Safe Research

PHYSICS - Expectations for Conducting Safe Research					
Demonstrate Commitment to Safety	Assess and Plan for Hazards and Risks	Implement Controls	Complete all Safety Training	Strive for Continuous Improvement	
Model safe lab practices.	Identify hazards and assess risks for all new experimental procedures and when procedures change.	Substitute less hazardous materials or smaller quantities whenever possible.	Complete all required safety training	Report safety concerns, near misses and incidents to your supervisor	
Adhere to laboratory safety rules.	Incorporate safety into lab SOPs and SSW.	Use appropriate engineering controls. (Fume hoods, biological safety cabinets, etc.)	Provide laboratory- specific training to all lab members.	Discuss lessons learned from incidents and near misses at lab meetings.	
Don't ignore co- worker's unsafe work practices.	Plan for emergencies.	Wear appropriate PPE.	Ensure that all lab members complete required training.	Complete the S1 Incident Reporting form for all accidents and incidents.	
Include safety at lab meetings.	Establish a procedure for prior approval for new hazardous materials or experimental procedures.	Select and provide appropriate PPE for lab members.	Maintain documentation of all training.	Establish a mechanism for lab members to report safety concerns, near misses and incidents	
Walk through your lab on a regular basis.	Establish a procedure for performing hazard assessments and writing SOPs/SSW.	Require lab members to wear PPE and enforce requirement.		Incorporate lab self- inspections.	
Enforce rules.	Establish a mechanism for review of SOPs/SSW				

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AC y		
Expectations		
Actions on researchers		
Actions for Principal Investigators		

- <u>Demonstrate a Commitment to Safety.</u> Lead by example, adhere to the rules and be willing to speak up if you see unsafe practices. Faculty, Heads of Departments, Principle Investigators and other supervisors / Line Managers are expected to put safety on the agenda and build it into the way their group works and thinks.
- Assess and Plan for Hazards and Risks. Take the time to systematically assess risks and plan for the hazards identified. Incorporate safety into laboratory standard operating procedures.
- <u>Implement Controls.</u> Take action to control your risks. Make sure you have the right protective equipment and that engineering controls are working correctly. Principal Investigators must enforce the established rules in their lab.
- <u>Complete Safety Training.</u> Ensure that new researchers have the knowledge and skill to safely perform their research activities. It is the responsibility of the Principal Investigator to ensure that researchers receive **research specific** safety training.
- <u>Strive for Continuous Improvement.</u> Research is not a static endeavour. Managing safety requires ongoing reassessment, feedback and reinforcement. Encourage reporting and resolve safety concerns. Involve all lab members when identifying and reviewing lessons learned after incidents and nearmisses.

Our SWR and Estates colleagues work closely with the department and offer a variety of services, tools and guidance to assist with meeting these expectations.

Our expectations and commitment to safe research is further exemplified by the 5-point plan within our expectations for conducting safe research table, which gives some examples of what we expect researchers and PIs to be doing to demonstrate their leadership and commitment to safe research.

5.2.1 GENERAL LAB SAFETY RULES

In laboratory areas you must:

- Behave in an acceptable standard at all times
- Be respectful of your colleagues.
- Tie long hair back.
- Store all personal items/outdoor clothing in a locker (if provided).
- Comply with good housekeeping and ensure work areas are kept clean and tidy.
- Remove unnecessary items.
- Keep access routes clear.
- Store items appropriately and never store heavy items at height.
- Never store food or drinks in the laboratories.
- Never eat, drink or apply cosmetics in the lab.
- Do not use mobile phones in the laboratory where they could be a potential distraction, nuisance, hazard or contamination risk.
- Avoid putting fingers, pens or other objects into the mouth which could be a contamination risk.
- Wear appropriate clothing in labs (i.e. appropriate footwear, open toes sandals and summer clothing may also not be suitable for some lab environments due to manual handling, chemical or contamination risks – check your local safety requirements).

- Wear suitable PPE (i.e. lab coats, safety glasses and gloves where appropriate)
- Ensure any specialised PPE is appropriately stored, maintained and serviced.
- Store your lab coat in the designated area(s).
- Ensure lab coats are laundered on a regular basis.
- Remove gloves and lab coats, and wash hands when leaving the laboratory area.
- Do not wear disposable gloves outside of lab areas or in corridors when transporting items. Physics has a 'no lab glove' policy when transporting materials in corridors.
- Ensure your samples/materials are suitably contained for transportation.
- Ensure only authorised personnel are permitted in the labs.
- No not let Estates or Contractors into the lab. Ask that they see the Technical Support and Safety Manager for access.
- Do not give out the laboratory door code.
- Ensure you receive appropriate training before using new equipment/techniques.
- Adhere to all safety instructions, COSHH and Risk assessments.
- Know where your nearest chemical and biological spill kits are located.
- Know the location of emergency eye wash stations and first aid boxes.
- Follow the correct waste disposal procedures for all waste streams and dispose of waste items regularly.
- Ensure all materials stored in laboratory fridges, freezers, incubators etc. are clearly labelled with material name; owner name; and date. This is particularly important in communal storage areas. **Do not use chemical abbreviations.**
- Ensure any hazardous materials, dangerous or heavy materials are transported safely in suitable and appropriate containers/carriers/trolleys etc.
- Ensure any broken skin, cuts or abrasions should be covered by a waterproof plaster prior to any manipulations whether wearing gloves or not.
- Never retrieve or transfer any materials by mouth pipette.
- Wash hands when exiting lab areas.
- Exit immediately when the continuous fire alarm sounds.
- Report all equipment faults.
- Report all accidents, incidents and spillages.
- Mobile phones, music devices and earphones should not be used in the laboratories where they could be a potential distraction, nuisance, hazard or contamination risk.
- No children or pets (except assistance dogs) are permitted in the laboratories at any time. **NOTE:** Exceptions to this are where permission has been granted for an organised event, which has been risk assessed e.g. school events or where young workers are in Physics through a school workplace.
- Ensure all personnel have been given a suitable and appropriate induction for the lab and that this has been recorded.
- Ensure all equipment is routinely checked and regularly maintained.
- Ensure the lab is routinely checked, kept clean, good housekeeping is followed etc.

D5.3 GAS SAFETY

Under health and safety law, all-natural gas appliances, pipework and flues within Physics need to be maintained

and checked annually by a competent person. This process is overseen by Estates Services, which holds a database of gas appliances throughout the University. Any work involving natural gas services, such as altering,

relocating or removing appliances should be arranged through Estates Services. Natural gas is supplied to many laboratories via a piped in system.

D5.3.1 COMPRESSED GAS SAFETY

The legal term for gas cylinders is 'transportable pressure receptacles'. Physics utilises a variety of compressed gases for research and operational purposes in laboratories and workshops.

The main hazards are:

- impact from the blast of a gas cylinder explosion or rapid release of compressed gas;
- impact from parts of gas cylinders that fail, or any flying debris;
- contact with the released gas or fluid (such as chlorine);
- fire resulting from the escape of flammable gases or fluids;
- impact from falling cylinders; and
- manual handling injuries.

The main causes of accidents are:

- inadequate training and supervision;
- poor installation;
- poor examination and maintenance;
- faulty equipment and / or design (e.g. badly fitted valves and regulators);
- poor handling;
- poor storage;
- inadequately ventilated working conditions;
- incorrect filling procedures;
- hidden damage.

All persons working with compressed gases are required to undergo training appropriate to the needs of their work, in order for them to work safely.

All gas cylinders must be examined at the appropriate intervals, by a competent inspection body, in accordance with relevant regulations, to make sure that they are safe for continued use.

It should be noted that some gas installations in Physics (e.g. TIC cleanroom) comprise of sophisticated control panels which incorporate various engineering control measures, such as shut-off valves interlocked with alarms. It is essential that these systems comply with the relevant British Compressed Gas Association (BCGA) codes of practice and that they are maintained in accordance with the standards advised by themanufacturer/vendor.

D5.3.2 GAS CYLINDERS - USE AND TRANSPORT

Nitrogen, argon and carbon dioxide gases are piped into some of the TIC laboratories. Gas detection alarm panels are in place in many areas to warn of potential hazards and some gas systems have safety cut out devices in the event of an emergency. Other gases such as helium and gas mixtures are only available as bottled gases.

Compressed gases in cylinders are stored at pressures as high as 3000 psi and are therefore potentially extremely hazardous. Individuals should also have received Manual handling training specific to awareness/moving/using

gas cylinders and personal protective equipment where determined by the relevant risk assessment must be worn.

The following notes are instructions for the use of compressed gas cylinders. They are not advisory; they are **mandatory**. Anyone found misusing gas cylinders will be excluded from the laboratories. Anyone regularly using compressed gas in cylinders must attend the University SWR gas training courses. All individuals who handle or use compressed gas cylinders must be suitably trained and have the skills to carry out the jobsafely.

- Users must know how to identify the contents of a cylinder. By law, suppliers must deliver properly labelled
 gas cylinders. If the label is missing or unclear and the contents cannot be identified, the cylinder must be
 marked "contents unknown" and returned to the supplier. The colour of a cylinder should never be used
 to identify its contents
- An example of a supplier's labelling is below.



* Multiple hazard diamonds may be applicable

- Cylinders should always be securely transported in a 3-wheel trolley.
- When not being moved, each cylinder must be secured against a wall, or bench, by an appropriate device at all times.
- A cylinder valve should never be opened without an appropriate pressure regulator valve fitted.
- Always open cylinder valves slowly. Check the head valves are closed first.
- Cylinder heads and valves must never be contaminated with traces of oil, grease or have PTFE tape used on them. These substances are known to cause explosions when used with pressurised gases.
- Regulators are not interchangeable and the correct type must be used for the correct gas and intended pressures(s).
- All regulators within Physics should be tagged before use and inspected annually during their working lifespan. Regulators that have not been tagged should not be used. PI's are responsible for ensuring that this is carried out.
- All gas cylinder regulators and manifolds are inspected and tested on a regular basis by a qualified person.

- Regulator "heads" must never be over tightened.
- Regulators must always be removed from cylinders before they are transported.
- Never test the seal with a flame for a leakage; always use an appropriate leak detection spray when testing valve sockets for leakage. Should a leakage be found around a spindle when the valve is open, screw down the hexagonal gland nut. If this does not correct the leakage, the cylinder should not be used.
- Always fit a trap between the cylinder and the apparatus when the gas is soluble in the reaction medium.
- On no account must any cylinders be vented except under controlled conditions by qualified personnel.
- Cylinders of acetylene should only use valves with flame arresters to prevent blowback, and copper tubing must not be used. These should always be used in the upright position and must be in a laboratory next to an outside wall. Flammable gases must always vent from the equipment into a fume cupboard, never into the lab. NOTE: there are very specific requirements for the use of flammable gases.
- Cylinders should always be closed at the cylinder valve, not just at the regulator when not in use or when transporting.
- **DO NOT** store spare cylinders in the laboratory.
- All gas cylinders and liquid nitrogen vessels **must be** transported unaccompanied using the lifts. In the TIC building use the goods lift for transporting cylinders and vessels.
- **DO NOT** use any cylinder, which you know or suspect to be defective in any way. Report it immediately.
- **NEVER** use any compressed gas for any purpose other than that for which it is supplied. Oxygen must not be used in place of compressed air for any purpose. When working in confined spaces ensure thorough ventilation with AIR never oxygen.

University Guidance on Compressed Gas Safety Handle Gas Cylinders Safely (TIS No.12:2005) (BCGA) plus other Technical Information Sheets BCGA Code of practice 44 – The Storage of Gas Cylinders 2016 Safety of Pressure Systems (L122 HSE); Written Schemes of Examination (INDG178 HSE).

- Attend the University gas safety training courses if a user of gas cylinders.
- Any research group or area with pressure equipment are required to ensure that the equipment is registered with the University insurer and that it is regularly checked and inspected according to legal requirements. Contact the Technical Support and Safety Manager to get equipment registered.
- Ensure that gas regulators are tagged prior to first use and thereafter checked annually and replaced when appropriate.
- All compressed gas cylinders require a DSEAR assessment.

D5.3.3 GAS DETECTION SYSTEM

Many laboratories using particular gases (and in some cases, solvents) have gas detection sensors installed as part of the safety control measures for the location. Activation of the sensors will result in a warning flashing light and sounder activating for the area. All personnel working in these locations must be aware of what action to take in the event of an alarm sounding. This will include evacuating the lab immediately, checking and resetting (if possible) the gas detection panel and reporting the incident accordingly. Details of this should be include within a local lab induction.



• Ensure all personnel are trained and familiar with the gas sensors and detection systems in their area and what to do in an emergency.

D5.4 NANOTECHNOLOGY

Nanotechnology and nanoscience involve the creation and manipulation of materials at the sub-micron level to create products that exploit novel properties. The most likely hazards from nanopowders and nanofibres are toxic effects, particle effects and fire or explosion. For most particulate materials that can become airborne, particularly those that are poorly soluble, the primary health concern is for effects on the lungs, through inhalation. Other routes of entry into the human body systems include skin contact and ingestion.

To date, there is considerable uncertainty about the actual health effects of nanomaterials, since published information is very limited. Thus, the University's policy is to ensure that, in each case, a suitable and sufficient COSHH risk assessment is carried out and then to determine a range of stringent measures to control the risk of exposure. Those involved are also advised to contact SWR for current advice on the subject.

University Local Rules for the Safe Use of Nanomaterials HSE - Using Nanomaterials at Work (HSG272) at Work

- Please consult COSHH, DSEAR and REACH requirements in relation to work with nanomaterials.
- All users of nanomaterials must complete an S29(see SWR website) Record of Personal Work Activity

D5.5 LABORATORY ACCESS & INDUCTION

Only authorised and trained personnel should be permitted access to laboratories. All personnel must be given a local safety induction for laboratories to ensure they are aware of the hazards present and the control measures in place. On occasions visitors and others may be required to enter these locations, but access must be controlled and managed by suitable and appropriate means such as through escorted visits, safety inductions, permit to work controls, risk assessment etc.

D5.5.1 PERMITS-TO-WORK

A permit-to-work is a procedure generally used to manage and control work, including work which may be hazardous, for example, work on fume cupboard ductwork/extract systems and access to roofs. It helps ensure that hazardous work is safely planned, organised, controlled and monitored. Permits-to-work apply to Estates Services and all external contractor work and may be general permits or hazardous and can be arranged through

the Technical Support and Safety Manager.

Each element of the permit-controlled work aims to ensure suitable and appropriate control of risks and exchange of relevant information. For further details see the University Local Rule and Guidance documents on Engaging External Service Providers in Section D.3.3.

D5.6 PERSONAL PROTECTIVE EQUIPMENT (PPE)

In deciding what measures are needed to control exposure, personal protective equipment (PPE) should only be used so far as is reasonably practicable after all other control measures have been taken.

PPE means all equipment (including clothing affording protection against the weather) which is intended to be worn or held by a person at work and which protects them against one or more risks to their health or safety, and any addition or accessory designed to meet that objective.

All PI's must ensure that suitable PPE is provided to employees and students who may be exposed to a risk to their health or safety while at work, <u>except</u> where and to the extent that such risk has been adequately controlled by other means which are equally or more effective. PPE will therefore be regarded as a measure of 'last resort' for controlling exposure to risk.

Where PPE is a viable option, the characteristics which the PPE must have in order to combat the risks in question (including any posed by the type selected) will be determined through the general or a specific risk assessment process (e.g. COSHH) and compared with PPE available on the market. PI's must ensure that any PPE provided will be maintained (including replaced as appropriate) in an efficient state, in efficient working order and in good repair.

Those who use PPE have a responsibility to do so according to manufacturer's instructions, or specific training (where more complex forms of PPE are involved), in addition to cleaning and taking care of it. Any defect should be reported without delay to a line manager.

- Laboratory coats must be worn when working in areas where they have been identified as a risk control measure. This will generally include laboratories with chemical, biological or radiological hazards as well as workshops or specialist facilities e.g. clean rooms. "Howie" type coats (high neck, elasticated cuffs and preferably double breasted) should be worn, especially for biological type work and all coats should be fastened and laundered frequently.
- Face shields must be worn if there is any danger of injury to the eyes or face, e.g. when opening sealed glass tubes, working glass in a hot flame, handling liquid nitrogen, handling acids, alkalis or other corrosive materials in solid or liquid form. Full face shields are required for use with ultraviolet lamps.
- Safety glasses must be worn when working in mandatory areas (e.g. laser labs, chemical and biological labs), as well as any other areas if specified by the risk assessment. Contact lenses do not provide protection and additional protection is essential when there is danger of explosion or violent reaction with splashing of liquids. The University is required to supply toughened prescription lenses to all those who do not already have them and who spend a high proportion of time in high risk areas such as research laboratories. If a risk assessment indicates that the wearing of contact lenses in a lab is unsafe, then either over glasses or prescription safety spectacles must be worn. The University has a procedure in place for the purchase of Prescription eyewear. Contact your PI, line manager or the Department Safety Convenor. Your group will be

required to meet this cost of this.

- Safety Footwear must be worn when identified in a risk assessment.
- **Gloves** must be worn when directed to by the risk assessment. Care must be taken to ensure the correct type of glove is selected and used for the activity and substances being used. Physics has a 'no lab glove' policy when transporting materials in corridors.

D5.6.1 USE OF DISPOSABLE GLOVES

- Cuts/lesions should be covered with waterproof dressings before putting on gloves.
- Some hazardous substances, e.g. solvents, remove the natural oils from the skin so that frequent or prolonged contact may cause dermatitis or more serious skin disorders. When such skin contact is likely to occur, laboratory workers should be provided with suitable gloves and dispose of them when they become contaminated, i.e. before the solvent is likely to 'break through' the glove material.
- Gloves are often used to provide protection against skin contact with hazardous substances. There are 3 main issues which have to be considered when choosing and using gloves as a control measure; permeation, penetration and degradation.
- Gloves should be removed before handling items likely to be used by others, e.g. telephones, computer equipment, door handles to prevent the risk of contamination occurring.
- Computer equipment in labs are on the increase in terms of being intrinsic to the running of certain pieces of laboratory equipment and therefore may have been touched by potentially contaminated gloves/hands. Consideration has to be given to how this will be managed in order to reduce the potential for this contamination for example, use of a keyboard cover which could be more easily decontaminated.
- Suitable gloves should always be worn during decontamination procedures.
- Transfer of contamination from the outside of protective gloves to the inside is common. Users should be instructed in the correct method of removing and refitting gloves (i.e. aseptically).
- Gloves should be discarded appropriately to waste receptacles.
- Gloves should not be worn in corridors outside of the laboratory, even when transporting materials between lab areas. Physics has a 'no lab glove' policy when transporting materials between lab areas.
- In considering the type of glove to be worn you must also consider such aspects as latex allergy and how this will be managed (note the use of latex is discouraged). As with any control of risk the best mechanism is to eliminate it. It is the policy of Physics that disposable nitrile gloves are used as opposed to latex in an attempt to reduce allergy development to the latex. If any worker or laboratory strongly feels the need to use latex gloves, a specific risk assessment must be in place and all workers in that area must be aware of this.
- A high standard of personal hygiene should be in place and hands should be washed when leaving a laboratory area.

University Local Rules on Personal Protective Equipment The Personal Protective Equipment at Work Regulations 1992 (L25 HSE);

- Where PPE has been identified as part of a risk assessment, the department must provide this.
- Users are responsible for wearing, maintaining and storing PPE appropriately.
- Lab coats are compulsory to many lab areas within Physics.
- Lab coats and safety glasses are compulsory within all wet science areas and/or if identified in risk assessment for other areas.
- "Howie" style lab coats are required for all wet labs.
- Laundering of lab coats is managed by the groups.
- Physics operates a "no lab glove" policy when transporting materials between labs.

- Open-toe shoes and sandals should not be worn in laboratories.
- Protective laboratory clothing should not be worn outside the laboratory, for example in rest areas, staff rooms, offices, tea/coffee areas, libraries and toilets.
- PPE should not be stored in lockers, cupboards, or on the same coat hooks or stands as personal clothing.
- Refrain from using latex gloves unless absolutely necessary choose a suitable alternative
- Do not wear gloves if there is a possibility of cross-contamination occurring e.g. if you need to use cupboard or door handles, telephones, keyboards etc.

D5.6.2 RESPIRATORY

Respiratory protective equipment (RPE) is a particular type of PPE designed to protect the wearer against inhalation of hazardous substances in the workplace air. Examples include respirators (filtering devices) and breathing apparatus.

With reference to RPE, COSHH assessors will specify suitable equipment to be worn to adequately control the inhalation exposure using, as a guide, the equipment's assigned protection factor. Furthermore, it will be ensured that fit testing of face pieces is carried out so that equipment fits correctly and is matched to wearers. An inadequate fit will significantly reduce the protection provided to the wearer and can create inward leakages of airborne contaminants e.g. particulate material, organic or acid vapours.

Respiratory protective equipment at work: (HSG53 HSE). Fit testing basics - HSE Website; Guidance on RPE Fitting (HSE, INDG479)

- TIC has a number of Self-Contained Breathing Apparatus (SCBA) and identified individuals have been trained in the use of these. The use of these is only for dealing with specific events and issues that can be risk assessed. Physics does not offer an Emergency Response Team.
- Contact your PI or the Departmental Safety Convenor for advice and/or to arrange face fit testing.

D5.6.3 PERSONAL CONTAMINATION

Splashing of eyes with any irritant liquid must always be taken seriously, and prolonged irrigation should be carried out until medical attention is available (eyewash facilities are available in many laboratories). If contact lenses are worn, they must be removed. Drenching with water and **immediate** removal of contaminated clothing are the first essential steps when skin and/or clothing have been splashed by corrosive chemicals or a substance that is toxic by skin adsorption. If the substance splashed on the skin is insoluble in water, it will be removed more effectively by washing with soap and water. A First Aider (Ext.2222) should be called immediately to help.

D5.6.4 DECONTAMINATION OF LABCOATS

Heavily soiled or biologically contaminated lab coats can be dealt with as follows:

- The contaminated area should be soaked with an effective disinfectant, such as 10% Virkon, or hypochlorite (10,000 ppm available Cl).
- It should then be transferred to an autoclave bag, which should be loosely sealed and then autoclaved. This will be carried out at 121°C for 15 min. Please note that autoclaving may cause some materials to shrink.
- Coats can then be laundered as normal.

- Laboratory coats contaminated by hazardous chemicals can be treated in some cases but this will depend on what the chemical is.
- If the lab coat cannot be treated, then it should be disposed via the hazardous waste route.

D5.6.5 LAB COAT LAUNDRY PROCEDURE

Before any lab coat can be sent away to be laundered, it must be clearly identified with the person's name and lab location number. This can be done by using a permanent marker pen and writing these details on the underside of the collar and on the inner coat lapel.

Dirty lab coats should be placed inside a clear plastic bag and taken to the Electrical Workshop JA501. **Note** contaminated coats should be treated first before being sent off for laundering. The Hazardous Waste Co-ordinator will send the coats off for laundry and notify/deliver them once they have been cleaned and returned. There will be a charge for this service.

D5.7 RISK ASSESSMENT

It is a legal requirement to carry out an assessment of the risks to the health and safety of employees to which they are exposed whilst they are at work. In practice, this will usually mean responsible and competent persons carrying out risk assessments for different work/study activities or work situations.

D5.7.1 OVERVIEW OF THE RISK ASSESSMENT PROCESS

A risk assessment is a careful examination of what, in the workplace, could cause harm to people, so that managers and supervisors can weigh up whether they have taken enough precautions or should put in place additional sensible measures to control the risks and prevent harm. Where additional risk control measures are required, it must be ensured that these are appropriately implemented, the associated risks re-evaluated and recorded. Those directly affected by a particular risk assessment should be given a copy of the significant findings of the assessment (or a safe system of work which has been informed by those significant findings) by the manager in charge, for their perusal and signature.

Others, who could be indirectly affected, may need to be provided with relevant information from the risk assessment.

There are essentially five steps to risk assessment:

- Step 1: Identify the hazards
- Step 2: Decide who might be harmed and how
- Step 3: Evaluate the risks and decide on further precautions
- Step 4: Record your findings and implement them
- Step 5: Review your assessment and update if necessary

When thinking about risk assessment, remember:

- A **hazard** is anything that has the potential to cause harm, such as biological agents, chemicals, electricity, using hazardous equipment, working from ladders, lasers, an open drawer etc.;
- The **risk** is the chance (or likelihood), high, medium or low, that somebody could be harmed by the identified hazards, together with an indication of how serious the harm could be. Trivial risks, for example those associated with life in general can be ignored.

The process should not be overcomplicated. The law does not expect employers to eliminate all risk, but they are required to protect people 'so far as is reasonably practicable'. In many cases, the risks are well known and the necessary control measures are easy to apply.

Managers and supervisors should already be aware of what hazards are associated with the typical work

activities in their areas. They must ensure that they have taken reasonable precautions to avoid injury.

Only the significant findings of the assessment need to be recorded, along with the actions that are required to be put in place to control any unacceptable risk. It must then be ensured that these further actions are appropriately implemented and a revised evaluation recorded. A copy of the risk assessment, signed by the person undertaking it. All risk assessments should be easy to locate in the event of an emergency or if requested.

- All users should be aware of and have acknowledged any risk assessments relevant to them.
- Ensure any others that may be affected have also been made aware of the risk assessment where/if applicable (e.g. maintenance, cleaning staff or external contractors).
- The most up to date risk assessments should be readily and easily available.
- All risk assessments should be on the eRisk system and a copy saved on the safety `I` drive.

D5.7.2 SPECIFIC RISK ASSESSMENTS

Where work involves any of the items below, then specific risk assessments, under separate legislation (as indicated in brackets) need to be undertaken by personnel with an appropriate level of competence:

- Work involving substances hazardous to health (COSHH assessment)
- Manual handling activities (Manual Handling Operations assessment)
- Use of display screen equipment (Display Screen Equipment assessment)
- Work involving dangerous substances and/or explosive atmospheres (DSEAR assessment)
- Work involving ionising radiations (Radiation risk assessment)
- Exposure to noise (Control of Noise at Work assessment)
- Exposure to lead (Control of Lead at Work assessment)
 - All users should be aware of and have acknowledged any specific risk assessments relevant to them.
 - Ensure any others that may be affected have also been made aware of the risk assessment where/if applicable (e.g. maintenance, cleaning staff or external contractors).
 - The most up to date risk assessments should be readily and easily available.
 - All risk assessments should be on the eRisk system and a copy saved on the safety 'I' drive.

D5.7.3 COMPETENCE TO UNDERTAKE RISK ASSESSMENT

It is important that those who undertake risk assessment have a level of competence commensurate with the significance of the risks they are assessing and specific training is provided by SWR for this. Please contact your Line Manager or the Departmental Safety Convenor should you wish to discuss any training needs for this.

The eRisk Assessment Form provides a structured approach for carrying out a risk assessment, implementing its findings and recording the recipients of the assessment. Risk Assessments should be only be completed by trained assessors.

Research work will only be permitted when a suitable and sufficient risk assessment has been completed and approved by the Principal Investigator/Line Manager in charge of the particular project/work or other suitable and competent person.

Please Note: Since the risk assessment process is key to effectively managing health and safety risks, most occupants in Physics, will be required to undertake training in the techniques of risk assessment.

• Physics researchers and supervisors should have completed risk assessment training. This course can be booked online.

D5.7.4 ADMINISTERING RISK ASSESSMENTS

The significant findings of risk assessments, or their corresponding safe system of work, must be readily available to all staff and students who need to work to the precautions they emphasise.

The most up-to-date copy of all risk assessments should be readily available and easy to access by all members. Line Managers should ensure that a mechanism is in place to ensure users are aware of any risk assessments that are applicable to them. In many cases, labs may also wish to keep a hard copy of risk assessments in a folder in the lab area too.

All risk assessments must be kept for 5 years from the elimination of significant risks, or review/updating of the assessment. However, in the case of assessments relating to health issues, such as COSHH or Noise assessments, these will be kept for 40 years after the project or work has terminated. Assessments that are no longer relevant or have been updated should be archive stored or destroyed if no longer required. If in any doubt contact the Departmental Safety Convenor or <u>SWR</u> for advice.

Five Steps to Risk Assessment (L163 HSE); Control of Substances Hazardous to Health (L5 HSE); Manual Handling Operations Regulations 1992 (L23 HSE); Health and Safety (Display Screen Equipment) Regulations 1992 (L26 HSE); Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) 2002 (L138 HSE); Ionising Radiations Regulations 2017 (L121 HSE); See <u>Section B4</u> also in relation to Data Protection and Document retention periods.

- Ensure staff/students are aware of any risk assessments that are applicable to their work and that they adhere to these and have acknowledged the ones that are applicable to them.
- Ensure that the most up-to-date risk assessments are easily and readily available to users.
- Ensure all risk assessments are retained/archived for the required period of time or destroyed when the required retainment period has expired.
- No new or increasing risks or hazards should be introduced into Physics before they have been approved. This includes research proposals, equipment, new organisms, hazardous chemicals and their storage.

D5.8 SHARED FACILITIES'

Where staff or students of Physics are required to work in a hazardous area of another departmental area, then the originator of the activity will liaise with the responsible person (normally the identified Safety Co-ordinator) in that area as to be satisfied that adequate measures are in place to ensure the health, safety and welfare of those involved and appropriate training, information and supervision is in place.

D5.8.1 AUTOCLAVE

The TIC autoclave facility (TC405) is located on Level 4. The autoclave is available for sterilization and waste treatment purposes. Waste disposal bins are available in the room. Access and training is through departmental 'approvers' and TIC. The management and maintenance of the facility is overseen by TIC support operational staff.

D5.8.2 CLEANROOM

The TIC cleanroom facility (TC707) is located on Level 7.

This is an industry-standard cleanroom suite. It comprises fabrication and test equipment for manufacture of micro-scale optoelectronic and photonic devices. All of this equipment is available for external access on a

hands-on or serviced basis. The facility is managed by the Institute of Photonics (Physics Dept.). SCAPA have also a cleanroom in the John Anderson extension, JA217 which services the 350TW Thales laser facility.

D5.9 TECHNICAL SUPPORT FACILITIES

D5.9.1 ELECTRICAL AND ELECTRONICS WORKSHOP

The Physics electrical workshop facility (JA503) is located on Level 5.

Access and training are through the Workshop Supervisor. All personnel using the facility must be competent, trained and have signed off applicable risk assessment(s) for the activities being undertaken. The general management and maintenance of this facility is monitored by the Departmental Safety Convenor.

• For access or information on any of the technical support facilities please contact Dr David McKee.

D5.9.2 MECHANICAL WORKSHOP

The Mechanical Workshop facility (JA110) is located on level 1.

Access and training are through the Workshop Supervisor. All personnel using the facility must be competent, trained and have signed off applicable risk assessment(s) for the activities being undertaken. The general management and maintenance of this facility is monitored by Departmental Safety Convenor.

• For access or information on any of the technical support facilities please contact Dr David McKee.

D6 GENERAL LAB EQUIPMENT AND PROCEDURES

D6.1 EQUIPMENT

Work equipment means any machinery, appliance, apparatus, tool or installation for use at work (whether exclusively or not); and "use" in relation to work equipment means any activity involving work equipment and includes starting, stopping, programming, setting, transporting, repairing, modifying, maintaining, servicing and cleaning.

The hazards from work equipment are as many and varied as there are different pieces of equipment. However, some of the most obvious hazards include moving/rotating parts, sharp edges, hot surfaces, lack of or poorly laid out controls, energy sources (e.g. electricity, high pressure fluids) and instability.

Physics has a range of work equipment in office, lab and common areas that may be used by a variety of staff and students, once they have been given appropriate permission and instruction, where necessary.

All work equipment provided in laboratories and workshops must **only** be used by trained and authorised personnel, or by others under supervision by an authorised member of staff. It may be possible to use some equipment in laboratories or workshops by obtaining the permission of the PI, Laboratory/Workshop Supervisor, providing individuals have received appropriate training and can demonstrate competence in using the particular equipment. At no time should any University equipment be permitted to be used by a Service **Provider or Contractor.**

The Provision and Use of Work Equipment Regulations (PUWER) apply to all work equipment. It places duties on Physics, Pl's and Industry Partners to provide suitable work equipment for the particular work activities; information, instructions and training to those who use it; specific measures concerning dangerous parts of machinery, controls and control systems and to ensure its stability and mobility.

Where a Principal Investigator is responsible for a research laboratory or workshop, then they must be familiar with PUWER and ensure these duties are complied with in relation to the work equipment under their control.

At the end of each working day, all staff and students should co-operate in closing doors, switching off lights and equipment and accessible power supply sockets in their own work area, where it is reasonable to do so without loss of necessary services.

D6.1.1 HIGH TEMPERATURE EQUIPMENT

Work equipment such as ovens, furnaces, soldering irons and hotplates can present a high risk of fire. The University Fire Safety Adviser (UFSA) has established an asset register of such equipment to assist the University maintain a suitable and consistent standard of management and control of these items. Current equipment should now be included on this register. For any news high temperature equipment, Request Form F11 should be completed and sent to the Departmental Safety Convenor prior to purchase or use any new equipment. If in doubt, contact the UFSA for advice.

D6.1.2 REDUNDANT EQUIPMENT (INCL. DECOMMISSIONING AND DISPOSAL)

Any work equipment that is identified as being redundant, or surplus to requirements, could be hazardous due to its construction (e.g. use of asbestos containing materials), its consumables (e.g. fluids, gases, oils), existing contamination with hazardous substances (e.g. acids, alkalis, biological materials) or its state of disrepair (e.g. exposed sharp edges) and must be decommissioned and disposed of in a safe manner.

This process will be determined by a specific risk assessment and associated safe system of work and in accordance with any statutory duties on waste disposal. For example, the consumables within the equipment may constitute hazardous waste, so should be dealt with accordingly. It will be for the person responsible for the equipment (e.g. Principle Investigator, Researcher, Section Leader, Laboratory Manager etc.) to ensure that any statutory duties are complied with, that necessary documentation is written and that all practical arrangements are planned and undertaken by competent persons.

The University's Portering Service (Estates Services), can be used for the transfer, removal and/or disposal of equipment. There is a cost associated with this service. Where heavy furniture/equipment etc. are to be relocated, then relevant information on the loads must be provided in advance and where appropriate, items properly packed/emptied for the transfer.

Details of redundant equipment must be report to the Technical Support and Safety Manager who will check it against the university asset register and will update the register accordingly.

Advice on the disposal of all types of waste is available from Estates Services.

Safe Use of Work Equipment (L22 HSE);

D6.1.3 RUNNING OUT OF HOURS / UNATTENDED

All laboratory and workshop apparatus including services such as, water, gas and electricity, should normally be turned off out with normal working hours. When it is essential that apparatus remain in operation beyond normal working hours, then it must be made as safe as is reasonably practicable to prevent leaks, spillages, flooding etc. be completed for the purpose of outlining the actions to take in the event of an emergency. This is for the benefit of Security staff and/or the emergency services, should they be required to attend an incident.

The S19 now on SharePoint, is not to be used for equipment which is intended to run continuously, such as:

- Refrigerators/freezers
- Fume cupboards with vented cabinets
- Air conditioning units

The S19 should be used for equipment or experiments that is hazardous or may present a safety risk if turned off, such as:

- Lasers
- Vacuum pumps
- Sensitive analytical equipment

The S19 is not designed as an alerting system in the event an item of equipment should fail. Departments must determine their priority (business critical) equipment and must arrange to have dedicated alerting mechanisms connected to the equipment so their staff are promptly alerted, allowing them to respond accordingly.

Researchers are responsible for completing and submitting eS19 forms (SharePoint) for relevant equipment that is left running out of hours or unattended, which may be hazardous or present a safety risk of turned off.
D6.1.4 SERVICING, MAINTENANCE & REPAIRS

If a fault is suspected or discovered in a piece of equipment, then the following procedure should be adopted:

- remove the equipment from use immediately to a secure place, or isolate it from the mains if physical removal is not possible;
- label it clearly and securely 'Do Not Use';
- report the matter to a line-manager and/or
- arrange for a competent person to examine it and report their findings.

D6.2 FRIDGES AND FREEZERS

Laboratory refrigerators are for the storage of research materials only and must **not** be used for the storage of food or drink intended for human consumption. All laboratory refrigerators must be spark proof and labelled as such. Unless a refrigerator is labelled as flame or spark proof it must not be used for the storage of flammable or explosive substances.

D6.3 "HOT WORK" ACTIVITIES

Hot work is any process that generates flames, sparks or heat, for example, welding, cutting, grinding and power sawing. These processes can act as unintentional sources of ignition for combustible or flammable materials, leading to serious fires or explosions.

Safer options should always be considered such as, cold cutting or cold repair techniques and replacing items rather than repairing. Necessary hot work should only be carried out by those who have received appropriate training, and if required, must be supervised by an experienced manager or supervisor who has knowledge of the particular work, the risks involved and the precautions to be taken. All relevant safe systems of work should be adhered to.

Where it is anticipated that a hot work process, whether undertaken by students, staff, contractors or service providers could affect a building's fire detection system, then the Technical Support and Safety Manager must be informed. The Technical Support and Safety Manager will then initiate arrangements with the UFSA and/or Estates Services (in the case of in-house activities) to authorise appropriate action to ensure the integrity of the fire detection system and prevent false alarms and arrange a permit to work.

D6.4 LIFTING EQUIPMENT AND LIFTING OPERATIONS

Lifting equipment means work equipment for lifting or lowering loads (e.g. fork lift trucks, bottle jacks, trolley jacks, vehicle hoists, tail lifts) and includes its attachments used for anchoring, fixing or supporting it (e.g. runway of an overhead travelling crane).

An *accessory for lifting* means work equipment for attaching loads to machinery for lifting e.g. slings, chains, eyebolts etc. A *lifting operation* means an operation concerned with the lifting or lowering of a load, using lifting equipment.

The main hazard from the use of lifting equipment is the potential for a load to fall and cause injury by virtue of height lifted, weight, nature, size and position in relation to people.

The current Provision and Use of Work Equipment Regulations (PUWER) apply to all work equipment, including lifting equipment. In addition, the current Lifting Operations and Lifting Equipment Regulations (LOLER), place duties on the University and its user groups with regard to selecting, positioning, installing, operating and inspecting lifting equipment and are designed to reduce the risks to people's health and safety from lifting equipment provided for use at work. The following measures should be adhered to:

- selecting equipment appropriate for the intended purpose;
- positioning and installing equipment to minimise any risks;
- safely using equipment by having lifts planned, organised and performed by competent people;
- subjecting equipment to ongoing examination and inspection by competent people;

Safe Use of Work Equipment (L22 HSE); Providing and Using Work Equipment – A Brief Guide (HSE, INDG291) Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

Any research group or area with lifting equipment, including cranes, lifting tackle etc. are required to ensure that the equipment is registered with the University insurer through the Technical Support and Safety Manager and that it is regularly checked and inspected according to legal requirements.

D6.5 LOCAL EXHAUST VENTILATION (LEV)

Physics utilises a number of local exhaust ventilation (LEV) systems, which are designed to remove airborne contaminants to prevent people breathing them in and causing harm to their health. LEV is installed based on the outcome of a COSHH assessment and should be used as instructed. With regard to LEV systems Physics and Estates are committed to the following:

- ensuring that each is maintained in an efficient state, in efficient working order, in good repair and in a clean condition;
- ensuring that each is thoroughly examined and tested by a competent person, at least once every year, or as legal requirements dictate (14 months);
- ensuring that each is safe to work on by maintenance personnel;
- providing necessary training to personnel.







LEV 'arm'

Fume Cupboard

Microbiological Safety Cabinet

University Local Rule: Installation and Use of Local Exhaust Ventilation (LEV)

The Technical Support and Safety Manager will co-ordinate the scheduling of statutory testing of equipment and ensure that records of such tests are maintained and readily available.

D6.5.1 FUME CUPBOARDS

Fume cupboards must be used where identified in an appropriate COSHH risk assessment. A fume cupboard is only a partial enclosure and cannot provide absolute protection against the inhalation of substances used within it. In addition, the degree of protection given to the user is highly dependent on other factors, such as the experimental procedures and material involved.

For highly toxic substances an assessment may indicate that the likely protection to be afforded to the user by the fume cupboard is inadequate. In such cases, the work should not be done in a fume cupboard and a complete enclosure such as that provided by a glove box will be more appropriate.

When using apparatus presenting minor explosion or implosion hazards, make use of a fume cupboard as these have toughened glass windows. After completing operations during which noxious vapours or fumes may have been released, leave the fume cupboard windows pulled down. Should noxious fumes escape into the lab, they may be a requirement to evacuate the area. Fume cupboards should also be used for decanting dangerous chemicals.

Training should be given prior to use of the fume cupboard. Manuals for the operation of operation of fume cupboards should be available from the lab manager.

Fume cupboards are checked annually by Estates Services. The paperwork indicating the results of these checks are attached to the fume cupboard.

- Report any obvious defect or fault immediately to the Technical Support and Safety Manager.
- If the performance of the fume cupboard is in doubt **do not** use it and report it immediately.
- Ensure you have been properly trained on how to use the fume cupboard.

D6.5.2 MICROBIOLOGICAL SAFETY CABINETS

A microbiological safety cabinet (MSC) is defined as a 'ventilated enclosure intended to offer protection to the user and the environment from the aerosols arising from the handling of potentially hazardous and hazardous micro-organisms, with air discharged to the atmosphere being filtered.' (See section D.8 - Biological Safety). It is essentially an engineering control measure, as provided for under COSHH, to prevent persons being exposed to biological agents or biologically-contaminated materials. Class 2 microbiological safety cabinets protect both worker and experiment from each other by suitable airflow, and should be used for work with human tissues, primary cultures, the isolation of cells from tissues and containment level 2 work involving GMOs and/or human pathogens.

Regular maintenance of MSCs is essential if they are to work safely and efficiently. All MSCs are subject to ongoing service/maintenance and should normally be serviced at least once per year, however additional service visits may be required dependent upon the frequency and type of work involved.

The Technical Support and Safety Manager will liaise with the University's current provider of MSC services to arrange specific service and test regimes depending on the nature and frequency of their use. MSC's should only be used by those who have received appropriate training from a competent person.

Users and those responsible should be vigilant as to the effectiveness of engineering control measures; any suspicion of fault or ineffectiveness should be reported immediately to a line manager, the Technical Support and Safety Manager.

MSCs are checked annually by an external LEV Engineer and Estates Services. The paperwork indicating the results of these checks are attached to the MSC.

University Local Rules for Control of Substances Hazardous to Healthy (COSHH) See - University Local Rules For the Safe Use of Microbiological Safety Cabinets Control of Substances Hazardous to Health (L5 HSE);

- All Microbiological Safety Cabinets used for either Genetic Modification procedures (containment level and 2 and above), human and animal tissue handling and any other Biohazardous uses, **MUST** be rendered sterile using the appropriate sterilisation technique **BEFORE** a Service Engineer carries out any maintenance work.
- Laminar-flow cabinets are not safety cabinets; they protect the experiment rather than the operator and **must never be used in work with biohazards**.
- Ensure you have been properly trained on how to use the MSC.

D6.5.3 OTHER EXTRACT VENTILATIONS

Some other LEV and extract systems, such as LEV 'extract arms' and general extract vents are used in operation in Physics. These are mainly used for lower hazard work or general extract purposes and are regularly checked and maintained accordingly.

D6.6 NOISE AT WORK

Employees who are exposed to loud noise at work, for prolonged periods, may be at risk of damaging them hearing. The aim of the Control of Noise at Work Noise Regulations (CNAWR) is to ensure that workers' hearing is protected from excessive noise at their place of work and requires the department to prevent or reduce risks to health and safety from noise. To this Physics will, where necessary, work in conjunction with SWR and the Occupational Health Service and is committed to:

- assessing the risks to employees from noise at work, through SWR;
- acting to reduce the noise exposure that produces those risks;
- providing employees with hearing protection if noise exposure cannot be reduced enough by using other methods;
- ensuring the legal limits on noise exposure are not exceeded;
- providing employees with information, instruction and training;
- arranging hearing surveillance, through the Occupational Health Service, where there is a risk to hearing.

Where hearing protection is provided for particular individuals, it is required they wear it according to information and instructions given.

University Occupational Health and Safety Standard

D6.7 PRESSURE SYSTEMS

A **pressure system** is defined as:

- a system comprising one or more pressure vessels of rigid construction, any associated pipework and protective devices;
- pipework with its protective devices (including to which a transportable pressure receptacle is, or is intended to be connected),
- a pipeline with its protective devices which contains or is liable to contain a relevant fluid, but does not include a transportable pressure receptacle.

A **relevant fluid** means steam, at any pressure, gases which exert a pressure in excess of 0.5 bar above atmospheric and fluids which may be mixtures of liquids, gases and vapours where the gas or vapour phases may exert a pressure in excess of 0.5 bar above atmospheric pressure. A pressure vessel may be regarded as a vessel used, or intended to be used, to contain a relevant fluid.

A **protective device** includes any protective control or measuring equipment which is essential to prevent a dangerous situation from arising, for example, instrumentation which has to function correctly in order to be able to protect the system.

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; valves, steam traps and filters; pipework and hoses plus pressure gauges and level indicators.

If pressure equipment fails in use, it could seriously or fatally injure people in the vicinity, as well as cause damage to property. The main hazards are: impact from the blast of an explosion or release of compressed liquid or gas; impact from parts of equipment that fail or any flying debris; contact with the released liquid or gas, such as steam; and fire resulting from the escape of flammable liquids or gases.

Estates Services, Physics and its user groups are committed to:

- providing safe and suitable pressure system equipment, as required;
- ensuring there is a set of operating instructions for each pressure system, including dealing with emergencies;
- fitting suitable protective devices and ensuring they function properly;
- carrying out suitable maintenance according to a maintenance program;
- making provision for appropriate training (and retraining, as required) for those operating pressure systems;
- arranging for the equipment to be examined according to a written scheme of examination; and
- arranging for competent persons to prepare written schemes of examination and to carry out examinations.

In addition, it should be noted that where equipment is rented from a supplier (e.g. the bulk nitrogen tanks and the compressed gas cylinders); the responsibility for the pressure vessel certification resides with the owner/supplier. Whereas, Estates retains full responsibility for pressure system equipment which is site-owned e.g. compressed air receivers (which are located throughout the building).

All members of staff and postgraduate students who are involved in the specification, purchas

D6.7.1 EQUIPMENT AT ELEVATED PRESSURE OR UNDER VACUUM

All glass vacuum lines should be constructed and clamped in such a way that strains in the glassware are avoided. All bulbs should be taped and preferably screened with a wire mesh. Liquid nitrogen should be removed from traps before admitting air to the system: a trap cooled with liquid N₂ and exposed to air will condense liquid O₂ from the air which can present a considerable explosive and fire hazard. When the vacuum line is mounted on a metal frame, the frame should be electrically earthed. The safety guard covering the belt drive of a vacuum pump must be securely in place when the pump is in use.

All evacuated vessels present an implosion hazard. Adequate protection must be provided: vacuum desiccators should be wrapped in covers, rotary evaporator condensers should be protected with plastic netting and Dewar vessels should be encased in thick cardboard. Always ensure that such equipment is used with care and as specified in the manufacturer's instructions. In particular be sure that autoclaves are operated correctly and that unsuitable containers are not used.

Vessels and pipelines that contain air, gases, steam etc. over 0.5 bar fall under the Pressure Systems Safety Regulations 2000 (PSSR) are subject to routine inspections. This requires them to be placed on a Register held by the Estates Services. Inspections for Physics are co-ordinated by Estates Services and the Technical Support and Safety Manager. These inspections are normally conducted by an external party (e.g. University Insurers, specialist contractors etc.). The type of equipment involved in such examinations includes all gas cylinders, vacuum vessels, freeze dryers, and autoclaves among others incorporating a pressure gauge and exceeding 0.5 bar. If in doubt, ask your supervisor or the Technical Support and Safety Manager.

HSE Pressure Systems

D6.8 VIBRATION

Hand-arm vibration is vibration transmitted from work processes into workers' hands and arms. It can be caused by operating hand-held power tools, such as sanders, grinders, disc cutters, powered mowers, chainsaws, brush cutters etc. or by holding materials being processed by machines, such as pedestal grinders.

Whilst occasional exposure to hand-arm vibration is unlikely to cause ill health, regular and frequent exposure can cause a range of conditions and specific diseases. Early symptoms include any combination of tingling and numbress in the fingers; loss of strength in the hands; fingers going white (blanching) and becoming red and painful on recovery.

Whole-body vibration (WBV) is the shaking or jolting of the human body transmitted through a supporting surface (usually a seat or the floor). Among those most likely to experience high vibration exposures are regular operators of off-road machinery such as tractors, dumpers or mowers, or who stand on a structure attached to a large, powerful, fixed machine which is impacting or vibrating.

In some cases, prolonged or excessive WBV may cause health risks including back-pain or can aggravate a previous musculoskeletal injury. In general, older people, young people and pregnant women are more likely to be at higher risk.

For both types of vibration, an assessment of the risks is required. This should include actions to reduce exposure

to within legal limits, provide staff with relevant information, instruction and training, and where necessary arrange health surveillance through the Occupational Health Service.

University Local Rules for Vibration at Work Control the risks from hand-arm vibration (INDG 175 HSE); Hand-arm vibration – Advice for employees (INDG296 HSE); Control back-pain risks from whole-body vibration (INDG242 (rev1) HSE). The Control of Vibration at Work Regulations 2005 (HSE L140 Second Edition)

If you have any concerns about this matter, please speak to your line manager and/or contact the Occupational Health Service (Ext. 4824)

D7 CHEMICAL HAZARDS

D7.1 CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH (COSHH)

Substances hazardous to health include chemicals, products containing chemicals, fumes, dusts, vapours, mists, gases (including asphyxiating gases) and biological agents (e.g. micro-organism being worked on in a laboratory that may cause infection). If the substance packaging has any of the hazard symbols (i.e. very toxic, toxic, harmful, corrosive, irritant, sensitising, carcinogenic, mutagenic or toxic to reproduction) then it is classed as a hazardous substance. Other substances may be less obviously hazardous, such as paint, cleaning materials or dust from natural materials, like wood.

Exposure to hazardous substances can occur by inhalation, skin contact or puncture, swallowing or through the eyes. As well as immediate ill health effects, such as streaming eyes or breathing difficulties, there can be longer-term effects like asthma, dermatitis and cancer.

The section of COSHH covers:

- Assessment;
- General points; and
- Principles of assessment

D7.1.1 ASSESSMENT

This is the cornerstone of the Regulations. Its aim is to ensure that **PRIOR TO USE** the hazardous or potentially hazardous properties of all substances to be used have been considered and appropriate control measures taken.

All COSHH assessments must be regularly reviewed. This must be done whenever changes in the substances to be used or processes adopted occur or at least annually. An up-to-date copy of all COSHH assessments must be readily and easily available to all that may be affected by the works. If required a copy can be stored within a lab safety file or folder. The University has an online electronic system for COSHH assessments, https://www.coshh.strath.ac.uk/

Those involved in working with substances hazardous to health will be required to attend the COSHH Awareness course. Those assessing the hazardous must attend the COSHH Assessors course.

D7.1.2 GENERAL POINTS

The COSHH Regulations detail the following as substances hazardous to health:

• Substances or mixtures of substances classified as toxic, very toxic, harmful or irritant etc. These can be identified by their warning label and the supplier must provide a safety data sheet for them. Many commonly used hazardous substances are listed in the HSE publication Approved Supply List.



- Substances which have a Workplace Exposure Limit (WEL).
- Micro-organisms, which create a hazard to health of any person, where the hazard arises out of, or concerning, work which is under the control of the employer. For example, contracting a disease through work with a pathological sample or an in-patient in hospital is included, but catching a cold from a coworker is not.
- Dust of any kind when present in the following quantities: 10 mg m-³ inhalable dust, 4 mg/m-³ respirable dust, except where toxicity indicates a lower exposure level is required.
- Any other substance which creates a comparable risk to health to any of the above.

The COSHH Regulations do NOT apply where the Control of Asbestos at Work Regulations or the Control of Lead at Work Regulations apply, or where the risk is from Radiation, Noise, Pressure, Flammability, Heat or Cold, as these are covered by other regulations.

In accordance with the Control of Substances Hazardous to Health Regulations, Physics and its user groups are committed to preventing or reducing workers' exposure to hazardous substances by:

- identifying where hazardous substances are used;
- carrying out COSHH assessments (which will be retained for **40** years); see retention periods section
- providing control measures to reduce harm to health and ensuring they are used;
- keeping all control measures in good working order;
- providing information, instruction and training for employees and others;
- providing monitoring and health surveillance in appropriate cases;
- planning for emergencies.

D7.1.3 PRINCIPLES OF ASSESSMENT

Under COSHH, adequate control of exposure to a substance hazardous to health means applying the following principles of good practice to the assessment:

Assess the	e risks	involved in	Classification and route substance is hazardous to health and effects of
using	the	hazardous	exposure to the hazardous substance e.g. Irritating to skin, harmful by
substance			inhalation, avoid contact with skin and eyes and avoid inhalation of vapour
			or mist etc. Determine the long or short-term effects from possible exposure
			e.g. short-term effects from acids would be serious burns or longer term
			effects from repeated exposure from some organic solvents may cause
			dermatitis.

Decide on the precautions needed to carry out any activity	The actions or steps that would have to be taken to reduce the risks involved and would include the use, storage and disposal of the substance.
Prevent or control exposure to the hazardous substance	Design or change the activity so as not use the hazardous substance or use a safer alternative or the same substance but in different form e.g. in pellet instead of powder. Exposure to any substance that causes cancer or heritable genetic damage or asthma should be reduced to as low a level as possible. Include engineering controls like equipment that would totally enclose the process or control exposure at the source e.g. work activity is carried out in a fume hood, microbiological safety cabinet or glove box. Personal protective equipment (PPE) required in work activity. Remembera lab coat and safety glasses are a minimum in a lab. If a face mask has been identified in the risk assessment this should be individually fitted to the user. Contact the Departmental Safety Convenor or the Health & Safety Adviser for further information. Include workplace exposure limits (WEL's) found on the HSE website under document EH40/2005
Ensure control measures are used	Control measures must be used if detailed in a COSHH assessment e.g. safety glasses and gloves must be worn during work activity.
Monitoring exposure, health surveillance and health record	Decide if monitoring and or health surveillance is needed. Biological monitoring. Staff and students working with certain types of substances, and who are deemed susceptible, will be required to complete a health record form (different to a personal activity return) to record those substances they work with. Substances such as: respiratory sensitizers, skin sensitizers, mercury, latex, arsenic and COSHH Schedule 6 Carcinogens. In addition, the Occupational Health Service will report to Physics on each person's fitness to continue to work with these substances. Both report and record should be kept by the department for 40 years, however, only the OHS will retain records which contain personal medical information. For most work air monitoring should not be necessary for protecting health providing a suitable and sufficient assessment has been carried out to ensure adequate control measures are in place; are being correctly used and are appropriately maintained. Where the COSHH assessment identifies the need for monitoring of exposure, SWR can coordinate such monitoring via the Occupational Hygienist or through the OHS for health surveillance issues.
Record of Personal Work Activity	A record of personal work activity must be kept if working with a substance that has risk phrases R45 or R49 or hazard statements H350 or H350i. Use of Nanomaterials of unknown toxicity and cytotoxic substances must be recorded using form S29 for nanomaterials and S31 for cytotoxic, carcinogenic, mutagenic and teratogenic substances. Records should be kept for 40 years.
Prepare contingency plans	 This would cover how to deal with accidents and emergencies. Workers should always have a plan if there is an uncontrolled release of a hazardous substance. This would contain: Handling and storage, procedures for dealing with floor spillage, contamination of person or an accident involving the substance. First aid provisions that would be provided on site. The details of the emergency number(s), State a copy of the COSHH assessment and Safety Data Sheets (SDS) will be readily available in the lab area which would be used in the event of an accident and can be taken to hospital with the injured person if necessary.

	• Firefighting measures. (Specific requirements and guidelines can be found in the SDS).
Inform all relevant people coming into contact with the hazardous substance	Include anyone that would come into contact with the substance including other workers and visitors.
Ensure suitable training and supervision is given in carrying out the activity.	Training should be given to ensure workers understand the procedures or steps that should be taken to minimise exposure to any hazardous substance and ensure WEL's are not exceeded. Adequate supervision should be given on the activity involving any hazardous substance.

University Local Rules for Control of Substances Hazardous to Healthy (COSHH) University Guidance for COSHH Working with Substances Hazardous to Health (INDG136 HSE); Control of Substances Hazardous to Health (L5 HSE);

- Departmental Arrangements for the Control of Chemicals (see Spider X)
- Complete COSHH Essentials training course (online)
- Complete COSHH Assessors training course (class)
- Complete an online eCOSHH assessment for all work activities which involve substances which fall under COSHH.

D7.2 CHEMICALS - GENERAL

The section of chemicals covers some general aspects and includes:

- Labelling;
- Safe custody of dangerous drugs and poisonous chemicals
- Waste generation and disposal

All chemical users must be aware of and adhere to the Department Local Rules in this area (see Appendix).

D7.2.1 LABELLING

Chemicals older than 2009 which are used and stored in the lab will have older style orange and black labels. This labelling classification system is now replaced by the European Classification Labelling and Packaging of Substances and Mixtures Regulations 2009 (CLP), which follows the United Nations Globally Harmonized System of classification and labelling of chemicals (GHS). New pictograms, signal words, hazard and precautionary statements (H and P codes), hazard class and categories are used.



Web links to CHIP and CLP can be found in Addendum 6

D7.2.2 SAFE CUSTODY OF DANGEROUS DRUGS AND POISONOUS CHEMICALS

Substances in Schedules 1, 2 and certain substances in Schedule 3 of the Misuse of Drugs Regulations, 2001 and amendments must be kept in approved, locked cabinets and records of use and stocks must be kept.

Departments should have a Standard Operating Procedure for purchasing, storage recording and disposal of controlled drugs in schedules 1, 2, 3 and 4 which must be read and signed by all users.

Departments must also maintain a register for the use of controlled drugs in schedules 1, 2 and 3 must be signed by all users.

Dangerous poisonous chemicals must be kept in cupboards and not on open benches or shelves. Highly toxic substances (e.g. inorganic cyanides) must be kept in locked cupboards and written records of stocks and usage must be kept.

Remember to always check which schedule the substances are in and if you are unsure contact the Chemical/Biological Adviser, Departmental Safety Convenor or the Health & Safety Adviser for advice.

The legal classification of these substances is recorded in the current 'The Medicines, Ethics and Practice Guide' or a list can be obtained at the Home Office Controlled drug domestic licences website.

• Any user that requires to purchase, use or store controlled drugs in schedules 1, 2, 3 and 4 MUST inform the Chemical/Biological Adviser and Departmental Safety Convenor, to ensure these items are properly recorded and securely stored.

D7.2.3 WASTE GENERATION AND DISPOSAL

Generation of Chemical Waste

- Organic waste solvents must not be discarded down the sinks; they should be accumulated in suitable containers (e.g. 20L drums) and labelled as either HALOGENATED (molecules containing chlorine (Cl), fluorine (F), bromine (Br) or iodine (I)) or NON-HALOGENATED waste before being sent for disposal via the Hazardous waste route.
- Ethidium bromide and acrylamide gels should be accumulated in the designated waste containers and labelled very toxic before being sent for disposal.
- Waste silica **must not** be disposed of in normal domestic waste but placed into plastic bags or containers sealed with tape then clearly labelled silica (Dust).
- General low-level lab waste (e.g. plastic pipette tips, gloves, tissues etc.) which may be contaminated with chemicals should be placed in appropriate laboratory hazardous waste bins and disposed through the Hazardous Waste Co-ordinator.
- General lab waste that is not contaminated with any hazardous chemicals or substances can be disposed of as general non-hazardous lab waste via the normal cleaning disposal route.

Waste Disposal

- The disposal of chemical waste deemed to be hazardous to health should be undertaken according to COSHH regulations. Hazardous waste disposal of chemicals must be covered by relevant risk assessment(s).
- Branded chemicals in original bottles and containers can be sent for disposal as they are without further action. Chemicals not in original packaging must be stored in appropriate containers for safe transport and clearly labelled with the full chemical name and associated hazard.
- The Chemical/Biological Adviser and the Hazardous Waste Co-ordinator are the Physics "nominated persons" for the disposal of special waste who can review and submit the signed S15 Form.

The S15 must include:

- a) The full chemical name of the substance. Avoid abbreviations where possible and use a new line for each substance.
- b) The amount to be disposed of, in grammes, millilitres or litres, with a description of the container type, e.g. glass jar, Winchester, metal drum. <u>All containers must be suitable for the safe storage of their contents.</u>
- c) The description of the particular hazard involved with the substance. For example: toxic, flammable, corrosive, carcinogen.

All containers must be clearly and correctly labelled.

Waste must be correctly transported from laboratories to the Estates or Contractors vehicle where it will be checked by the Waste Co-ordinator before being accepted for removal. Estates and the Waste Contractor reserves the right to refuse chemical waste if any of the above guidelines are not satisfied.

The procedure for the disposal of hazardous chemical waste in Physics is as follows:

- The user wishing to dispose of waste needs to complete an S15 Hazardous Waste Forms (Estates Services)_- see Estates Services_waste disposal form.
- The S15 form should then be emailed to the Hazardous Waste Co-ordinator.
- The Hazardous Waste Co-ordinator will then confirm with the user a suitable date and time to uplift the waste.
- Arrangements will then be made by the Hazardous Waste Co-ordinator with the University appointed Hazardous Waste Adviser to acknowledge, sort and to arrange for subsequent waste disposal uplift direct from the laboratory.

S15 Form and Waste Labelling

		Chemical Waste Disposal Form							
Version 2. Issue 1	Strathclyde Glasgow	Please send your con ALL	Please send your completed from electronically to the following enail address and ensure a paper copy of the form it with your wate. ALL WASTE ITEMS MUST BE CLEARLY LABELLED WITH STS REFERENCE NUMBER AND ITEM NUMBER.						
Department:		Nominated Person:			Person Delizering Vaste:				
Delivery Date:		Tel No:							
Waste Accepted by:		E-mail@strath.ae.uk			E-mail@strath.oc.uk			Testal:	
S15 Reference:		Signature:			Signature:				
		Customer's Declaration of Hazard	four Constituents:						
	If a constituent is present please indicatevit	h "Y" or "X". You may be asked more	information regarding youre waste	dependant on d	his declaration.				
	Constituent	Cono?Units	Constituent	Conel Units	Constituent	Con of Unit		30PPLIE3 HEUDINE	
	List I/II Substances Isee tab 4.1		Active Agrochemicals:		Toxic / Ecotoxic Metals:		10 ljerry oan		
	Asbestos Containing material:		Halogenated Compounds:		Molybdenum:		301 olip top drum (plastic)		
	Explosive Substances:		l'horrecarbons or chlorofiuorocarbona		Cadmium		2051 elip top drum (Steel)		
	Chemical Veapona:		Phenels / Styrene / Isocyanates:	Thalban:			2061 bung top drum (Steel)		
	Radioactive Materials:		Cyanide Components:	nponents: Rerow Cor			2051 Vented clip top (Steel)		
Biel	ogically Active Materials or GMDs:		Nicogen Conpounds (Anines, Annuela, etc.):		Peroside Forming Substances:		301 cealed unit		
Pharmacouticals,	Controlled Drugs or Pressription Only Medicines:		Silicon Compounds:		Citidising/Reducing Substances:		Stillage		
PO	Pe / PEBe / Diosine / Putane / PETe:		Sulphur / Sulphide Compounds:		Organic percoides (SADT s SIPC)		770 wheelie bin		
	fater Reautives or Air Reautives:		Oils/Fats/Greases Present:		Sufactants or Betergents Precent:				
		The blue highlighted rows	and columns need to be completed	l ac fully ac poss	ible, Use one line per waste i	om			
Your Reference	Chemical Name or	Components (seperated by semicolon)	Concentration (reperated by semicolon)	Container	No. of Container	Physical	Hazard Statements	Hazard Properties HP codes floral applicable SEE To	
til required Description of waste		Required for volumer 351		Туре	containers kg. II	51310	In Codes Ret all appreaded SEE TAB 2	3	
					-	1			
			Lange Lange Lange						
1.Waste Form 2.Hazard Statements 3.Hazard Properties 4.List 16: II Substances 5.POPS +									

D7.3 SPECIFIC CHEMICALS AND DRUGS

The section of specific chemicals covers the following substances:

- Acids and bases;
- Carcinogenic, mutagenic, reproductive toxins;
- Chemical weapons;
- Controlled drugs;
- Cryogenic materials;
- Cytotoxic chemicals;
- Desensitized explosives;
- Drug precursors;
- Explosive substances;
- Hydrogen fluoride;
- Lead;
- Mercury;
- Poisons;
- Volatile chemicals

D7.3.1 ACIDS AND BASES

Some acids and bases are extremely corrosive. When these are diluted (acid or base added gradually towater; never water to acid!) heat is generated and considerable splashing and spitting may occur. In this and all mixing operations where heat is generated, a heat-resistant vessel must be used. A measuring cylinder must not be used. A lab coat, gloves and safety spectacles must be worn. Sulphuric, nitric, chromic and perchloric acids are all strong oxidising agents and often react violently with biological materials. Perchloric acid must only be handled in a wash-down fume cupboard and should never be allowed to come into contact with grease or wood.

Bottles of 0.88 s.g. ('880') ammonia should always be kept cool. When opening a new bottle of ammonia, place it in a fume cupboard and draw the sash down far enough to protect the eyes. There is invariably a slight spray as the bottle is opened.

D7.3.2 CARCINOGENIC, MUTAGENIC, REPRODUCTIVE TOXINS (CMRS)

CMRs are chemicals which are carcinogenic, germ cell mutagenic or toxic to reproduction. The COSHH Regulations and their Approved Code of Practice require that exposure to CMRs is prevented or, where this is not practicable, adequately controlled.

COSHH defines a **carcinogen** as a substance or preparation (i.e. a mixture or solution of two or more substances) which either:

- is classified for labelling purposes as Carcinogenic Category 1 or 2 carrying the Risk Phrase R45 (May cause cancer), or R49 (May cause cancer by inhalation), or the Hazard Statement H350 (May cause cancer) or H350i (May cause cancer by inhalation); or
- would be classified as such, even if the law does not require this as with certain pharmaceutical products or by-products such as hardwood dust

Controlled Carcinogens may be used but only under very carefully-controlled conditions (appropriate and fullydocumented schemes of work will be required and workers will have to undergo appropriate medical surveillance e.g. nitro- and amino benzenes; benzene; 1-naphthylamine; carbon tetrachloride dichlorobenzidine; trichloroethylene.

Mutagens are substances that cause hereditary genetic changes (mutations) or increase their incidence. Many mutagens are harmful and some are carcinogens and vice versa.

Category 1 and 2 mutagens carry the risk phrase **R46** (May cause heritable genetic damage) or the Hazard Statement **H340** (may cause genetic defects).

Category 3 mutagens are marked **R68** (possible risk of irreversible effects), or the Hazard Statement **H341** (suspected of causing genetic effects).

Substances that are known to impair fertility or cause developmental toxicity in humans are defined as **Reproductive toxins**. This group of substances includes teratogens (having an adverse effect on the developing foetus), embryo toxins (act during pregnancy causing poisonous effects on the foetus).

Category 1 and 2 reproductive toxins carry the risk phrase **R60** (may impair fertility) or **R61** (may cause harm to the unborn child) or the Hazard Statement **H360F** (may damage fertility) or **H360D** (may damage the unborn child).

COSHH assessment is particularly important when carcinogens, mutagens or reproductive toxins are to be used because of their possible effects on the body.

D7.3.4 CHEMICAL WEAPONS

The Chemical Weapons Convention (CWC) is an arms control treaty imposing a verifiable ban on an entire category of weapons of mass destruction. It has legal effect in the UK through the Chemical Weapons Act 1996 and is implemented by the UK CWC National Authority (NA), part of the Department for Business Enterprise and Regulatory Reform (BERR). Organisations that produce, process or consume, above certain thresholds, chemicals listed in the Convention's Schedules of Chemicals are required to submit certain information to the NA. There are specific licensing requirements for all activities involving Schedule 1, 2 and 3 chemicals.

The licences are a legal requirement of the CWC and Chemical Weapons Act 1996 and are issued by the NA. Physics must make an annual declaration for these chemicals. Further information is available from Health & Safety Adviser.

• Any user that requires to purchase, use or store materials that fall under the Chemical Weapons Convention **MUST** inform the Chemical/Biological Adviser and the Departmental Safety Convenor.

D7.3.5 CONTROLLED DRUGS

Substances listed in Schedules 1 to 4 of the Misuse of Drugs Regulations, 2001, are available only to users licensed by the Home Office. Licences are issued to those that can demonstrate a need for these substances and meet stringent security requirements. Orders for these substances are rejected by chemical suppliers unless supported by a copy of your licence. Researchers contemplating applying for a licence should seek advice from Health & Safety Adviser. Unless properly authorised, it is a criminal offence to fabricate, or to be in possession of, any of the substances listed in Schedules 1 to 4 of the Misuse of Drugs Regulations.

• Any user that requires to purchase, use or store materials that fall under Schedule 1 of the above Regulations MUST inform the Chemical/Biological Adviser and the Departmental Safety Convenor.

D7.3.6 CRYOGENIC MATERIALS

Cryogenic materials used within Physics include liquid Nitrogen and Helium. Cryogenic materials, the vapour coming from them, or any object, which has been in contact with them, can cause severe burns if they come into contact with the skin. Heat-resistant gauntlets and a face shield must be used when handling them. Both materials evaporate at room temperature, even in an insulated container. They should never be used in confined spaces, and must always be moved by using the lift between floors with signage stating `Do not enter - Cryogenic material – Danger of Ashyxiation`. An oxygen monitor must always be used when handling large quantities of cryogenic materials.

Use only properly designed containers for liquid nitrogen; these should be labelled 'Danger Liquid Nitrogen'. Domestic vacuum flasks should not be used at any time, as they have been known to explode. Keep the surface area of liquid nitrogen to a minimum to reduce the condensation of oxygen from the air. It is wise to treat containers filled with liquid nitrogen as if they contained flammable liquid since sparks, flames, etc. can be dangerous in the presence of liquid oxygen.

Liquid Nitrogen or Helium Requests: Any user that requires Cryogenic liquids should contact the Technical Support and Safety Manager. Groups in the TIC should contact the stores and give details of lab number and either bring the empty dewar to the stores or request stores to uplift it (if the dewar is not empty) by providing details of where the dewar is located. If the dewar is not empty stores will pick it up from lab and prioritise goods lift for transportation. Stores staff will fill the dewar and return it to the lab requested via goods lift. The user will need to complete and sign a requisition form for the material.

D7.3.7 CYTOTOXIC CHEMICALS

Usage of cytotoxic materials must be strictly controlled. Please consult the University local rules governing such activities and speak to your Departmental Safety Convenor in the first instance.

It is recommended by the HSE that employers keep a record of work activity on all individuals potentially exposed to cytotoxic, mutagenic and teratogenic agents and their compounds.

This form can also incorporate susceptibility or potential exposure to other substances such as:

nanomaterials or

- medicines of unknown toxicity;
- respiratory and skin sensitizers and
- non COSHH Schedule 6 Carcinogens.

Staff and students will be required to have their health information recorded on a health record form which will be completed by the Occupational Health Service. Users must complete a record of personal work activity (S31) to record those substances they work with. Both report and record should be kept for 40 years, however, only the Occupational Health Service will retain records which contain confidential personal medical information.

University Local Rule for Cytotoxic Substances and Agents HSE Safe Handling of Cytotoxic Drugs International Agency for Research on Cancer - Classification Cytotoxic Agents

• Any user that requires to purchase, use or store cytotoxic substances ensure these items are properly recorded, used and stored.

D7.3.8 DESENSITISED EXPLOSIVES

Desensitised explosives are defined as explosive substances that have been wetted with water, alcohol or dissolved with one of more other substances so as to suppress their explosive properties. The use of such chemicals is governed by the Manufacture and Storage of Explosives Regulations 2005 and the Control of Explosives Regulations 1991. Physics must make an annual declaration for these chemicals. Further information is available from Health & Safety Adviser.

• On no account are desensitised explosives or any other explosive materials which fall under the above regulations permitted in Physics without prior approval from the Chemical/Biological Adviser and the University Chemical Adviser.

D7.3.9 DRUG PRECURSORS

The University has duties imposed by the Home Office under the various European regulations with regard to the monitoring of trade in Drug Precursors within the EU and between the Community and third countries. The Home Office are the UK enforcing agency for this legislation. The University must make an annual declaration of the use and storage of Category 1 and Category 2 drug precursor chemicals, and must ensure that these chemicals are stored securely and used safely. Further information is available from SWR.

D7.3.10 EXPLOSIVE SUBSTANCES

Some compounds are inherently unstable and may decompose explosively; the use or preparation of such compounds must be discussed fully with the University Chemical Safety Adviser before any work is undertaken.

Nitrocellulose paper used in a variety of laboratory electrophoresis and gel-diffusion procedures, including Western blots, poses a fire hazard and may detonate in a steam autoclave. If nitrocellulose paper needs sterilising it must be chemically disinfected and never autoclaved.

Mixtures of some chemicals are explosive. Chemicals should not be mixed together without proper thought and research into the likely outcome. Typically, reactions between substances and strong oxidising agents, such as

hydrogen peroxide and perchloric acid, may become explosive. Other substances become dangerous in a fire because of their oxidising properties; they include nitrates, chlorates and iodates. Only minimal quantities of such compounds should be kept in the laboratory. Reactions between the following chemicals may become uncontrolled or form explosive compounds and should only be performed after careful planning and the production of a COSHH Assessment form.

Substances listed in the left column below should be stored and handled so that they cannot accidentally contact corresponding substances in the right column:

Alkali metals such as Na, K, Li, Cs Halogens – Fl, Cl, Br, I	Carbon dioxide, chlorinated hydrocarbons and water
Acetic acid, hydrogen sulphide	Ammonia, acetylene and hydrocarbons
	Oxidising agents such as chromic acid, nitric acid,
Aniline (phenylamine) Hydrocarbons	peroxides, and permanganates
Sulphuric acid or any flammable liquid	

Strong sodium hypochlorite and hydrogen peroxide solutions must be stored in vented containers because of the potential pressure build-up.

D7.3.11 HYDROGEN FLUORIDE (HYDROFLUORIC ACID)

Hydrogen Fluoride (Hydrofluoric acid) and buffered hydrogen fluoride solutions e.g. buffered oxide etch are used in certain areas of Physics (e.g. TIC clean room). Under normal conditions, Hydrogen fluoride is a colourless gas, which has a sharp, pungent smell. It is highly toxic and irritating, but non-flammable. Hydrogen fluoride is however usually found as a strong solution in water, whereby it is Hydrofluoric acid. Hydrofluoric acid is an extremely strong acid. It will severely corrode metals, glass, minerals and many organic (carbon- containing) substances; it will release highly flammable hydrogen in the process and it will be rapidly absorbed into the body where it will act as a direct poison. Immediate First Aid and hospital medical treatment will be required in the event of an exposure. The use of a specific antidote gel or solution (calcium gluconate) will normally be required.

University Security Wardens and specific laboratory staff are trained in First Aid measures. Relevant laboratory staff are expected to be familiar with the safety procedures associated with HF equipment and emergency arrangements. In the event of a serious leak or incident, the building may need to be evacuated.

BOC Gases: Hydrogen Fluoride Data Sheet (PDF)

D7.3.12 LEAD

When lead and items containing lead are processed, worked, or recovered from scrap or waste they can create lead dust, fume or vapour. People exposed to these can absorb lead into their bodies through inhalation; ingestion if they eat, drink, smoke or bite their nails without washing their hands and face; or absorbed through the skin (e.g. lead alkyls or lead naphthenate). Lead can stay in the human body, stored mainly in bones, for many years without making a person ill.

If the level of lead in someone's body becomes too high, it can cause headaches, tiredness, irritability, constipation, nausea, stomach pains, anaemia and loss of weight. Continued uncontrolled exposure could cause more serious symptoms such as kidney damage, nerve and brain damage and infertility. An unborn child is at particular risk from exposure to lead, especially in the early weeks before a pregnancy becomes known. Hence,

women capable of having children should make sure they follow good work practices and a high standard of personal hygiene.

If there is a possibility of people being exposed to lead at work, then Physics will, in accordance with the Control of Lead at Work Regulations, 2002 (CLAW):

- assess the risks to health to determine whether or not exposure is 'significant' (explained in CLAW) and what precautions are needed to protect their health;
- put in place systems of work and other measures, such as fume and dust extraction, to prevent or control exposure to lead, and keep equipment in efficient working order;
- provide washing and changing facilities, and places free from lead contamination for eating and drinking;
- provide information about the health risks from working with lead and the precautions that should be taken;
- provide training to ensure the correct use of any control measures and protective equipment;
- arrange for individuals to be placed under health surveillance, where necessary

University Local Rule - Lead Lead and you (INDG305, HSE); Control of Lead at Work (L132, HSE).

D7.3.13 MERCURY

Mercury is an extremely dangerous and cumulative poison. Where possible, mercury containing items should be replaced with non-mercury alternatives. For example, there should be no mercury thermometers used in Physics. Where it is not possible to substitute mercury containing equipment or processes involving mercury, then great care must be taken. Spills, if not cleaned-up, will break down into small globules and saturate the air with poisonous vapour. Mercury should be used in a tray large enough to contain any spills. Mercury spill kits have clear instructions on how to clean up a spill, and the instructions should be followed carefully. The spill should then be reported to the Departmental Safety Convenor. The sealed container containing the waste mercury must then be disposed of as hazardous solid waste via the stores waste disposal system.

D7.3.14 POISONS

Many of the chemicals commonly used in the laboratory are poisonous, and proper care must be taken in their use and disposal. A number of substances come within the scope of the Poisons Act, 1972 and the Poisons Rules 1982. The substances affected will either be included in Part I or Part II of the Poisons List Order; some may be subject to additional requirements under the various Schedules to the Poisons Rules.

The Poisons Rules lay down requirements for the sale, supply, storage, transport and labelling of poisons and the containers in which they are sold. Essentially, the containers have to be designed, constructed and secured to prevent escape and be impervious to the substances. Containers must be sufficiently stout to prevent leakage arising from the ordinary risks of handling and transport. Labelling must be indelibly marked in English on the container. The labels must be a particular size and colour and show details of the general nature of risk, indicated by words and symbols.

All Schedule 1 poisons must be kept in a locked cabinet, specific for the purpose, in the laboratory. A designated responsible person should hold the key and a log book should be kept to record when a poison is used, how much and by whom. Please contact your Departmental Safety Convenor or the Chemical and Biological Adviser for further guidance and information.

• Any user that requires to purchase, use or store materials that fall under Part I or Part II of the Poisons Act MUST inform the Chemical and Biological Adviser or the Departmental Safety Convenor.

D7.3.15 VOLATILE CHEMICALS

The use and storage of solvents comes under COSHH regulations and the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR). Other regulations such as the Management of Health and Safety at Work, European Classification Labelling and Packaging of Substances and Mixtures Regulations 2009 (CLP) etc., also have an impact on the use and storage of solvents.

Many solvents are flammable and often have very low flash points as well as heavy vapours; **there is a risk of fires and explosions**. Flammable solvents must be used only in areas where there are no naked flames. They should never be evaporated in ovens nor heated except on special (spark proof) heating plates or in pre-heated water. Such operations must be performed in a fume cupboard. In laboratories, workshops and associated areas the storage of solvents should be in approved flammable storage cabinets that contain the contents of any broken bottles in trays. In order to eliminate the risk of explosive mixtures forming, solvents should not be stored in cold rooms, fridges and freezers, unless these have been designated as spark proof. No solvents should be disposed of down any sink or drains. Waste solvents should be disposed of via the hazardous waste disposal system.

Glacial acetic acid is a flammable solvent. **Diethyl ether** (ethoxyethane) is extremely volatile and flammable and superheats very readily. Additionally, on standing in contact with air, diethyl ether (and other aliphatic ethers) are slowly converted into unstable, non-volatile peroxides; this rate of conversion is enhanced in the presence of acid and light. During distillations or evaporations, peroxides are concentrated and may explode. All ethers should therefore be tested for the presence of peroxides with starch/KI paper. If the paper turns blue, the ether should be shaken with an aqueous ferrous sulphate solution until no more peroxide is detected or, alternatively, distilled from concentrated sulphuric acid. Bright copper wire will inhibit peroxide formation.

Many organic solvents can volatilise to fill a working area to a concentration high enough to cause unpleasant physiological effects. The symptoms range from drowsiness and lack of co-ordination (leading to increased accident proneness) through nausea and mucous membrane irritation to serious damage to the lungs, liver, kidneys or brain. Furthermore, some solvents, such as benzene, are carcinogenic. Some compounds have been assigned workplace exposure limits (WEL) (which MUST be clearly stated on the COSHH assessment form). Work must be performed so that the UK exposure limit is not exceeded. In most cases, working in a fume cupboard will provide adequate protection. The majority of organic solvents can also cause skin damage if there is prolonged or repeated contact. The damage to the skin is due to the defatting effect of the solvents, but corrosive and allergic effects are also possible. Gloves resistant to the materials being handled should be worn.

Many other substances are volatile and may be toxic or cause irritation. For example, **bromine**, **iodine**, **hydrocyanic acid** and various **selenium compounds** are all dangerous and should be handled with care so as not to contaminate the air in the room.

- All volatile substances must be handled in a fume cupboard.
- For more information see EH40/2005, Workspace exposure limits

D8 BIOLOGICAL SAFETY

A biological agent is defined as any micro-organism (bacterium, virus, parasite, fungus), cell culture (the in-vitro growth of cells derived from multicellular organisms) or human endoparasite, including any which may have been genetically modified, which may cause infection, allergy, toxicity or otherwise create a hazard to human health.

Individuals may be exposed to the risk of infections, for example viral infections such as hepatitis, when handling specimens of blood, plasma, sera, exudates, saliva, faeces or urine and samples of tissue. Immunocompromised individuals or pregnant workers may be at a higher risk dependant on the particular biological agent they are working with.

Infection can enter the body by various routes: through pricking or cutting skin while handling specimens, by exposing already broken skin to the infective material, via splashes into the eyes or contamination of the mouth, through inhalation of aerosol droplets. Aerosols may be produced by the shaking of specimens, mechanical homogenisation, opening containers, centrifuging tubes or bottles with wet rims, centrifuging nearly filled open tubes in an angle head centrifuge rotor and the abrupt braking of the centrifuge to save time.

Under the Schedule 5 of the Anti-Terrorism Crime and Security Act 2001 certain biological agents and toxins are subject to notification to the Home Office. Contact the Health & Safety Adviser for further information.

All personnel working with animals are required to undergo an annual respiratory assessment with the Occupational Health Service. Please refer to Section D.8.1.

All biological agent users must be aware of and adhere to the Department Local Rules in this area (see Appendix).

D8.1 CLASSIFICATION OF BIOLOGICAL AGENTS

Biological agents are classified into four hazard groups according to

- a) their ability to cause infection
- b) the severity of the disease which may result
- c) the risk that infection will spread through the community, and
- d) the availability of vaccines and effective treatment.

Hazard Group 1	A biological agent that is unlikely to cause human disease.
Hazard Group 2	A biological agent that can cause human disease and may be a hazard to employees; it is unlikely to spread to the community and there is usually an effective prophylaxis or effective treatment is usually available.
Hazard Group 3	A biological agent that can cause severe human disease and presents a serious hazard to employees; it may present a risk of spreading to the community but there is usually effective prophylaxis or treatment available.
Hazard Group 4	A biological agent that causes severe human disease and is a serious hazard to employees; it is likely to spread to the community and there is usually no effective prophylaxis or treatment available.

D8.2 REGISTERING FOR BIOLOGICAL WORK

Individuals planning to work with biological agents, human or animal tissues, or body fluids and secretions should register with SWR before commencing work. Those failing to register will not be permitted to carry out their

work or will be required to stop work.

All laboratory workers who want to work with biological agents must **first** register online with SWR. **This** registration must be completed annually.

SWR is concerned with ensuring the health and safety of persons working with, or in contact with, biological material, including biological agents. In the University biological agents are considered to include microorganisms, cell culture, and human endoparasites, whether or not genetically modified, which may cause infection, allergy, and toxicity or otherwise create a hazard to human health. Biological materials include blood, tissues and body fluid.

Registration is online and the two forms **BP1** (For those working with micro-organisms, cell culture or human endoparasites, including any which may have been genetically modified, which may cause infection, allergy, toxicity or otherwise create a hazard to human health.) and **BP2** (For those working with animal or human blood, blood products, tissue or body fluids) can be found on **PEGASUS**.

Students can access the forms from the ADDITIONAL SERVICES tab and then look for the SWR online registration forms link. Staff should access from the HUMAN RESOURCES tab to find the SWR online registration forms link. Guidance notes are provided for both forms.

All work involving biological agents must be subject to a suitable and sufficient Control of Substances Hazardous to Health (COSHH) assessment and appropriate risk control measures. Health Surveillance by the Occupational Health Service may be required in certain cases.

The transportation of infectious material is strictly regulated in terms of packaging, labelling and containment to minimise risks in the event of spillage etc. In this respect the department will adhere to strict procedures which will also encompass the movement of material between laboratories, other departments and rail, road and air transport regulations.

The approved list of biological agents which dictates their categorisation, Facilities are not available within Physics to work with organisms in Group 3 or above.

D8.3 GENETICALLY MODIFIED ORGANISMS

Research activities involving genetically modified organisms' falls under The Genetically Modified Organisms (Contained Use) Regulations 2014. Lab workers planning to carry out research involving GM organisms must first submit their project for approval to the University GM Committee via <u>GMCommittee@strath.ac.uk</u>. Further information can be found at Genetic Modification including the Genetically Modified Contained Use Regulations, the procedure for approving projects, summary guidelines for GM-related projects, information on completion, suspension or termination of projects and background questions and answers. If you cannot find the information you need or require further information, contact the Biological Safety Adviser at SWR.

D8.4 GOOD MICROBIOLOGICAL PRACTICE

Good Microbiological Practice:

- Assume all microbiological cultures to be harmful and treat them as such.
- Cover cuts and scratches on hands with sticking plasters to reduce the chance of infection.
- Clearly label all cultures in orbital incubators and cold rooms. Include your name, date and the name of the organism.
- Do not create aerosols when using microbial cultures. Take extra care when flaming innoculating loops, vortexing cultures, opening screw-topped bottles, pouring cultures, using centrifuges and pipetting.
- Transfer samples into centrifuge bottles/tubes, balance and seal them in your laboratory area.
- Follow appropriate procedures for all aspects of transporting animal, human, microbiological material.
- Loosen all screw caps on bottles before autoclaving.
- Do not dispose of cultures or contaminated materials down the laboratory sink or in the ordinary domestic lab waste. Use the specified procedures to dispose of/decontaminate all microbiologically contaminated materials.
- Clean bench surfaces and equipment after use with appropriate disinfectant.
- Wash your hands at the hand basin before leaving the laboratory area.

Report any spillages or accidents to the Chemical and Biological Adviser.

D8.5 BIOLOGICAL AND CLINICAL WASTE DISPOSAL

See section D3.5.3.3

University Biological Safety Standard

The Approved List of Biological Agents; Working with substances hazardous to health (INDG136 HSE); Control of Substances Hazardous to Health (L5 HSE).

- Departmental Arrangements for the Control of Chemicals (see Spider X)
- Register for biological work if applicable (BP1 / BP2) on PEGASUS.
- Refer also to section D3.5.3.8 for details of current disposal mechanisms.
- Contact the Hazardous Waste Co-ordinator for further details.
- Micro-organisms must only be handled in suitable and approved areas.
- No samples or cultures of any biological agent should be sent or taken from the University without proper authorisation.
- On no account should any potentially infection biological materials or samples be transported by Air unless packed by International Air Transport Association (IATA) licensed personnel. This includes transporting within the UK as air freight which may be utilised as a means of delivery. Contact the Hazardous Waste Co-ordinator for further details.

D9 RADIATION SAFETY

D9.1 IONISING RADIATIONS

lonising radiation occurs as either electromagnetic rays (such as X-rays and gamma rays) or particles (such as alpha and beta particles). It occurs naturally (e.g. from the radioactive decay of natural radioactive substances such as radon gas and its decay products) but can also be produced artificially.

Exposure can occur externally, from a radioactive material or a generator such as an X-ray set, or internally, by inhaling or ingesting radioactive substances. Wounds that become contaminated by radioactive material can also cause radioactive exposure. In view of the potential harm that could arise, strict legal requirements impose good standards of training, practice and risk control on all organisations using all sources of ionising radiation.

Prior to any work involving ionising radiation sources, the PI responsible (or their delegated nominee) must carry out a risk assessment and submit this to SWR for review by the University's Radiation Protection Adviser.

University Ionising Radiation Standard University Guidance on Ionising Radiation Ionising Radiations Regulations 2017 (L121 HSE);

Departmental Arrangements for Control of Ionising Radiation (see Spider X)

• **IMPORTANT:** All work must be registered with the University's Radiation Protection Adviser before commencing.

D9.2 NON-IONISING RADIATIONS

Non-ionising radiation (NIR) is the term used to describe the part of the electromagnetic spectrum covering two main regions, namely, optical radiation (ultraviolet (UV), visible and infrared, including lasers) and electromagnetic fields (EMFs) (power frequencies, microwaves and radio frequencies).

Non-lonising Radiation may be defined as electromagnetic radiation with insufficient energy to produce ion pairs in biological matter. For the purpose of this document, this encompasses wavelengths from >100 m in the radiofrequency region to 100 nm in the UV region.

- Extremely low frequency (ELF) radiation: Electromagnetic energy with frequencies between 0 to 300 Hz (including most domestic appliances and power source frequencies).
- Radiofrequency radiation: Electromagnetic energy with frequencies in the range 300 Hz to 300 GHz (inclusive of microwave radiation).
- Microwave radiation: Electromagnetic energy with frequencies between 1 GHz and 300 GHz (including mobile phones, microwave ovens).
- Infra-red radiation: Electromagnetic energy with wavelengths between 700 nm and 1 mm.
- Visible light radiation: Electromagnetic energy with wavelengths from 400 nm to 700 nm.
- Ultra-violet radiation: Electromagnetic energy with wavelengths from 100 nm to 400 nm (including transilluminators, PCR cabinets, sterilising equipment, mercury and xenon lamps for fluorescence microscopes). This covers the regions UV-A 400-315 nm, UV-B 315-280 nm and UV-C 280-100 nm.

It is well established that exposure to high levels of EMFs can give rise to acute ill health effects, which depend on the frequency of the radiation. At low frequencies the effects will be on the central nervous system of the body whilst at high frequencies, heating effects can occur, leading to a rise in body temperature. In reality, these effects are extremely rare and will not occur in most day-to-day work situations.

All non-ionising radiation workers users must be aware of and adhere to the legal standards and university OHS Standard and Guidance – Artificial Optical Radiation (AOR) and/or OHS Standards and Guidance – Electromagnetic Fields (see blue box below for links) for work with the kind of non-ionising radiation they are concerned with. The boundary separating the applicability between the two standards is a frequency of 300 GHz or wavelength of 1 mm.

Prior to any work involving non-ionising radiation sources, the PI responsible (or their delegated nominee) must carry out a risk assessment and submit this to SWR for review by the University's Radiation Protection Adviser. For invisible 3R, class 3B and class 4 lasers or incoherent artificial optical sources with equivalent brightness, prepare a written System of Work (SoW) following the department templates to prioritise the control measures to minimise the risk of exposure to radiation. This written System of Work must be countersigned by the Area-DLPS or DLPS.

All AOR users that are likely to be exposed to radiation exceeding the accessible emission limit (AEL) of a class 1 laser or of a visible class 3R (i.e. 5 mW for 400-700 nm) MUST complete the online Laser Safety Training Course on MyPlace.

All AOR users must be aware of and adhere to the Department Local Rules in this area (see Appendix).

University OHS Standard and Guidance: <u>Artificial Optical Radiation</u> University OHS Standard and Guidance: <u>Electromagnetic Fields</u> Control of Artificial Optical Radiation at Work Regulations (AOR) 2010 and Guidance (<u>HSE</u>). Non-binding further source of guidance: <u>GUIDANCE ON THE SAFE USE OF LASERS IN EDUCATION AND RESEARCH – AUPRO No. 7 (2018)</u>

Physics Department – Template for System of Work, Grabcards, Lectures etc

Departmental Arrangements for Control of Artificial Optical Radiation (see Spider X)

D10 OTHER HAZARDS

D10.1 Confined Spaces

A confined space is a place which is substantially enclosed (though not always entirely), and where serious injury can occur from hazardous substances or conditions within the space or nearby (e.g. lack of oxygen). Examples include storage tanks, reaction vessels, ductwork, enclosed drains, combustion chambers in furnaces and unventilated or poorly ventilated rooms.

A number of people are killed or seriously injured in confined spaces each year in the UK, including those who try to rescue others without proper training and equipment. Dangers can arise in confined spaces because of:

- a lack of oxygen
- poisonous gas, fume or vapour
- liquids and solids which can suddenly fill the space, or release gases into it
- fire and explosions (e.g. from flammable vapours, excess oxygen etc.)
- residues left in tanks, vessels etc., or remaining on internal surfaces which can give off gas, fume or vapour
- hot conditions leading to a dangerous increase in body temperature.

Where an initial risk assessment identifies risks of serious injury, arising from the dangers highlighted above, then the current Confined Spaces Regulations will apply. If this is the case, Physics will comply with the following key duties:

- avoiding entry to confined spaces, e.g. by doing the work from outside;
- if entry to a confined space is unavoidable, devising and following a safe system of work; and

putting in place adequate emergency arrangements before the work starts.

Confined Spaces Regulations 1997; Safe work in confined spaces web-version of leaflet (INDG258 HSE).



The University follows the Occupational Health and Safety Management System advocated by the Health and Safety Executive publication <u>'Successful Health & Safety Management' (HSG65</u>). This provides a robust framework to enable the University community to promote a positive occupational health and safety culture and to effect continual improvement. All staff have a role in contributing to and implementing the system. The HSG65 has recently been revised by the HSE and the "Plan, Do, Check and Act" format is now the suggested way forward for managing Health and Safety in the workplace. It is anticipated that the University will adopt this new format at the next review of its Health and Safety Management system. The components of the new HSG65 are summarised as follows:



Plan

- Where are we now and where do we need to be?
- What do we want to achieve, who will be responsible for what, how will we achieve our aims, and how will we measure our success. This will normally require a policy and a plan to deliver it.
- Decide how we will measure performance.
- Consider fire and other emergencies. Co-operate with anyone who shares our workplace and co-ordinate plans with them.

Addendum 1: University Occupational H&S Management System

• Remember to plan for changes and identify any specific legal requirements will apply.

The University Occupational Health and Safety Policy expresses a clear statement of commitment for managing occupational health and safety and specific objectives. It creates a framework for accountability that is led and adopted by senior management that will contribute to the delivery and success of the University's Strategy.

The organisational structure for managing occupational health and safety is clearly defined in the Policy. Responsibilities are clearly allocated and employees at all levels are involved. The arrangements for communicating information and ensuring competence, training and consultation are also clearly presented.

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•	ldentify our risk profile	Assess the risks, identify what could cause harm in the workplace, who it could harm and how, and what we will do to manage the risk. Decide what the priorities are and identify the biggest risks.
•	Organise your activities to deliver your plan	In particular, aim to: Involve workers and communicate, so that everyone is clear on what is needed and can discuss issues – develop positive attitudes and behaviours. Provide adequate resources, including competent advice where needed.
•	Implement the plan	Decide on the preventive and protective measures needed and put them in place. Provide the right tools and equipment to do the job and keep them maintained. Train and instruct, to ensure everyone is competent to carry out their work. Supervise to make sure that arrangements are followed.

This involves designing, developing and installing suitable proactive management arrangements, workplace precautions and their associated risk control systems, to protect the University community and to promote continual improvement. By implementing the detailed occupational health and safety arrangements, outlined in Level 2 of the Policy, risks to safety, health and business continuity can be identified and either eliminated or controlled.

Check

•	Measure our	Make sure that our plan has been implemented – 'paperwork' on its own is not a good
	performance	performance measure.
		Assess how well the risks are being controlled and if we are achieving our aims.
•	Investigate	the causes of accidents, incidents or near misses

Measuring health and safety performance provides information upon which to judge the implementation and effectiveness of the arrangements for controlling risk. Information is gathered by both active and reactive monitoring systems, at Department, Faculty and University levels. Information from active systems includes, reports of regular safety inspections for premises and equipment, the results of health surveillance, minutes of safety committee meetings, reports of training needs and the significant findings of risk assessments. Information from reactive systems includes, reports of accidents, damage to property or near-misses, analysis of accident trends and reports on weaknesses in performance standards.

Act

•	Review our performance	Learn from accidents and incidents, ill-health data, errors and relevant experience, including from other organisations. Revisit plans, policy documents and risk assessments to see if they need updating.
•	Take action	on lessons learned, including from audit and inspection reports.

Periodic review considers the performance of the system as a whole, plus that of individual elements, to ensure its continuing suitability, adequacy and effectiveness. The Physics Safety Committee and the University systematically review performance following events, such as incidents, accidents, ill-health, changes in activities or organisational structure, in order to consider improvements to management systems and other areas where necessary.

The University occupational health and safety audit programme will provide an independent, critical appraisal of the effectiveness of all elements of Physics's occupational health and safety management arrangements. The outcome will be reported directly to University Senior Managers, the University Occupational Health and Safety Consultative Committee and to the Audit Committee.

Addendum 2: Physics Management and H&S Operational Structures



Addendum 3: H&S Committee Policy

1. Purpose

This policy outlines the function and responsibilities of the Physics Health and Safety Committee.

2. Scope

The Physics Health and Safety Committee forms a key part of the Health and Safety Management System for Physics and applies to all areas of Physics. It acts as a forum for the regular monitoring, reviewing and reporting of

- the effectiveness of the Health and Safety Management arrangements;
- safety operational issues, procedures and systems;
- safety inspections, safety training, accidents and incidents, safety breaches and failings;
- safety culture, awareness and promotions;
- health and safety action plans; and
- emergency management arrangements and plans.

The Physics Committee applies to all areas of Physics that are managed via the University. This includes all:

- Support areas in TIC (Conference & Events, Catering, Maintenance, Cleaning, Security, Estates & Stores);
- Shared facilities (Mechanical and Electrical Workshop, Cleanroom, SEM Facility);
- Research groups/areas (Departmental and Industrial Collaborations under Dept. arrangements);

3. Terms of Reference

- a) The remit of the Physics Health and Safety Committee is to advise and assist Physics Senior Management in the effective discharge of his or her health and safety responsibilities and in this respect:
- b) To promote a positive health and safety culture by, for example:
 - Ensuring effective communication of health and safety information.
 - Disseminating best practice throughout the building and theme areas.
 - Overseeing safety inspections and audits.
- c) To monitor, review and advise on the local arrangements for the implementation of the University's health and safety policies, procedures and codes of practice.
- d) To engage, interact and seek guidance, advice and assistance from the University's Health and Safety Advisors as required.
- e) To engage and advise as appropriate with the Head of Department in matters that are of a serious nature or have a significant impact e.g. serious accidents or incidents, serious breaches in procedures or following negligent actions or behaviours.
- f) To oversee the development and monitor the implementation of the Physics's Occupational Health and Safety Management System and the associated procedures and codes of practice.
- g) To keep under review Physics's compliance with health and safety legislation and University Local Rules.
- h) To monitor new initiatives and grant proposals being proposed by the Physics areas which may have particular health and safety implications or could introduce new hazards or could increase existing hazard levels.
- i) To monitor, review and advise on the induction and specialist training provided for all Physics staff, students, visitors and contractors.
- j) To monitor, review and advise on the inspection and audit programme of Physics's health and safety performance, receive the resultant reports and recommend action as appropriate.
- k) To act as the Physics forum for consultation with staff and students on health and safety matters
- To ensure that there is proper coordination, cooperation and communication with other users of shared and/ or adjacent space, for example through the consideration of reports from building user groups.
- m) To monitor, review and advise on the Health and Safety Risk Register, which sets out the principal hazards and risks present in the department.
- n) To monitor and review the arrangements for dealing with emergencies and the provisions for emergency evacuations, evacuation drills, first aid and reporting accidents, incidents and non- compliances.

- o) To receive reports of accidents, near misses and work-related health problems and to monitor investigative and follow up action as appropriate.
- p) To monitor trends in occupational ill health, near misses, accidents and dangerous occurrences.
- q) To ensure that the recommendations of inspections and audits carried out by the Occupational Health and Safety Departments and externally by the Health and Safety Executive (HSE) and other regulatory authorities are implemented.

4. Membership

The Committee should be as compact as possible but compatible with the adequate representation of the interests of all operational management, research and support areas.

The membership is determined by the Head of Department and will be reviewed periodically. Initially the Committee shall comprise of the following:

Departmental Safety Convenor (Chair) Head of Department and/or Department Manager Laser Protection Supervisor and/or (4x) Deputy Laser Protection Supervisors 2 x Radiation Protection Supervisors and/or (2x) Deputy Radiation Protection Supervisors Chemical and Biological Adviser and/or Deputy Chemical and Biological Adviser (GM) 1 x Deputy Chemical 4 x Area Safety Convenors from the themed research areas 1 x Disability Contact and/or Deputy Disability Contact 1 x SWR Representative

Others

Ex-Officio Members: Head of Occupational Health, Safety and Well-Being Other advisors may be invited to attend on an ad hoc basis. *Minute Secretary*

NOTES:

- a) Staff with specialist health and safety duties and/or responsibilities will sit on the Committee and report any safety maters of relevance to the Committee via the group Health & Safety Representative or via the Departmental Safety Convenor. They will be invited to attend meetings as and when required.
- b) The Physics Safety Representatives listed below are part of the Physics Safety Committee but are not require to attend meetings unless they specifically wish to or are specifically requested to attend. They will be included in all correspondence and will be asked to provide a brief safety report on any health and safety matters of particular relevance or interest.

5. Meetings

The Physics Health and Safety Committee will meet three times a year and may meet more frequently at the discretion of the Chair or Senior Management

6. Quorum

The quorum shall be the Chair and six other members.

7. Reporting

The Physics Health and Safety Committee shall report:

- After each meeting by making a copy of the minutes available to all staff/students available on the Health and Safety folder on `l` drive.
- Annually through the Departmental Safety Convenor to the Head of Department.
- To SWR annually on health and safety performance within the department.

For further information, please refer to the Physics Safety Committee Section on the safety `I` drive, contact the Deputy Safety Convenor or email <u>safety@phys.strath.ac.uk</u>

Addendum 4: PHYSICS Health and Safety Responsibilities

Department of PHYSICS

Principal Investigators

Name	Area	Job Title	Extension	Email
Please refer to Gabrielle Weir	Department of physics	Departmental Manager	3386	gabrielle.weir@strath.ac.uk
Please refer to Susan Anderson	Research & Knowledge Exchange Services	Research support officer	5808	susan.anderson@strath.ac.uk

Title	Named Person	Telephone Extension	Email Address	Person providing cover in event of absence
Head of Department Prof S. Kuhr		3364	stefan.kuhr@strath.ac.uk	Prof R. Martin (r.w.martin@strath.ac.uk)
Principal Investigator(s)	Please refer to Mrs G. Weir Department Manager	3267	gabrielle.weir@strath.ac.uk	Mrs C. Cheshire (cath.cheshire@strath.ac.uk
Departmental Safety Convener	Mr J. Gillan	3052 (07816609171)	john.gillan@strath.ac.uk	Prof S. Kuhr (stefan.kuhr@strath.ac.uk)
Area Safety Convenors	Please refer to Add	dendum 5		
	Prof S. Kuhr HoD	3364	stefan.kuhr@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
	Mr J. Gillan Acting DSC	3051	john.gillan@strath.ac.uk	Prof S. Kuhr (stefan.kuhr@strath.ac.uk)
Departmental Safety Committee	Dr Y. Chen Biological & Chemical Protection Supervisor	3087	y.chen@strath.ac.uk	Dr.J.McGilligan (james.mcgilligan@strath.ac.uk)
	Mr J. Revie Hazardous Waste Co-ordinator	3263	john.revie@strath.ac.uk	Dr Y. Chen (y.chen@strath.ac.uk)
	Prof J. Pritchard Department Laser Protection Supervisor	3120	jonathan.pritchard@strath.ac.uk	Dr K. Wilson Dr K. Lagoudakis Dr W. Li Prof A.Kemp
	Dr M. Wiggins Ionizing Radiation Protection Supervisor	5785	mark.wiggins@strath.ac.uk	Prof Kevin Ronald (k.ronald@strath.ac.uk)
	Mr R. Wright University Radiation Protection Officer	4673	richard.wright@strath.ac.uk	ТВС
Departmental Safety Committee	To be confirmed IOP Research Team Leader			Dr N. Laurand (nicolas.laurand@strath.ac.uk)
	Named Person	Telephone Extension	Email Address	Person providing cover in event of absence
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	Dr Y. Chen Nanoscience group	3059	y.chen@strath.ac.uk	Dr K.Lagoudakis (k.lagoudakis@strath.ac.uk)
	Dr K. Lagoudakis SSD group	3464	k.lagoudakis@strath.ac.uk	Dr P. Edwards (paul.edwards@strath.ac.uk)
	Dr H. Vaughan Teaching	3309	helen.vaughan@strath.ac.uk	TBC
Note: Roles appear in alphabetical order from this point				
Biological & Chemical Safety Supervisor	Dr Y. Chen	3087	y.chen@strath.ac.uk	Dr J.McGilligan
Deputy Chemical Safety Supervisor	Dr J. McGilligan	5789	james.mcgilligan@strath.ac.uk	Dr Y. Chen (y.chen@strath.ac.uk)
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COSHH Assessment Co- ordinator	Dr Y. Chen	3087	y.chen@strath.ac.uk	Mr J.Gillan
Fume Cupboard and Microbiological Safety Cabinet Coordinator	Dr Y. Chen	3087	y.chen@strath.ac.uk	Mr J. Gillan
Disability Contact	Dr H. Vaughan	3309	helen.vaughan@strath.ac.uk	Ms Jacqueline Gordon (jacqueline.gordon@strath.ac.uk)
Display Screen Equipment Assessor(s)	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
DSEAR Co- ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
Estates Helpdesk Liaison Person	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
Fire Safety Co- ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mr J. McFadden
Fire Safety Assistants (1) Level 1, John Anderson (JA)	Mr L. Hannah	4715	lewis.hannah@strath.ac.uk	Mr S. Ross (stephen.ross@strath.ac.uk)
(2) Level 2, (JA)	Mr T. McCanny	5329	thomas.mccanny@strath.ac.uk	Dr J. Bruckbauer (jochen.bruckbauer@strath.ac.uk)
(3) Level 3, JA	Prof P. Griffin	5813	paul.griffin@strath.ac.uk	Dr S. Ingleby (stuart.ingleby@strath.ac.uk)
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(7) Level 7, JA	Prof B.McNeil	4727	b.w.j.mcneil@strath.ac.uk	To be confirmed
(8) Level 8, JA	Mr T. Briggs	3376	timothy.briggs@strath.ac.uk	Dr M. King (m.king@strath.ac.uk)
(1) Level 1, TIC	Dr C. Donaldson	4812	craig.donaldson@strath.ac.uk	Dr P. MacInnes (philip.macinnes@strath.ac.uk)
(2) Level 5, TIC	S. Kelly	4120	sharon.kelly@strath.ac.uk	Dr C.Donaldson @strath.ac.uk
(3) Level 7, TIC	Mr R. Roger		Ronnie.roger@strath.ac.uk	Dr B. Guilhabert benoit.guilhabert@strath.ac.uk

First Aiders	Please refer to signage next to lifts			
Gas Safety Co- ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
Hazardous Waste Co-ordinator	Mr J. Revie	3263	(john.revie@strath.ac.uk)	Dr Y. Chen (y.chen@strath.ac.uk)
LEV Testing Co- ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
Lifting Operations Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir
Manual Handling Assessor	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir
Mental Health First Aider	Mrs G. Weir	3267	gabrielle.weir@strath.ac.uk	Dr B. Hourahine (benjamin.hourahine@strath.ac.uk)
MORR Co- ordinator	Mrs G. Weir	3267	gabrielle.weir@strath.ac.uk	
Overseas Business Co- ordinator	Dr F. Papoff	3178	f.papoff@strath.ac.uk	Dr Y. Chen (y.chen@strath.ac.uk)
Placement Organiser	Mr T. Briggs	3376	timothy.briggs@strath.ac.uk	Leanore Ferrans (Leanore.ferrans@strath.ac.uk)
Portable Appliance Testing (PAT) Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mr G. Keegan (g.keegan@strath.ac.uk)
PPE/RPE Co- ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir
PUWER Co- ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir
Laser Protection Supervisor	Prof J. Pritchard	5813	jonathan.pritchard@strath.ac.uk	Prof J. Pritchard (jonathan.pritchard@strath.ac.uk)
Deputy Laser Protection Supervisor (EQOP)	Dr K. Wilson	3363	kali.wilson@strath.ac.uk	Prof J. Pritchard (jonathan.pritchard@strath.ac.uk)
Deputy Laser Protection Supervisor (Nanoscience)	Dr K. Lagoudakis	3464	k.lagoudakis@strath.ac.uk	Prof J. Pritchard (jonathan.pritchard@strath.ac.uk)
Deputy Laser Protection Supervisor (SILIS)	Dr W. Li	5785	wentao.li@strath.ac.uk	Prof J. Pritchard (jonathan.pritchard@strath.ac.uk)
Deputy Laser Protection Supervisor (IOP)	Dr A. Kemp	4901	alan.kemp@strath.ac.uk	Prof J. Pritchard (jonathan.pritchard@strath.ac.uk)
Ionizing Radiation Protection Supervisor (JA)	Dr M. Wiggins	5785	mark.wiggins@strath.ac.uk	Prof K. Ronald (k.ronald@strath.ac.uk)
Ionizing Radiation Protection Supervisor (TIC)	Prof K. Ronald	3484	k.ronald@strath.ac.uk	Mr M. Wiggins (mark.wiggins@strath.ac.uk)
University Supervising Officer	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mr J. Revie (john.revie@strath.ac.uk)
Addendum 5: PHYSICS Area Safety Conveners

Name	Area	Job Title	Ext. No.	Email
Gian-Luca Oppo	CNQO Group	Professor	3761	g.l.oppo@strath.ac.uk
John McFadden	Electronics Workshop	Technician	3257	john.mcfadden@strath.ac.uk
Paul Griffin	EQOP	Senior Lecturer	5813	paul.griffin@strath.ac.uk
Elmar Haller	EQOP	Senior Lecturer	5813/5749	elmar.haller@strath.ac.uk
Jonathan Pritchard	EQOP	Reader	5813	jonathan.pritchard@strath.ac.uk
Thorsten Ackemann	EQOP	Professor	3079	thorsten.ackemann@strath.ac.uk
Erling Riis	EQOP	Professor	3490	e.riis@strath.ac.uk
Aidan Arnold	EQOP	Reader	3357/3371	aidan.arnold@strath.ac.uk
Stefan Kuhr	EQOP	Professor (HoD)	3364	stefan.kuhr@strath.ac.uk
David McKee	Marine Physics	Reader	3068	david.mckee@strath.ac.uk
Brian Patton	Nanobiophotonics	Senior Lecturer	3474	Brian.patton@strath.ac.uk
Yu Chen	Photophysics	Reader	3087	y.chen@strath.ac.uk
John Revie	BCP	Technician	3263	john.revie@strath.ac.uk
Mark Wiggins	SILIS	Senior Research Fellow	5785	mark.wiggins@strath.ac.uk
Wentao Li	SILIS	Research Fellow	5785	wentao.li@strath.ac.uk
Paul Edwards	Semiconductor Physics	Senior Research Fellow	4369/3458	paul.edwards@strath.ac.uk
Jochen Bruckbauer	Semiconductor Physics	Research Fellow	3480	jochen.bruckbauer@strath.ac.uk
Ken Muir	Teaching	Technician	3154	kenneth.muir@strath.ac.uk
Craig Robertson	ABP	Research Fellow	5818	craig.robertson@strath.ac.uk
Craig Donaldson	ABP	Research Fellow	4812	craig.donaldson@strath.ac.uk
Kevin Ronald	ABP	Professor	3484	k.ronald@strath.ac.uk
lan Watson	IOP	Research Team Leader	4597	i.m.watson@strath.ac.uk
Nicolas Laurand	IOP	Research Fellow	4109	nicolas.laurand@strath.ac.uk
Alan Kemp	IOP	Professor	4901	alan.kemp@strath.ac.uk
Stephen Ross	Mechanical Workshop	Technician	4715/3053	stephen.ross@strath.ac.uk
Gabrielle Weir	Admin Office	Departmental Manager	3386	gabrielle.weir@strath.ac.uk

Addendum 6: Web Links to Relevant webpages and information

OHS Standard - Artificial Optical Radiation

<u> OHS Standard - Biological Safety</u>
OHS Standard - Display Screen Equipment
OHS Standard - Electromagnetic Fields
OHS Standard - Fire Safety
<u>OHS Standard - First Aid</u>
OHS Standard - Occupational Hygiene
OHS Standard - Management of Occupational Road Risks
OHS Standard - Manual Handling
OHS Standard - No Smoking
OHS Standard - Noise
OHS Standard - Ionising Radiation
OHS Standard – New and Expectant Mother
Agile Working Policy
Data Protection Policy and Guidance
First Aid Information
<u> Guidance – Accepting school pupils on Work Experience</u>
Guidance - Control of Substance Hazardous to Health
<u>Guidance - Compressed Gas Safety</u>
Guidance - Engaging External Service Providers
Guidance - Managing Workplace Environment Requirements
Guidance - Organising and Hosting Safe Events
Guidance - Safety Inspections.
Guidance - Safety Standards Expected from Service Providers
Guidance - The retention of Occupational Health and Safety Records
Guidance - Area Requirements for the use of Electromagnetic field Generating Equipment
Guidelines - Home Working
Local Rule - Lead
Local Rule - Control of Substances Hazardous to Healthy (COSHH)
Local Rule - Cytotoxic Substances and Agents
Local Rule - Electrical Safety
Local Rule - Engaging External Service Providers
Local Rule - The Safe Use of Nanomaterials
Local Rule - The Safety Requirements for the Placement of Students
Local Rule - Travel and Working off Campus
Local Rule - Vibration at Work
Local Rule - Dangerous Substances and Explosive Atmospheres(DSEAR) Local
Local Rule - Personal Protective Equipment
Local Rule - Control of Non-Ionising Radiation
Local Rule - Installation and Use of Local Exhaust Ventilation
(LEV) Local Rule - Occupational Health
Local Rule - Work at Height
Occupational Health & Wellbeing - Stress and Mental Health
Occupational Health and Safety Policy
Personal Safety Guide

Placement of Students – Guidance for Students **Risk and Resilience Management** SWR Webpages Stress – Information for Employees DSEAR Aide Memoire for Completing Form S30 **DSEAR Assessment Form S30** eRisk Assessment Form S19 - Equipment running out of hours or unattended Safe360 Safety Incident Reporting and Investigation System Training SWR Safety Induction Forms (S27 & S28) Student Exchange Pre-Departure Checklist (Form S23) University of Strathclyde - DAT Booking - Display Screen Equipment On-Line Awareness - Registration University of Strathclyde - DAT Booking - Principles and Practice of Risk Assessment (Online) University of Strathclyde - DAT Booking - Display Screen Equipment On-Line Awareness - Registration SWR Training Courses (OHS Part 1 online & other courses) Staff InductionAccess to University Premises Policy A-Z of Waste Disposal & Recycling Disposal Sustainable Strathclyde **Clinical & Biological Waste** Hazardous/Special Waste Space Planning Works Management Vacating Room Policy **Conference and Events** HR Website: University Staff Induction Mental Health and Wellbeing Support **Nourish Catering Disability Support Occupational Health & Wellbeing** University Finance Office – Insurance Arrangements Chemical classification and labelling (HSE) **Chemical Weapons Act 1996** Confined Spaces Regulations 1997; Control back-pain risks from whole-body vibration (INDG242 (rev1) HSE). Control of Lead at Work (L132, HSE). Control of Substances Hazardous to Health (L5 HSE); COSHH - Schedule 6 Medical Surveillance Control the risks from hand-arm vibration (INDG 175 HSE); Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) 2002 (L138 HSE); **DSEAR - HSE webpages** EH40 - Workplace Exposure Limits List (HSE) **Electrical Safety Standards - HSE** Fit testing basics - HSE Website; Five Steps to Risk Assessment (L163 HSE); Guidance for Employers on the Control of Artificial Optical Radiation at Work Regulations (AOR) 2010 (HSE). Guidance on RPE Fitting (HSE, INDG479) Hand-arm vibration – Advice for employees (INDG296 HSE); Health and Safety (Display Screen Equipment) Regulations 1992 (L26 HSE); Homeworking (INDG226 HSE) Ionising Radiations Regulations 1999 (L121 HSE); Lead and you (INDG305, HSE);

Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

Maintaining Portable Electric Equipment (HSE HSG107)

Maintaining Portable Electric Equipment in Low Risk Environments (HSE INDG236)

Management of Health and Safety at Work (HSE)

<u>Manual handling at work – a brief guide (INDG143 HSE)</u>.

Manual Handling Operations Regulations 1992 (L23 HSE);

Memorandum of Guidance on the Electricity at Work Regulations 1989 (HRS25 HSE);

Misuse of Drugs Regulations, 2001

New and Expectant Mothers - HSE

Poisons Act, 1972

Poisons Rules 1982

Precursor Chemical Licensing

Pressure Systems - HSE webpages

Providing and Using Work Equipment – A Brief Guide (HSE, INDG291)

Respiratory protective equipment at work: (HSG53 HSE).

Safe Handling of Cytotoxic Drugs - HSE

Safe Use of Work Equipment (L22 HSE)

Safe work in confined spaces web-version of leaflet (INDG258 HSE).

Safety of Pressure Systems (L122 HSE)

Schedule 1, 2 and 3 chemicals.

Schedule 3 of the Misuse of Drugs Regulations, 2001

Schedule 5 of the Anti-Terrorism Crime and Security Act 2001

Smoking, Health and Social Care (Scotland) Act 2005.

Stress - HSE webpages

'Successful Health & Safety Management' (HSG65)

The Approved List of Biological Agents (HSE, 208).

The Genetically Modified Organisms (Contained Use) Regulations 2014

The Personal Protective Equipment at Work Regulations 1992 (L25 HSE)

The Work at Height Regulations 2005 (as amended) – A brief guide (INDG401 HSE)

Using Nanomaterials at Work (HSE, HSG272) at Work

What the Law says about young people at work (HSE)

Work with Display Screen Equipment (L26 HSE)

Working alone - health and safety guidance on the risks of lone working (INDG73 HSE).

Working with substances hazardous to health (INDG136 HSE)

Working with Substances Hazardous to Health (INDG136 HSE)

Workplace Health, Safety & Welfare - A short guide for Managers (INDG 122 HSE).

Workplace Transport Safety – An overview (INDG 199 HSE)

Written Schemes of Examination (INDG178 HSE)

BCGA Code of practice 44 – The Storage of Gas Cylinders 2016

Food Standards Scotland

Foreign and Commonwealth Office (FCO)

<u>Handle Gas Cylinders Safely (TIS No.12:2005)</u> (BCGA) plus other Technical Information Sheets International Agency for Research on Cancer - Classification Cytotoxic Agents

international Agency for Research on Cancer - Clas

CHIP Regulation CLP Regulation

DEPARTMENT OF PHYSICS

Arrangements for the Control of Chemicals (draft)

The following is a summary of arrangements for the work with chemicals as applicable to the Department of Physics. All work has also to confirm with the regulations by the university laid down in University of Strathclyde Occupational Health and Safety Policy (<u>_https://www.strath.ac.uk/safetyservices/documentationforms/</u>) as well as with the relevant legislation.

Head of Department

Date

1. Chemical Safety Supervisor (CSS)

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Chemical Safety Supervisor (CSS) are appointed by the Head of Department and will assist him/her by monitoring that all work with chemicals within the department is carried out to the appropriate standard and that these safety regulations are followed. The John Anderson Building CSS is:

Dr Yu Chen, JA613, Tel. 3087, y.chen@strath.ac.uk .

The TIC Building CSS is:

TBA

The CSS will also coordinate the interaction between chemical users/investigators within the Department of Physics and the Safety, Health and Wellbeing department (SHaW) / CSA and, if necessary, other organisations outside the department.

In the absence of each CSA, the respective nominated deputies are:

Dr James McGilligan, JA612, Tel. 5789, james.mcgilligan@strath.ac.uk Dr Brian Patton, JA605, Tel. 3474, brian.patton@strath.ac.uk

2. Chemical Safety Adviser (CSA)

The responsibility of the CSA is to give advice on chemical health and safety matters. This includes maintaining up to date guidance, managing chemical safety to ensure legal compliance within the university and delivering training.

University CSA is, Ms. Katrina Rae, Tel. 5739, c.k.rae@strath.ac.uk

In newly arising matters contact with SHaW and/or the CSA should be undertaken via the CSS unless there is an emergency.

3. Duties of Principal Investigators and Risk Assessments

Each Principal Investigator (PI) has the responsibility of conducting safely all work involving chemicals. It is the duty of the PI/supervisors to:

- 1. Arrange for suitable training for new chemical workers before commencement of work.
- Perform a risk assessment (RA) and COSHH assessment (COSHH), and set-up a corresponding method of work (MoW) for each new experiment or a significant alteration to an existing one. Update this RA, COSHH and MoW annually.
- 3. Assess whether a DSEAR risk assessment in the University S30 template is necessary for storage and use of the substance(s) involved.
- 4. Give guidance on good safety during the day-to-day contact with students and research staff.
- 5. Maintain chemical inventories, expected to be displayed inside labs, and provide relevant personal protective equipment (PPE). Appropriate PPE must be specified explicitly within COSHH documents.
- 6. Ensure spills kits available in labs and emergency response procedure in place.
- 7. The risk assessments, COSHH and the corresponding methods of work are approved by the PIs before commencement of work. RA, COSHH, DSEAR documents and MoWs are signed by the users and then kept available directly at the experiment as well as filed at group level and on the i: drive. In the case of work with chemicals that is an ionising radiation source, the RA needs to be countersigned by the Radiation Protection Supervisor (Dr Mark Wiggins, JA723, Tel. 5785, <u>mark.wiggins@strath.ac.uk</u>).

4. Chemical Users

4.1 Internal Chemical Users

All chemical users need to be trained and authorised by PI/supervisors. Usage of chemicals in individual experiments requires the signing of the relevant MoW, RA and COSHH. This applies also for undergraduate and MSc project students. Only trained personnel are allowed to carry out chemical work.

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PI/supervisors must provide appropriate PPE, such as gloves and goggles, for personnel handling hazardous chemicals, and ensure they are trained in safe handling procedures.

4.2 Visiting Chemical Workers

PIs must ensure that visiting chemical workers have received suitable training – either they provide documentary evidence from their home institution or they undertake the relevant Strathclyde training. Visiting chemical workers need to sign the relevant MoW, RA and COSHH before commencing any work involving chemicals.

Any chemicals brought by visitors to the lab need to be registered in chemical inventory. Related existing RA and COSHH need to be updated or new risk assessments to be performed when new chemicals to be used by the visiting chemical workers.

5. Chemical Purchasing, Delivery, and Inventory

- PI is responsible for the approval of purchasing new chemicals, assessing potential hazards, determining appropriate handing, and storage requirement, and performing COSHH assessment before procurement.
- Ensure that chemicals are purchased from reputable suppliers, properly labelled, and accompanied by up=todate Safety Date Sheet (SDS).
- Chemicals (Hazard Information and Packaging for Supply) regulations (CHIP), which were replaced by the Classification, Labelling and Packaging (CLP) regulation in 2009, provided guidelines for the classification, packaging, and labelling of hazardous chemicals. Compliance with CLP regulations ensures that chemicals are safely packaged, labelled and delivered to end-users.
- Inspect chemical deliveries upon arrival to verify accuracy, integrity, and compliance with safety standard. Reject any shipments that do not meet established criteria or exhibit signs of damage or leakage.
- Each group needs to maintain an up-to-date inventory of all chemicals on-site. Regularly review and audit the inventory to identify obsolete or surplus chemicals for proper disposal.
- Lab door safety signage should correspond to the hazards present within the area, such as flammables, corrosive, toxins, compressed gas, etc, incorporate the door safety template.
- Complete corresponding DSEAR from and store on IDrive.

6. Guidance on Handling Chemicals

- 6.1 General Guidance
 - All chemical users should familiarize themselves with the properties, hazards, and safe handling procedures for each chemical they work with. Consult Safety Data Sheets (SDS) provided by manufactures or other reliable sources for detailed information. COSHH risk assessment can only be completed when a substance's SDS has been captured on the COSHH database.
 - To minimize the risk of contamination and ensure a safe working environment, it is prohibited to leave personal items unattended in laboratory areas.
 - Cloth chairs and tools pose a significant safety hazard in wet laboratory due to their absorbent nature and potential for contamination, therefore they are prohibited in these laboratories.

6.2 Personal Protective Equipment (PPE)

- Wear appropriate PPE, including safety goggles, lab coats, gloves, to protect against chemical splashes, spills, and other hazards. Ensure that PPE is properly fitted, clean, and in good condition.
- Note that the department has a no glove policy in corridors.
- Lab coats should be made of appropriate materials that provide protection against potential chemical spills and splashes. Coats should be of an appropriate size and fit to allow for ease of movement and to prevent snagging on equipment or surfaces.
- Lab coats should be cleaned regularly to remove chemical residues and contaminants. Inspect lab coats regularly for signs of wear and tear and replace them if they become damaged or compromised.

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6.3 Handling and Transfer

- Use appropriate tools and equipment, such as pipettes, spatulas, and fume hoods, for handling and transferring chemicals. Avoids direct contact with chemicals whenever possible.
- When transferring liquids, use secondary containment trays or spill kits to prevent spills and leaks.
- Always label containers with the full, non-abbreviated name of the chemical and any relevant hazard information.
- Never pipette by mouth or smell chemicals directly. Use mechanical pipetting devices and avoid inhaling vapours or fumes.

6.4 Laboratory Waste Disposal

- Use color-coded bins to segregate laboratory waste according to its type and composition.
- Dispose plastic waste, such as pipette tips, plastic containers, centrifuge tubes, sample holders and packaging materials, in the green bin designated for plastic.
- Place glass waste, including glassware such as beakers, test tubes, and bottles, in the blue bin designated for glass waste.
- Dispose of used laboratory disposable PPE, tissues, hand tissues, gloves in the yellow bin designated for cleaning waste.
- Segregate hazardous or chemically contaminated waste in designated containers with labelling for appropriate treatment or disposal according to regulatory requirements.

7. Chemical Storage

PI/supervisors are responsible for the chemical storage in the Group.

7.1 General Storage Guidelines

- Store all chemicals in a well-ventilated, dry, and temperature-controlled environment to prevent degradation and ensure stability.
- Lock highly toxic substance in secure a cabinet and establish an access policy to prevent unauthorized access.
- Maintain an inventory of stored chemicals, including information on quantities, location, and hazards, to facilitate emergency response and regulatory compliance. Each chemical cabinet should have its inventory on the door.
- Regularly inspect chemical storage cabinets for signs of deterioration, leaks, or other hazards, and promptly
 address any issues identified.
- Train personnel in safe chemical handling, storage, and emergency response procedures to minimize the risk of accidents and injuries.

7.2 Segregation of Chemicals

- Chemicals should be segregated based on their compatibility to prevent reactions that could lead to fires, explosion, or the release of toxic gases.
- Store chemicals in separate cabinets according to their chemical properties, such as flammability, reactivity, and toxicity.
- Use signage and labelling to clearly identify storage cabinets/areas and indicate the types of chemicals stored within them. Relevant hazard indications must also be provided on lab doors.

7.3 Storage of Flammable Chemicals

- Flammable chemicals should be stored in approved containers and cabinets designed to minimize the risk of ignition.
- Store flammable liquids in containers with tight-fitting lids to prevent the release of vapours.
- Use designated flammable storage cabinets that are fire-rated and equipped with proper ventilation to dissipate any build-up of flammable vapours.
- Keep flammable chemicals away from heat sources, open flames, and sources of ignition.
- Regularly inspect flammable storage areas for leaks, spills, or other potential hazards.

7.4 Storage of Oxidizers

- Oxidizers should be stored separately from flammable materials and other reactive substances to prevent the risk of fire or explosion.
- Store oxidizers in well-ventilated areas away from heat sources and combustible materials.
- Use appropriate containers and packaging to prevent contamination and minimize the risk of spontaneous combustion.

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• Ensure that oxidizers are properly labelled and stored in accordance with manufacturer recommendations and regulatory requirements.

7.5 Storage of Acids

- Acids should be stored in acid-resistant containers made of materials such as glass, polyethylene, following manufacturer's guidance.
- Store acids in a dedicated acid storage cabinet or area with secondary containment to prevent spills and leaks from spreading.
- Keep acids away from incompatible materials, such as bases or reactive metals, to avoid the risk of hazardous chemical reactions.

By implementing these detailed guidelines for chemical storage, including segregation and specific requirements for flammable chemicals, oxidizers, acids, and other hazardous substances, organizations can reduce the risk of accidents, protect personnel and the environment, and ensure compliance with regulatory requirements.

8. Chemical transport

When transporting chemicals between labs or buildings, additional precautions are necessary to ensure the safe handling and containment of hazardous substances.

- Prioritize the use of designated transport containers or carts specifically designed to chemical transportation.
- Ensure that chemical containers are properly labelled with the name of the chemical, its hazards, and any necessary safety precautions.
- Use secondary containment, such as spill trays or bins, to contain spills or leaks in the event of a container failure.
 Minimize the quantity of chemicals being transported at any given time to reduce the risk of accidents and
- facilitate safe handling.Avoid transporting incompatible chemicals together to prevent the risk of hazardous chemical reactions during
- real transport.
 Plan transport.
- Frair transportation routes to minimize exposure to crowded or ingin-trans areas, and avoid routes that involve stairs or other obstacles that could increase the risk of accidents if possible.
 Describe approximate DDE much as a large and a scalar for a sense of a scalar for a s
- Provide appropriate PPE, such as gloves and goggles, for personnel involved in transporting chemicals, and ensure they are trained in safe handling procedures.
- In the event of a spill or emergency during transport, follow established procedures for containment, clean up, and notification of appropriate personnel, including emergency responders if necessary.

9. Chemical disposal

PI/supervisors are responsible for the chemical disposal in the Group.

- Chemical waste must be disposed of in accordance with local and national regulations governing hazardous waste management.
- Chemical waste must be disposed of via the group safety coordinators and departmental chemistry safety contacts For the John Anderson building, Mr. John Revie, JA300, john.revie@strath.ac.uk.
- For groups based in TIC, usage of the building-specific disposal arrangements is strongly advised. TICstores team on TIC level 2 normally receives waste on Friday afternoons. Disposals should be initiated by e-mail submission of an s15 form to <u>TIC-stores@strath.ac.uk</u>.
- Designate specific waste disposal areas within the laboratory or nearby facilities for collecting different types of chemical waste, including solid, liquid, and hazardous materials.
- Provide clearly labelled waste containers for different categories of chemical waste, such as organic solvents, acids, bases, heavy metals, and non-hazardous waste.
- Segregate incompatible chemical wastes to prevent reactions and ensure safe handling during disposal.
- Train chemical workers in proper chemical waste disposal procedures and the use of appropriate PPE.
 Implement a system for tracking and documenting chemical waste generation, disposal, and disposal methods to
- ensure compliance with regulatory requirements and facilitate auditing and reporting.
 Periodically review and update disposal procedures and protocols in response to changes in regulations, best practices, or laboratory activities.
- Minimize the generation of chemical waste through proper planning, inventory management, and the use of alternative methods or materials whenever feasible.
- Encourage the adoption of green chemistry principles and practices to reduce the environmental impact of laboratory activities and promote sustainability in chemical waste management.

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10. Safe Use of Lab Equipment

- PI/Supervisor is responsible for providing training for the safe usage of lab equipment and maintaining the lab equipment in a safe working condition.
- Follow standard operating procedures and manufacturer guidelines for safe operation of equipment.
- Wear appropriate PPE when operating laboratory equipment.
- Report any equipment malfunctions, damage, or safety concerns to laboratory management immediately for inspection and repair.

10.1 Fume Cupboard

- All chemical experiments involving volatile, toxic, or noxious substances must be conducted inside a properly functioning fume cupboard.
- Ensure that the fume cupboard is inspected regularly to confirm adequate airflow and proper operation of the exhaust system.
- Keep the sash of the fume cupboard closed as much as possible during experiments to maintain containment and prevent the escape of hazardous vapours.
- Do not obstruct airflow by overfilling the workspace or blocking the rear baffle of the fume cupboard.
- In case of malfunction or unusual odours, cease experiments immediately and notify laboratory management for inspection and repair.
- Fume hoods should be cleaned at least one every year or as required to ensure optimal performance and cleanliness.
- Maintain records of chemical usage for each fume cupboard.
- Remove all chemicals from the fume cupboard after completing experiments to prevent the builup of hazardous materials and ensure proper ventilation.

10.2 Hotplate

- Before using the oven, ensure it for any signs of damage, corrosion, or malfunction. Do not use if any defects are found.
- Follow manufacturer instructions for proper operation, including setting temperature, using appropriate containers, and using a heat-resistant pad or mat.
- Use caution when handling hot plates, as surfaces can become extremely hot during operation. Always use insulated gloves or tongs to manipulate containers.
- Ensure that the hot plate is placed on a stable, heat-resistant surface away from flammable materials and source of ignition.
- Turn off the hotplate when it is not in use. Be cautious to not overheat materials.

10.3 Fridges/Freezers

- Never store food or drink for human consumption in any refrigerator or freezer used in a laboratory.
- Label all chemical reagents and samples stored in the fridge/freezer with appropriate hazard information and handling precautions.
- Store chemicals in sealed, lead-proof containers to prevent spills and cross-contamination.
- Store only chemicals in amounts needed over a reasonable amount of time. Compounds stored in refrigerators
 may be especially prone to degradation if not properly stored and sealed.
- Keep incompatible chemicals segregated to avoid accidental reactions.
- Regularly inspect the fridge/freezer for signs of leaks, damage, or malfunction, and report any issues to laboratory management promptly.
- In the event of a power outage or malfunction, follow established protocols for transferring sensitive samples to alternative storage or taking appropriate action to prevent spoilage and degradation.

10.4 Working with Sharps

- Use care if working with sharps. Always cut away from body parts.
- Check glass and ceramic items for cracks, sharp edges and loose chippings.
- All sharp items are to be disposed of immediately after use into the "sharp item disposal bin" provided or put it into a marked closed box if needed to be reused so that no accidental exposure is possible.
- Large amounts of glass should be securely put in a closed box, marked "Attention, glass!" and safe disposal arranged with John Revie.

11. Compressed Gas Safety

• Perform risk assessment of usage of compressed gas cylinders and complete a DSEAR form

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- Users should be familiar with the University Guidance on Compressed Gas Safety.
- All users must attend the following University training courses: Using Gas Cylinders Safely within Universities (Online) and Compressed Gas Safety Practical and read and sign related RA prior to commencing work with compressed gasses.
- All gas cylinders need to be securely fixed and regulators checked prior to each use.
- Labs containing cylinders should display an appropriate warning sign on the entrance door.

12. Cryogenic Liquids

- PI/supervisor is responsible for training users on handling procedures, perform risk assessment, complete DSEAR form and emergency response protocols.
- Conduct regular safety drills and maintain up-to-date training records.

12.1 Handling Cryogenic Liquids

- Wear appropriate PPE to protect against cold burns and splashes.
- Use insulated containers and handle liquids with caution to prevent spills.
- Avoid skin contact and use approved equipment for safe handling.

12.2 Storage of Cryogenic Liquids

- Store in well-ventilated areas with proper labelling.
- Use dedicated storage vessels and follow manufacturer guidelines.
- Restrict access to trained personnel only.

13. Working with Biological Materials

- PI/supervisor is responsible for performing risk assessment to identify potential hazards associated with the biological materials being handled, and providing training to personnel on the risks associated with working with biological materials and the proper use of PPE and containment equipment.
- Personnel working with biological agents should complete online BP1 registration form. Personnel working with animal or human blood, blood products, tissue or both fluids should complete BP2 online registration form. All uses must read and sign related RA, COSSH, MoW before working with biological materials.

13.1 PPE

- Wear appropriate PPE to protect against exposure to biological materials.
- Use respiratory protection when working with aerosol-generating procedures or in environments with airborne contaminants.

13.2 Engineering Controls

- Implement engineering controls such as biological safety cabinets (BSCs) or containment devices to minimize the risk of exposure and containment breaches.
- Ensure that BSCs are properly maintained, certifies, and used correctly according to established protocols.

13.3 Safe Handling Procedures

- Follow established protocols for the safe handling, storage, and disposal of biological materials.
- Minimize the generation of aerosols and splashes by using appropriate techniques and equipment, such as • pipetting aids and centrifuge safety cups.

Label all containers holding biological materials with the appropriate biohazard symbol and hazard information. 13.4 Storage

- Store biological materials in designated areas with appropriate containment and security measures to prevent unauthorized access.
- Ensure that storage conditions, such as temperature and humidity, are suitable for maintaining the viability of . the materials and preventing contamination.
- Use secondary containment systems, such as leak-proof trys or bins, to contain spills or leaks from storage containers.
- Maintain up-to-date biological inventory and each biological cabinet should have inventory on the door. 13.54 Decontamination and Disinfection

- Decontaminate work surfaces, equipment, and PPE regularly using appropriate disinfectants and procedures.
- _Dispose of biological waste in accordance with institutional guidelines and regulatory requirements, ensuring • proper segregation and containment.
- Inert biological waste after autoclave sterilization should be stored in a specifically labelled red bin and be disposed of via the group safety coordinators and departmental biological safety contacts Dr Brian Patton, brian.patton@strath.ac.uk

13.513.6 GM project

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- Any projects that involve the use of genetically modified material, whether micro-organisms, animals, plants or insects, must have prior approval from the University Genetic Modification Safety Committee (GMSC).
 Projects holders / the responsible person must undertake a GM risk assessment in advance of starting the
- Projects holders / the responsible person must undertake a GW risk assessment in advance of starting the project and submit to .gmcommittee@strath.ac.uk for review and approval.
 Notification of planned GM projects must also be given to the Department Safety Co-ordinator and the
- Nonneation of planned GM projects must also be given to the Department Safety Co-ordinator and the Department Biological Safety Co-ordinator.
- Information on genetic modification at the University of Strathclyde can be found <u>here</u>, and on the HSE website <u>here</u>. Please contact <u>gmcommittee@strath.ac.uk</u> for further information.

14. Lone working

- Conduct a risk assessment of the task to be performed when working alone.
- Lone workers must read and sign related RA, COSHH, MoW and complete the departmental safety training and submit online application for approval.
- · Ensure that lone workers are familiar with emergency procedure and the use of emergency exits.

15. Emergency Response 15.1Emergency response plan

Emergency response planning is essential for ensuring the safety of laboratory personnel and minimizing the impact of chemical accidents. It is PI/supervisors' responsibility to,

- Develop and implement a comprehensive emergency response plan tailored to the specific hazards and activities involving chemicals.
- Identify potential emergency scenarios, including chemical spills, fires, releases of toxic gases, and personal
 injuries, and establish protocols for responding to each type of emergency. Responses in specific situations are
 required to be detailed within the COSHH template, for example.
- Designate emergency response personnel, including PI/supervisors, trained responders, and designated safety officers, responsible for coordinating and executing emergency response procedures.
- Ensure spills kits available in labs.
- Conduct regular training and drills to familiarize laboratory personnel with emergency procedures, including evacuation routes, assembly points, and the use of emergency equipment such as spill kits, and PPE.
- Maintain an inventory of emergency response equipment and supplies, ensuring that they are readily accessible and in good working condition.
- Develop procedures for assessing the containing chemical spills or releases to prevent further contamination and mitigate risks to personnel and the environment.
- Review and update the emergency response plan annually to incorporate lessons learned from drills, exercises, and real-world incidents, as well as changes in laboratory activities, personnel, or regulations.

15.2 First aid and emergency contact

First aid is provided by Security Wardens (Livingston Tower) and dedicated first aiders in the department. A list of first aiders is displayed next to the lift. First aiders are supplied with a British Standard compliant portable first aid kit. For any Emergency call 2222 on any internal phone or 0141548 2222. This number is staffed 24 hours a day. Tell them which building, which room, your name and what kind of emergency, (e.g. first aid or chemical spill).

15.3 Spill response procedure

- 1. When you spill a laboratory chemical or discover a spill or release, tell your colleagues or PI/supervisor, seek advice, and determine the appropriate response.
- 2. Determine the types of spills: simple spills which you can clean up yourself, and complex spills which require outside assistance.
- 3. A simple spill is defined as one that
 - Doesn't spread rapidly,
 - Does not endanger people or property except by direct contact, vapour release or ignition risk
 - Doesn't endanger the environment or building fabric.
- Ensure you have the right personal protective equipment including, at a minimum, gloves, chemical splash goggles and a lab coat, as well as appropriate spill kits.
- 5. The availability of mechanical ventilation in the area affected can greatly affect the urgency and mode of remedial action. For example, most spillages of low-boiling liquids in or within a fume cupboard would clear by evaporation within a short time. Subsequent action in such cases can focus on verification and reporting.

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A. General response guidelines in case of simple spills

- Prevent the spread of dusts and vapours if the substance is volatile or can produce airborne dusts, close the laboratory door, and increase ventilation through fume hood to prevent the spread of dust and vapours to other areas.
- 2. Neutralize acids and bases, if possible Spills of most liquid acids or bases, once neutralized, can be mopped up and rinsed down the drain (to the sanitary sewer). However, be careful because the neutralization process is often vigorous, causing splashes and yielding large amounts of heat. Neutralize acids with soda ash or sodium bicarbonate if a dedicated acid spill kit is not available. Bases can be neutralized with citric acid or ascorbic acid. Use pH paper to determine when acid or base spills have been neutralized.
- Control the spread of the liquid Make a dike around the outside edges of the spill using absorbent materials.
 Absorb the liquid add absorbents to the spill, working from the spill's outer edges toward the centre.
- Absorb the liquid add assorbents to the spin, working from the spin's other edges toward the clean-up residues the neutralized spill residue or the absorbent should be scooped, swept, or otherwise placed into a plastic bucket or other container. For dry powders or liquids absorbed to dryness, double bag the residue using plastic bags. Place descriptive labels on each container.
- Dispose of the wasters place clean-up wastes in hazardous chemical waste cabinet for prompt disposal as per section 9.
- Decontaminate the area and affected equipment ventilating the spill area if necessary. For most spills, conventional cleaning products, applied with a mop or sponge, will provide adequate decontamination.

B. Special precautions

Flammable liquids and volatile toxic compounds – Remove all potential sources of ignition. Remove the spills through the use of spill pad backed with a vapor barrier. All used absorbent materials should be placed in heavyduty poly bags, which are then sealed, labelled, and disposed through hazardous waste management program. Before resuming work, make sure the spill area has been adequately ventilated to remove flammable vapours.

15.4 Spill Prevention Methods

Laboratory spills can occur during a chemical's storage, transportation, or transfer, as well as in the actual experiment. 1. A spill prevention program for storage areas should include the following:

- sturdy shelves and properly designed storage areas to minimize breakage and tipping;
- containers stored by hazard class;
- larger containers stored closer to the floor;
- containers stored on shelves sufficiently away from the shelf edge to minimize the danger of falling;
- storage shelves with lips to reduce the danger of falling;
- regular inspection of the integrity of containers; and
- 2. To minimize spills during transport, a laboratory should integrate the following:
 - carts, where appropriate,
 - safety containers,
 - rubberized buckets,
 - straps to secure containers, and
 - properly trained and thoughtful workers.

3. For the transfer of liquids from one container to another, the risk of spills can be reduced by

- paying careful attention to the size of containers to avoid overfilling;
 - using pumps or other mechanical devices rather than simply pouring directly into a container;
 - providing spill containment to capture any leaks; and
- bunding and grounding containers when flammable liquids are involved.

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DEPARTMENT OF PHYSICS

Arrangements for the Control of Ionising Radiation

The following is a summary of arrangements for the work with ionising radiation as applicable to the Department of Physics.

All work has to conform with the regulations of the university laid down in the: University of Strathclyde Occupational Health and Safety Policy https://www.strath.ac.uk/safetyservices/documentationforms/

and, in particular, the:

University Occupational Health and Safety Standard - Ionising Radiation <u>https://www.strath.ac.uk/media/ps/safetyservices/campusonly/standards/ionisingradiation/OHS_Standard_-</u> <u>Ionising_Radiation.pdf</u>.

All work has to conform also with the relevant legislation, notably the: Ionising Radiations Regulations 2017 Radioactive Substance Act 1993.

The Department is committed to meeting its obligations by ensuring that it has adequate arrangements, facilities and trained personnel to ensure the safe management of ionising radiation.

These Arrangements will be reviewed annually and updated as necessary.

Prof Stefan Kuhr S. Kuch

Head of Department

1. Radiation Protection Supervisor (RPS)

A Radiation Protection Supervisor (RPS) is appointed by the Head of Department and will assist him/her by monitoring that all work with ionising radiation within the department is carried out to the appropriate standard and that these safety regulations are followed. The John Anderson Building RPS is:

Dr Mark Wiggins, JA723, Tel. 5785, mark.wiggins@strath.ac.uk .

The RPS for ionising radiation of the Atoms, Beams and Plasmas (ABP) Group in TIC is:

Prof. Kevin Ronald, JA618, Tel. 5818, k.ronald@strath.ac.uk .

The RPS will also coordinate the interaction between radiation workers/investigators within the Department of Physics and the Safety, Health and Wellbeing department (SHaW) and, if necessary, other organisations outside the department.

In the absence of each RPS, the respective nominated deputies are:

Dr Grace Manahan, JA118, Tel. 5331, grace.manahan@strath.ac.uk.

Dr Craig Robertson, TIC120, Tel. 4812, craig.robertson@strath.ac.uk .

In newly arising matters contact with SHaW should be undertaken via the RPS unless there is an emergency.

2. Radiation Protection Adviser (RPA)

The responsibility of the RPA is to give advice on Compliance with the Ionising Radiations Regulations 2017, the Radioactive Substance Act 1993 and any other health and safety matters relating to radiation safety.

The RPA is appointed by SHaW and all communication with the RPA is carried out via SHaW.

3. Duties of Principal Investigators and Risk Assessments

Each Principal Investigator (PI) has the responsibility of conducting safely all work in their installation and associated applications. It is the duty of the PI/supervisors to:

- 1. Point out new radiation workers to the RPS in order to arrange for suitable training before commencement of work.
- 2. Consult with the RPS before acquiring any radioactive materials or ionising radiation generating equipment (including any high voltage equipment greater than 30 kV). This covers the purchasing of equipment or materials and also receiving them as gifts or on loan. FMS purchases must use the HB001 purchase code.
- 3. Perform a risk assessment (RA) and set-up a corresponding system of work (SoW) for each new experiment or a significant alteration to an existing one. Update this RA and SoW in regular intervals.
- 4. Give guidance on good safety during the day-to-day contact with students and research staff.
- 5. Report the discovery of any radioactive material legacy items to the RPS.

The risk assessments and the corresponding systems of work are approved by the PIs before commencement of work. In the case of work with ionising radiation, the RA needs to be countersigned by the RPS. The RA and SoW are signed by the users and then kept available directly at the experiment as well as filed at group level and on the i: drive.

In any new work where the risk assessment identifies an area which should be designated as *supervised* or *controlled*, SHaW **must** be informed and they will have the RA and SoW reviewed by the RPA. However, it is strongly recommended that risk assessments for **all** new work involving ionising radiation be sent to SHaW for review by the RPA. Note that the ultimate responsibility always remains with the PI and the HoD.

A *Controlled Area* is an area where, following completion of a RA, it has been determined that there is need for staff to follow procedures to ensure that they are not exposed to a significant radiation exposure or to limit the consequences or

probability of an accident. A controlled area will always be designated if accessible dose rates exceed 7.5 microsieverts per hour or a person could exceed 6 millisieverts per year.

A *Supervised Area* is an area where, following completion of a RA, it has been determined necessary to keep working conditions under review. A Supervised Area will always be designated if a person could exceed 1 millisievert per year.

4. Radiation Workers

All radiation workers need to be registered with SHaW using the electronic eRad system. This is done after nomination of a new radiation worker by a PI. This applies also for undergraduate project students. Only trained personnel are allowed to carry out radiation work.

A Classified Radiation Worker is a person likely to receive an effective dose of more than 6 millisieverts per year.

Currently, the department has no classified radiation workers and will take efforts to ensure that no radiation workers need to be designated as "classified". For reassurance of staff, dosimeters are used in many cases (identified by the specific RA and SoW). This is arranged in collaboration with SHaW and RPA where the records are kept.

The investigation level is 0.1 millisievert for a three month period. If the investigation level is exceeded, the RPS will review the work of the person exceeding the investigation level to determine whether their radiation dose is as low as reasonably practicable and whether working practices need to be improved. A record of the investigation will be retained for at least two years.

New and expectant mothers must be informed of the importance of declaring their circumstances, in writing, to the RPS. Special dose limits apply to such employees and the University may need to review the employee's work with ionising radiation. Further guidance is given by the HSE (<u>https://www.hse.gov.uk/pubns/indg334.pdf</u>).

4.1 Visiting Workers

PIs must give sufficient notice to the RPS about upcoming visiting radiation workers who must have received suitable training – either they provide documentary evidence from their home institution or they undertake the relevant Strathclyde training courses before arriving on-site.

Sufficient notice must also be given to the RPS about any sealed or unsealed radioactive sources that may be brought onsite with respect to appropriate handling, storage and disposal.

5. Radiation monitors

Groups need to ensure that detectors are available which are suitable for the monitoring of the kind of radiation at their particular experiment. They are tested and calibrated every year. Records are kept by the groups. Calibration is arranged on demand by the RPS.

Measurements should be done periodically (about once a year, determined in specific RA) or after major alterations around shielded equipment and facilities to ensure that the shielding remains effective. Records are to be maintained for two years.

6. Work with X-ray equipment

6.1 Designation of Areas

Group	PI	Safety contact	Activity	Room
SILIS	D. Jaroszynski	M. Wiggins	SCAPA bunker C laser-plasma accelerators	JA117
SILIS	D. Jaroszynski	M. Wiggins	SCAPA bunker C commercial X-ray tube	JA117
SILIS	D. Jaroszynski	M. Wiggins	SCAPA bunker A laser-plasma accelerators	JA119
SILIS	P. McKenna	M. Wiggins	SCAPA bunker B laser-plasma accelerators	JA120
ABP	K. Ronald	K. Ronald	ABP bays 1-4 parasitic or intentional generation of X-rays in bespoke relativistic electrons and microwave systems	TIC120

Work with X-rays takes place in the following laboratories:

Due to the very different nature of these experiments, all details for running and monitoring these experiments are put down in the RA and SoW specific to each individual experiment. In addition, SCAPA has its own local rules covering the bunkers.

6. 2 Interlocks, labelling and other warning equipment

Access to areas where ionising radiation is present must be prevented by interlocks and the appropriate labelling and other visual and acoustic warning schemes must be in place. The details are given in the specific RA and SoW. Operation and good state of interlocks and warning equipment must be checked regularly, at least once a year (or more often, if identified in the specific RA), by the group and records of this are kept by the group.

6. 3 Servicing of commercial X-ray generating equipment

Equipment of this nature, for example, an X-ray tube must only be serviced by a qualified service provider. Work must be safely controlled via the following SHaW forms:

Ionising radiation area / device handover form.

S7 form - External Service Providers Working on University premises.

6. 4 Contingency Arrangements

If it is known or suspected that an individual has been exposed to an overdose by either a direct or scattered radiation beam, the following measures are implemented:

- 1. **Make the situation safe**: Turn off the beam by pressing an Emergency Stop button or by other appropriate means (experiment specific).
- 2. The individual involved should be taken to a quiet place and reassured. They should not be left on their own.
- 3. In the case of solely a radiation injury, an immediate medical examination or treatment is probably not helpful unless a very strong overdose (some hundred millisievert or more) is suspected which might lead to acute radiation illness. In that case, follow step 4:
- 4. If the individual has received strong overdose injuries, non-radiation injuries or is in a state of shock, University Security (ext. 2222) is to be called for first aid and possible transfer to a hospital. Ensure that as much information as possible accompanies the casualty to hospital. If possible ensure that someone accompanies the casualty, or failing this, establish where the casualty is to be taken.
- 5. Contact the PI and RPS who will organise the future measures. If no qualified officer is available for whatever reason, the remaining parts of the contingency plan is implemented by the most senior available member of the team.
- 6. If necessary, restrict access to the hazard area and log all entries to this area. University Security (ext. 2222) can help in this.
- 7. Inform SHaW (ext. 2726).
- 8. Obtain as much information as possible about the incident from the casualty and others who may have witnessed the incident.

- 9. Reconstruct the whereabouts of the incident and estimate the received dose rate. Collect any dosimeters worn by the casualty and arrange for their immediate processing (state this to RPA!).
- 10. If necessary, arrange for University Human Resources to inform both the casualty's employer (if not a staff member) and the casualty's next of kin.
- 11. Pursue detailed investigation of the incident. Report results to SHaW and depending on legal requirements to HSE and an appointed doctor.
- 12. Keep records according to legal requirements. If the received dose is in excess of the investigation level but does not exceed 20 millisieverts, the report shall be retained for at least 2 years. In all other cases, a copy of the report will be retained until the persons involved have reached 75 years of age but, in any case, 50 years from the date on which it was made.

7. Work with Sealed Sources

7.1 Designation of Areas

Work with sealed sources takes place in the following laboratories:

Group	PI	Safety contact	Activity	Room
SILIS	D. Jaroszynski	M. Wiggins	Calibration of detectors	JA214c

All details for running and monitoring these experiments are put down in the RA and SoW specific to each individual experiment.

7.2 General Procedures

- 1. Procedures need to be in place for signing out and signing in sealed sources by authorised personnel it needs to be ensured that the sources are complete, intact and fully accounted for at the end of the day. In between use, the sources are kept in a securely locked place, usually a fire-proof safe.
- 2. The completeness and integrity of the sources is checked every month by visual inspection. Responsibility for this changes every month between RPS and group, the RPS being responsible for the odd months. Hence, the RPS will check for abnormal dose levels 6 times a year. The results are recorded in the "DRPS Ionising Radiation Log Book" of the Department or in the sign-out/sign-in book of the group, respectively.
- 3. Every second year the integrity of the sources is tested via wipe tests. This is organised by the RPS and SHaW in collaboration with the RPA. The records are kept by the RPS for at least two years.
- 4. <u>Before any source is brought on or moved away from premises (even temporarily)</u>, the RPS needs to be contacted. In particular, any acquisition of a new source needs to be discussed with the RPS prior to purchase. For most sources there is need to obtain a certification and authorisation for holding them **before** they arrive on the premises (Radioactive Substance Act 1993). Due to the fact that the procedure might take up to four months, the query should be submitted well in advance of the planned commencement of work.
- 5. PIs need to be aware of the fact that they are also responsible for providing means of support for the disposal of the sources after use. If a new source is meant to replace an existing one, the old one should be disposed of as soon as possible, if it is not needed for another purpose. Contact SHaW regarding disposal of old sources.
- 6. Due to the stringent legal requirements, any transport of sources needs to be discussed beforehand with the RPS and SHaW.

7. 3 Contingency Arrangements

Reasonably foreseeable accidents, occurrences or incidents involving sealed sources have been identified as follows:

- i. Employees or other persons received or are suspected to have received a dose exceeding the investigation limit or a relevant dose limit.
- ii. A source was lost, stolen or its whereabouts are unknown.
- iii. A source is physically damaged.
- iv. A source has a leakage.

It is the responsibility of the RPS or, if unavailable, the most senior available group member to implement the contingency plan and call in support from Security (ext. 2222), SHaW (ext. 2726), RPA or emergency services as required.

i. Overexposure

Implement contingency plan according to section 6.3. If overexposure occurs in conjunction with leakage, care should be taken to avoid spreading the contamination.

ii. Missing Source

- a) The RPS checks the relevant Sealed Sources log book and questions the relevant experimental team and safety contacts.
- b) The RPS organises the search using trained personnel.
- c) Ensure that all remaining persons on site are removed to an area where dose rates are at background level.
- d) If the search of the likely areas is not successful within one hour, extend the search to ensure that all possibilities for the source whereabouts are investigated.
- e) Implement the rules of 7.3 sections iii and iv, if the source was found, since an unattended source might be damaged.
- f) When all internal possibilities are exhausted and the source is not found, contact SHaW (ext. 2726) for assistance.
- g) If the source is not found, the Scottish Environmental Protection Agency (SEPA) is informed immediately by phone and within 24 hours in writing. HSE and the police are informed forthwith, preferentially at the same time.

iii. Physical Damage

- a) In the event of suspected physical damage to a sealed source (e.g. by fire or mechanical or chemical stress), the RPS will control access to the source until it has been thoroughly examined and confirmed to be safe to use by immediately implementing the following steps.
- b) Visual inspection and radiation monitors are used to assess any possible damage to the shielding.
- c) In the event of damaged shielding, local shielding will be set up to store the source until full shielding can be restored.
- d) The temporary storage place is identified as supervised or controlled area with the appropriate barriers and labelling, if necessary.
- e) The measures described in 7.3 section iv. are set in place to test for a possible leakage.

iv. Leakage

- a) In the event of an obvious damage to the sealed sources (see iii.) or when the source has been unaccounted for (see ii.), the RPS will assume that the source might be leaking radioactive material.
- b) The RPS will isolate the source, its container and all items that have been in contact with and avoid moving them unnecessarily.
- c) Erect barriers around the potentially contaminated areas and prevent access to them. Security can assist in that.
- d) Persons that were handling the source or were in the area shall leave the area but stay in the vicinity with restricted movement so that contamination is not spread unnecessarily.
- e) SHaW and the RPA are informed and an immediate test for leakage is requested.
- f) If leakage is suspected, SEPA is informed immediately by phone and within 24 hours in writing. HSE is informed forthwith, preferentially at the same time.
- g) RPS and RPA work on the further assessment of the extent of contamination, the collection and disposal of contaminated items and the assessment of internal doses of persons involved.

8. Work with Unsealed Sources

8.1 Designation of Areas

Work with unsealed sources takes place in the following laboratories:

Group	PI	Safety contact	Activity	Room
SILIS	D. Jaroszynski	M. Wiggins	Radiochemistry work performed on radioisotopes produced on SCAPA radiation beamlines	JA104
SILIS	D. Jaroszynski	M. Wiggins	Alpha sources for radioisotope production on SCAPA radiation beamlines	JA116

All details for running and monitoring these experiments are put down in the RA and SoW specific to each individual experiment.

8.2 General Procedures

- 1. Radioisotope generation on SCAPA radiation beamlines can be carried out using either stable or radioactive target samples. The SCAPA PANAMA radiochemistry lab JA104 is equipped for post-irradiation analysis of the target samples.
- 2. Up to 500 MBq of alpha emitting material can be kept on site in SCAPA at any one time. Unsealed alpha sources are supplied by the National Physical Laboratory (NPL), Teddington and are only kept on site for the required experimental duration. Once experiments and diagnostic measurements are finished, sources are returned to NPL.
- 3. Unsealed sources supplied by anyone other than NPL (including those brought on-site by visiting workers) will be subject to new procedures established in advance with the SCAPA General Manager, RPS and SHaW.
- 4. All unsealed source transport to/from the Department is conducted using a reputable courier. The status of each unsealed source destined for use in SCAPA is documented on a SCAPA Unsealed Source Tracker Form. A new Form is created for each unsealed source regardless of whether or not that specific source has been at SCAPA previously.
- 5. Each proposed incoming unsealed source is first approved (with respect to isotope type and activity level) in writing (on its Tracker Form) by the RPS and SHaW prior to despatch. The SCAPA General Manager signs off the Tracker Form for confirmation that the source will arrive pre-mounted in a bespoke housing and is informed by NPL when the source is despatched.
- 6. The <u>specific instructions given in section 8.2.1 below are followed with respect to accepting delivery of an</u> <u>unsealed source-in-housing</u>.
- 7. During periods when unsealed sources are on site, the completeness and integrity of each source-in-housing is checked every week by visual inspection by the SCAPA General Manager (or nominated delegate). This same person also checks the contingency plan items (spill kit, etc.) on a weekly basis during these periods. All results are recorded on the Tracker Form.
- 8. Every outgoing unsealed source-in-housing collection is also pre-approved by the RPS and SHaW regarding packaging. Collections by the courier take place within SCAPA with the courier exiting directly onto Richmond St in the presence of two members of staff (one of which is the SCAPA General Manager or nominated delegate). The two members of staff sign the Tracker Form for source despatch.
- 9. Receipt at NPL is confirmed to the SCAPA General Manager who closes off the Tracker Form for this particular unsealed source.
- 10. All completed Tracker Forms (and an electronic copy) are kept by the RPS for at least five years and copies are sent to SHaW.
- 11. During periods when unsealed sources are on site, procedures are in place for their storage in a fire-proof safe and for signing out and signing in unsealed sources-in-housing by authorised personnel. See the specific RA and system of work for details.

8.2.1 Procedures for unsealed source arrival from NPL

- 1. When an unsealed source-in-housing arrives at Strathclyde, the courier is instructed to arrive at the SCAPA entrance on Richmond St, being **met upon arrival by two members of staff** (one of which is the SCAPA General Manager or nominated delegate) and brought into SCAPA.
- 2. With the sources inside JA116, the SCAPA General Manager (or nominated delegate), who shall be wearing nitrile gloves, **<u>immediately monitors for external contamination</u> (each layer of packaging is monitored during the unpacking process). Refer to Figure 1 with outcomes as follows:**
 - No Contamination Found / Paperwork Agrees If the source labelling and courier documentation agree with the Tracker Form information then the two members of staff sign the Tracker Form for source receipt.
 - No Contamination Found / Paperwork **DOES NOT** Agree If source labelling, courier documentation and Tracker Form information is not in agreement, then the sources are not to be accepted and SHaW is informed immediately. The courier is instructed to return the sources to NPL.
 - Contamination Found

If any contamination is found, the source is to be immediately quarantined, the courier told to **NOT** leave the premises, and SHaW is to be contacted immediately, regardless of the paperwork match or not.



Figure 1. Flowchart for scrutiny of courier-delivered unsealed source from NPL.

8.3 Working with unsealed sources in the radiochemistry lab JA104

- 1. The area will be handed over to NPL during the duration of the experiment whereupon they take ownership of the lab.
- 2. Work undertaken by others (including SCAPA staff) will be subject to new procedures established in advance with the SCAPA General Manager, RPS and SHaW.
- 3. NPL will therefore be responsible for the following as detailed in their RA and SoW:
 - Working with the sources.
 - Dose monitoring.
 - Cleaning up spillages.
 - Removing waste.
 - Handing back the area upon completion of work in a safe manner.
- 4. The handover and handing back is documented on a SCAPA Radiochem Lab Handover Tracker Form. A new Form is created for each experimental run.
- 5. Each proposed area handover is first approved in writing (on its Tracker Form) by the RPS and SHaW upon contract signing.
- 6. Handing back of the area is also approved in writing (on its Tracker Form) by the RPS and SHaW upon receipt of evidence relating to lab cleanliness and doses.
- 7. All completed Tracker Forms (and an electronic copy) are kept by the RPS for at least five years and copies are sent to SHaW.

8.4 Contingency Arrangements

Reasonably foreseeable accidents, occurrences or incidents involving unsealed sources have been identified as follows:

- **i.** Employees or other persons received or are suspected to have received a dose exceeding the investigation limit or a relevant dose limit.
- **ii.** A source was lost, stolen or its whereabouts are unknown.
- iii. A source is physically damaged.
- iv. A source has a leakage.

It is the responsibility of the RPS or, if unavailable, the most senior available group member to implement the following contingency plan and call in support from Security (ext. 2222), SHaW (ext. 2726), RPA or emergency services as required.

i. Overexposure

Implement contingency plan according to section 6.3. If overexposure occurs in conjunction with leakage, care should be taken to avoid spreading the contamination.

ii. Missing Source / Potential Theft

- a) The RPS checks the Tracker Form and SCAPA Unsealed Sources log book (both kept in Room 116) and questions the experimental team.
- b) The RPS organises the search using trained personnel.
- c) Note down evidence for any potential break-in.
- d) Evacuate all remaining persons from SCAPA level 1. Warning signs to keep people out are displayed.
 - Appropriate warning signs are stored in the safety filing cabinet outside Bunker C.
- e) If the search of the likely areas on SCAPA level 1 is not successful within 30 minutes, extend the search to ensure that all possibilities for the source whereabouts are investigated.
- f) Implement the rules of 8.3 sections iii. and iv. if the source was found, since an unattended source-in-housing might be damaged.
- g) When all internal possibilities are exhausted and the source is still not found, contact SHaW (ext. 2726) for assistance.
- h) If the source is not found, the Scottish Environmental Protection Agency (SEPA) is informed immediately by phone and within 24 hours in writing. HSE and the police are informed forthwith, preferentially at the same time.

iii. Physical Damage

- a) In the event of suspected physical damage to an unsealed source-in-housing (e.g. by fire or mechanical or chemical stress), the RPS will control access to the source until it has been thoroughly examined and confirmed to be safe to use by immediately implementing the following steps.
- b) Visual inspection and radiation monitors are used to assess any possible damage to the housing.
- c) In the event of <u>internal-only damage</u>, e.g. broken glass vial inside the housing, store the source-in-housing in the safe of Room 116 while despatch to NPL is arranged.
 - Remember that the housing is a vacuum-tight seal. Under no circumstances attempt to open the housing lid.
- d) In the event of <u>external (and possible internal) damage</u>, the measures described in 8.3 section iv. are set in place to test for a possible leakage.

iv. Leakage

Contingency Plan in case of unsealed alpha source leak/contamination:

Unsealed Source Workers

- 1. Stay calm and don't panic.
- 2. Do not eat/drink or touch your face/mouth until cleared to do so.
- 3. If immediately affected by skin contamination, wipe the skin area with decontamination wipes and place the used wipes in a plastic bag, labelled as radioactive.
 - Wipes and plastic bags are located in Room 116 and in the appropriate bunker.
- 4. Contact the responsible people:
 - Do not bring a phone up your face use the phone loudspeaker.
 - Manager/DRPS Mark Wiggins ext. 5785, technicians ext. 5329.
 - University Radiation Protection Officer (URPO) Richard Wright ext. 2726.
 - If necessary, qualified first aiders Stephen Ross / Wentao Li or University Security (ext. 2222).

Responsible People Attending

- 5. Reassure the individuals involved.
- 6. Order of priority is:
 - People with life threatening conditions.
 - Preventing contamination spread.
 - Dealing with contaminated people.
 - Cleaning up contamination.
- 7. If necessary, call University Security (ext. 2222) are qualified first-aiders who decide if transport to a hospital is needed.
- 8. Obtain as much information as possible about the incident from the individuals and others who may have witnessed the incident.
- 9. Collect TLD/neutron radiation badges worn by the individuals.
- 10. HOSPITAL CASES ONLY Ensure that as much information as possible accompanies the casualties to hospital. If possible, ensure that someone accompanies them or, failing this, establish where they are to be taken.
- 11. HOSPITAL CASES ONLY Arrange for University Human Resources (ext. 4476) to inform any casualty's employer (if not Strathclyde staff/student) or next of kin (if Strathclyde staff/student).
- 12. Ensure the suspected zone of contamination is evacuated and closed off with Avalon barriers and warning signs are displayed.
 - Avalon barriers are stored in the East and West Hallways.
 - Appropriate warning signs are stored in the safety filing cabinet outside Bunker C.
 - The zone of contamination may encompass any or all of the following: Room 116, Bunker A, B or C, Control Area, West Hallway.
- 13. Carry out the alpha decontamination procedure:
 - The Radiation Protection Advisor is contacted (tel. 0131 2010 190).
 - The alpha contamination probe and decontamination spill kit are obtained from Room 214c on Level 2.
 - Spill clean-up procedure is carried out (instructions are with the spill kit).
- 14. Radioactive waste plastic bags are temporarily stored in Room 116.
- 15. Radioactive waste disposal is arranged for as soon as possible.
- 16. Keep a record of this occurrence and inform NPL of the incident.
- 17. Arrange for immediate processing of the TLD/neutron radiation badges.

v. Dealing with Radioactive Material Legacy Items

Upon discovery of a legacy item in the Department (be it chemical or otherwise, labelled or otherwise) that <u>is suspected</u> <u>to be of a radioactive nature</u>, the following Contingency Arrangements must be implemented by the discoverer of the item.

Note that previous or plausible radioactive legacy items have taken many forms, such as:

- Thoriated (thorium) welding tips.
- Granulated compounds for spectroscopy such as uranyl (uranium) compounds.
- Diluted liquids containing, for example, uranium, europium, cobalt.
- Electronic valves for high-voltage switches containing tritium.
- 1. Upon finding a suspected radioactive material or legacy item, keep the item in its discovery location taking care not to disturb anything else.
- 2. In a prompt manner, take action with regards the following points:
 - i. Wash your hands if you feel they may have been contaminated.
 - ii. Notify others in the vicinity to remain away from the item. Consider evacuating the area.
 - iii. Consider locking the chemical cupboard or lab door if relevant.
 - iv. Notify a senior member of staff in your group: ideally your supervisor or group safety officer, otherwise any senior colleague.
- 3. Ensure that the relevant Radiation Protection Supervisor for ionising radiation is contacted:
 - John Anderson Building: Mark Wiggins JA732, ext. 5785 or 5331, <u>mark.wiggins@strath.ac.uk</u>.
 - TIC Building: Kevin Ronald, TIC120, ext. 5818, <u>k.ronald@strath.ac.uk</u>.
 - Otherwise: John Gillan, JA827, ext. 3051, john.gillan@strath.ac.uk .
- 4. The relevant person in charge will assess the situation, taking the following prompt action:
 - a. If no RPS is present ensure the room remains locked with no entry signage in place.
 - b. When the RPS is available radiation monitoring is conducted to determine the level of radioactivity.
 - c. If the item is found to be radioactive, keep it in its discovery location and the room vacated and locked.
- 5. The RPS will contact the RPO Richard Wright or delegated substitute of SHaW.

Local Rules for Artificial Optical Radiation

1. Purpose

This document outlines the Department of Physics Local Rules for use of sources of Artificial Optical Radiation (AOR) defined as coherent or incoherent sources operating in the following wavelength ranges:

- Ultra-violet radiation: Electromagnetic energy with wavelengths from 100 nm to 400 nm (including transilluminators, PCR cabinets, sterilising equipment, mercury and xenon lamps for fluorescence microscopes). This covers the regions UV-A 400-315 nm, UV-B 315-280 nm and UV-C 280-100 nm.
- Visible light radiation: Electromagnetic energy with wavelengths from 400 nm to 700 nm.
- Infra-red radiation: Electromagnetic energy with wavelengths between 700 nm and 1 mm.

These rules detail how the department implements the University <u>OHS Standard for</u> <u>Artificial Optical Radiation</u>.

2. Abbreviations

AEL	Accessible Emission Limit
Area-DLPS	Area (group-specific) Department Laser Protection Supervisor
CTLD	Consumer Type Laser Device
DSC	Department Safety Coordinator
DLPS	Department Laser Protection Supervisor
HoD	Head of Department
LCA	Laser Controlled Area
MPE	Maximum Permissible Exposure
N-CTLD	Non-Consumer Type Laser Device
NIR	Non-Ionising Radiation
PI	Principal Investigator
PPE	Personal Protective Equipment
RA	Risk Assessment
SoW	System of Work
URPO	University Radiation Protection Officer

Roles and Responsibilities

2.1. Department Laser Protection Supervisor (DLPS)

The Department Laser Safety Protection Supervisor (DLPS) is appointed by the Head of Department (HoD) and is responsible for:

- Co-ordinating AOR safety management procedures at Department level including issuing Departmental Local Rules for AOR sources and work.
- Liaising with the University Radiation Protection Officer (UPRO), RPA and other external bodies in relation to AOR safety.
- Reviewing AOR risk assessments and Systems of Work

- Maintaining an up-to-date inventory of all Class 3B and 4 lasers and any N-CTLDs in the department.
- Ensuring ensure that all those working with Class 3B or Class 4 lasers within the department have received appropriate training and are competent to do so; including providing training at departmental level along with Principal Investigators, Academic Supervisors, Trade Supervisors or Line Managers.
- Liaising with the HoD to ensure they are kept informed of all AOR issues.

These duties are carried out in coordination with the Area Department Laser Safety Protection Supervisor's (Area-DLPS) who are primarily responsible for the following duties for their associated groups:

- Reviewing group AOR risk assessments and System of Work.
- Maintaining an up-to-date inventory of the groups AOR sources.
- Commissioning laser interlock systems.
- Leading annual laser safety refresher training and induction for each group.

2.2. Head of Department (HoD)

The Head of Department (HoD) retains legal responsibility for all health and safety issues at departmental level; the DLPS and Area-DLPS roles are functional to assist the HoD in the management of this area of safety.

2.3. University Radiation Protection Officer (URPO)

The URPO is appointed by the Head of SHaW and is responsible for aiding departments in achieving and maintaining compliance with all legislative requirements by;

- providing competent advice and guidance on the safe use of lasers and laser devices;
- providing advice on the completion of risk assessments for the use of Class 3B, 3R and 4 Lasers;
- acting as a point of contact for externally appointed experts.

2.4. Principal Investigators (PIs)

Principal Investigators (PIs) have the responsibility of conducting safely all work in their groups. Specifically for Non-Ionising Radiation (NIR) sources, PIs are responsible for:

- Ensuring that, prior to commencement, all work involving non-ionising radiation equipment (including both coherent and incoherent sources) is covered by an appropriate Risk Assessment
- For invisible 3R, class 3B and class 4 lasers or incoherent artificial optical sources with equivalent brightness, preparing a written System of Work (SoW) following the department templates to prioritise the control measures to minimise the risk of exposure to radiation. This written System of Work must be countersigned by the Area-DLPS or DLPS.
- Ensuring suitable PPE (such as goggles) is in place and regularly inspected,
- Ensuring all users have received sufficient laser safety and induction training prior to working with NIR equipment in the labs.
- Ensuring all Class 3B and Class 4 lasers purchases are made using code LS001 and informing the relevant Area-DLPS at point of purchase.
- Performing and recording annual checks of the laser interlock systems.

2.5. Hazardous Artificial Optical Radiation Users

All users of AOR sources within the department that are likely to be exposed to radiation exceeding the accessible emission limit (AEL) of a class 1 laser or of a visible class 3R (i.e. >5 mW for 400-700 nm) are responsible for:

- Ensuring they have completed the Laser Safety Training Course on MyPlace.
- Ensuring they are aware of and adhere to the Department Local Rules in this area.
- Following the requirements of all safety documentation developed for the work that they are undertaking;
- Maintaining PPE and reporting any defective equipment.
- Reporting accidents through using the <u>Strathclyde Incident Reporting and</u> <u>Investigation System (SIRIS)</u>.

2.6. List of relevant AOR contacts (Department and University)

Department Safety Convenor (DSC)	Name: Mr John Gillan Telephone: 3051 / 07816 609 171 Office: JA 827
Department Laser Protection Supervisor (DLPS)	Name: Prof Jonathan Pritchard Telephone: 3120 Office: JA 820
Area Department Laser Protection Supervisor (Area-DLPS)	Name: Dr Kali Wilson (EQOP) Telephone: 3363 Office: JA 607
	Name: Dr. Konstantinos Lakoudakis (Nano) Telephone: 3464 Office: JA 823
	Name: Dr Wentao Li (SILIS) Telephone: 5748 Office: JA 726
	Name: Prof. Alan Kemp (IOP) Telephone: 4901 Office: TIC 534f
University Safety Services	General contact number: 2726 Office: GH 820
University of Strathclyde Safety Services Radiation Protection Supervisor (Lasers) ¹	Name: Mr Richard Wright Telephone: 4673 Office: GH 820

¹ Contact should be made via DLPS unless there is an emergency and DLPS not reachable.

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3. Training and Induction Requirements

3.1. Training

All AOR users that are likely to be exposed to radiation exceeding the accessible emission limit (AEL) of a class 1 laser or of a visible class 3R (i.e. 5 mW for 400-700 nm) MUST complete the online Laser Safety Training Course on MyPlace.

Area laser safety lectures are given each October which are attended by all new intake since the last lecture and everyone whose last attendance is longer ago than three years. Groups might decide to make yearly attendance compulsory. Pls or their delegates train new users in the local procedures at their workplace and ensure that they have the level of competence for the work performed.

All training should be documented using the online <u>SpiderX Safety Records</u> on completion of the course and be refreshed every 3 years. Visiting researchers staying for less than 6 weeks, UG and PGT Students should complete the S17P form available on Spider X.

Interns and visitors not having a Strathclyde account will be provided with a limited access account (contact department IT team to arrange) to enable them to access the laser safety awareness online course on MyPlace.

In exceptional cases, the material is provided on a CD. For visitors, relevant training from the home institution can be accepted by the DLPS or Area Departmental Laser Protection Supervisor (Area-DLPS).

3.2. User Induction

Prior to commencing any work with AOR sources, following completion of the training requirements described above all users must receive a practical lab induction from their PI (or appropriately trained group member). This induction will cover lab entry and access, use of the laser safety interlock, use and storage of laser safety goggles, and details of laser safety shielding (including use and manual handling of laser safety doors) along with appropriate training on use of lasers, optics and beam alignment procedures.

Induction training should be recorded using the relevant group induction form on SpiderX

Commented [JP1]: Pending new induction forms for each group

4. Risk Assessment & System of Work

- Prior to any work involving non-ionising radiation equipment (including both coherent and incoherent light sources), the PI responsible (or their delegated nominee) must carry out a risk assessment (RA) using the <u>eRISK</u> system and record the significant findings.
- For invisible 3R, class 3B and class 4 lasers or incoherent artificial optical sources with equivalent brightness, prepare a written System of Work (SoW) following the department templates to prioritise the control measures to minimise the risk of exposure to radiation. This written System of Work must be countersigned by the Area-DLPS or DLPS.
- A copy of all Risk Assessments and SoW should be stored on the Physics I: drive.
- Class 3B and class 4 lasers should be interlocked either to the entry door or enclosing panels. If that is not possible, justification and mitigating measures must be provided in a risk assessment countersigned by the Area-DLPS or DLPS. Where situations are similar, this can be done at group level for class 3B lasers but must be laser/laboratory specific for class 4 lasers.
- All laser beams should be fully enclosed. If that is not possible, justification and mitigating measures must be provided in a risk assessment. During phases like setting up, aligning, updating and servicing the beams should be enclosed as much as possible to perform the work undertaken. Any alteration in set-up must include the planning of updated shielding from the start and not as an afterthought. Alteration of experiment and shielding must be implemented in parallel.
- The PI might restrict alteration of shielding to certain users depending on expertise and experience level. If the PI identifies particular high risk items, these should be listed in the section of the SoW on specific laser safety procedures and any alteration of shielding for these items needs approval from the PI signing the SoW or a nominee.

The Department SoW template is presented in Appendix A and can be downloaded from the <u>Department Laser Safety SharePoint</u>.

5. Use of optical radiation sources other than lasers

The "<u>Control of Artificial Optical Radiation at Work Regulations 2010</u>" demands a RA of all optical sources, not only lasers.

- Perform a RA on high power LED in the same way as assessing the safety of a laser.
- Possibility of eye damage due to intense light from lamps and fibre coupled illumination (stereo microscope, probe stations, etc.): don't look directly into the lamp and the fibres.
- Possibility of eye damage due to intense light from white light source for spectroscopy: switch off lamp if fibre is disconnected. Don't look into fibre end.
- Possibility of eye damage from UV curing lamps: For UV lamps not fully enclosed the RA should identify suitable goggles to ensure eye-safe operation without exposure to UV above MPE and identify other PPE (e.g. cotton gloves) if required.
- UV lamps contain mercury. In case of a breakage consult COSSH forms and seek competent help.

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6. Records

- The Department Safety Coordinator (DSC) keeps a record of laser users via reporting through the <u>SpiderX</u> safety system.
- Pls/Groups must inspect their PPE at least quarterly and keep records either electronically or as paper records at goggle stations. These are inspected during the safety inspections.
- PIs/Groups must test the functioning of their access control and interlock systems annually and keep records either electronically or as paper records at goggle stations. A record of the inspection should be saved on the Physics I: drive.
- PIs/Groups must communicate purchases of class 3B and class 4 lasers to the Area-DLPS.
- PIs/Groups must maintain an updated laser inventory of Class 3B and 4 and all N-CTLD sources using the University <u>eRAD database</u>.
- PIs are responsible for ensuring copies of relevant safety paperwork (including RA and SoW and inspections) are stored on the department I: drive.

7. Procurement Requirements

Following the <u>University Artificial Optical Radiation Standard</u> all requisitions for Class 3B, Invisible Class 3R or all Class 4 lasers or Non-Consumer Type Laser Device (N-CTLD) must be placed through FMS using purchase code LS001.

8. Laser Safety

8.1. Protection Measures

All laboratories using Class 3B, Invisible Class 3R or all Class 4 lasers must be designated as Laser Controlled Areas (LCA) with access control restrictions and an electronic interlock system. A laser interlock system is used to prevent unauthorised access to the laser laboratories by university support staff such as security guards, cleaners and members of estate management needing access to the corridors. If access is necessary, it is to be ensured that all systems are in a safe condition.

Class 3B and class 4 lasers should be interlocked either to the entry door or enclosing panels. If that is not possible, justification and mitigating measures must be provided in a risk assessment countersigned by the Area-DLPS or DLPS.

8.2. Laboratory Access and Interlock System

The laser interlock system comprises a keypad entry system with illuminated warning sign, audible alarm, over-ride switch for exit, door-based relay and shutters or interlocks into the laser power supplies, and in legacy system a magnetic door lock. This prevents unauthorized access to the experiment and unintentional exposure to laser radiation. As the installations differ somewhat between different labs, the induction to their operation needs to be done locally and documented in the induction forms (as described in §4.2).

If an invisible 3R, class 3B and 4 laser is operating, the entrance door interlock system must be engaged and an illuminated sign on the entrance door must indicate that the laser is switched on. The interlock systems and warning lights are tested yearly and the results are recorded by the Area-DLPS.

8.3. Laboratories with Maglocks

All laboratories with magnetic locks are equipped with emergency break glass or plastic switches to power down the magnetic locks in an emergency. Pls of labs using these legacy interlocks featuring a magnetic lock must read and sign <u>23-Physics-RA-Magnetic-Locks</u> and maintain records of monthly checks of the break-glass controls for disabling the magnetic locks. A template for recording checks is available on the <u>Department Laser</u> <u>Safety Sharepoint</u>.

As these interlocks are not compliant with the current University Guidance on Fire Safety, PIs should contact the Electronics Workshop to arrange replacement with the new interlock system at the earliest opportunity.

8.4. Use of engineering controls and personal protective equipment (PPE)

8.4.1. Engineering Controls

- 1. The user strives to make the experiment safe in standard situations so that data taking can commence without relying on PPE (in particular laser goggles). This includes
 - a. The table must to be enclosed by suitable laser guards at least 10 cm higher than the standard beam height. Laser beams must be terminated at the end of their useful paths by suitable beam stops. Leakage of beam splitters and parasitic reflections must be also blocked as soon as possible. These blocks are in addition to the laser guards.
 - b. Suitable additional enclosures to help to achieve full beam enclosure can be provided by tubing the beam, covering areas of the optical table from above or by enclosures at the side of the table as, e.g. table doors (extending from table surface to above eye height, typically the canopy).
 - c. Changes of beam height should be performed via vertical periscopes. Periscopes should be shielded in beam direction. Inclined beams and running beams above the height of the laser guards demand particular consideration in RA/SoW and mitigating engineering controls.
 - d. The user needs to be aware of the path of all beams including parasitic reflections. The table will be regularly scanned for stray beams with an IR viewer or card (see point 9 below).
- 2. If any shielding or table guards need to be removed for alignment purposes, the user assesses the consequences and provides compensation via specific beam guards for the duration of alignment, operation below the safe power (maximal permissible exposure limit, MPE; see notes on RA and SoW) or the use of laser goggles. If shielding is removed/interlock bypassed for alignment of a beam with more than 500 mW, a Risk Assessment is required justifying removal of engineering controls to be signed by PI before commencing work. If this is a recurrent situation, the resulting instructions should be included in the SoW of the laboratory.
- 3. If an upgrade of the experiment demands an alteration of shielding, these changes need to be implemented in parallel. Standard operation (above MPE power, without PPE) is only resumed if the updated shielding is in place. Any alteration of shielding for high risk items (identified in the specific laser safety procedures of the SoW) needs approval from the PI signing the SoW, another named individual on the SoW or the Area-DLPS or DLPS.

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- 4. UG and MSc project students, internships and short-term visitors (i.e. users who did not undergo the full departmental safety induction but are operating via the S17P form) are not allowed to alter shielding (including taking down table guards). Exceptions are documented in the induction form or a specific RA/SoW. PIs might impose further restrictions on activities depending on experience or training level of users even if they went through the full departmental induction.
- 5. Alignment of lasers and associated optical apparatus should be carried out using the lowest practical output level compatible with the purpose. Prior to alignment power levels should be measured to determine if they exceed MPE.
- 6. If attenuation below the MPE is not possible, all open beam alignment to set up the experiment will be done wearing the correct safety goggles with at least xLBx at xxx nm (numbers provided in the specific RA/SoW). All other users in the room will be informed immediately prior to undertaking this procedure.
- 7. Some experiments might require the usage of goggles all the time high-risk high power lasers are on. This is specified in the corresponding SoW.
- 8. Special care is taken to avoid beams pointing towards the entrance even under alignment conditions. If necessary the door entrance needs to be protected by an additional chicane or other means identified in a specific RA, such as a laser curtain. Laser curtains should be certified to confirm to EN 12254.
- Make not only use of viewing aids like UV/IR cards and IR viewers but consider indirect monitoring of beam alignment via cameras and monitors. Viewer cards only to be used at low optical powers (≤10 mW) without use of goggles. This is based on typical reflective properties ≤5% of the standard IR Viewer cards used at 780-1064.
- 10. For labs with multiple users ensure all everyone is informed of work in the lab and take care that other users are not exposed to stray beams when introducing or removing power meters, photodiodes or IR viewer cards into the beam path.

8.4.2. Personal Protective Equipment (PPE)

The use of eye-protecting PPE ("laser goggles") is the last resort from a safety management point of view and priority should be given to engineering controls (enclosures, etc.) to achieve safety. However, in a university research environment, the need for PPE arises quite commonly for open beam alignment purposes and the supplied PPE needs to be used in a responsible fashion. In addition, for some high power lasers even a small amount of scattered radiation can be dangerous so that wearing PPE is required even if table shielding is in place. This is identified in the SoW.

The induction procedure includes an induction on the correct use and wearing of the goggles. Goggles are to be maintained. Users should inspect their goggles before wearing them and report any defect to the appropriate person. Goggles with scratches or cracks in filter or frame or which show other wear and tear affecting safety must be replaced. Cleaning instructions usually come along with them. Don't use solvents like acetone on plastic goggles, but usually water and mild soap are fine. When not in use, the goggles should be stored in their containers and instructions kept at a place easily accessible and identifiable in the lab, preferably a purpose made rack system located close to the door. Alternatively, they can be kept outside of the lab in an easily accessible location.

Instructions like "wear suitable safety goggles" are not acceptable in a SoW as users must get clear guidance. Use phrasing like "goggles of at least y LBx at wavelength z" (with y = D, I, R, M identifying the laser type, D=cw, M=locked, x is the required optical

density to base 10). A brief overview of goggle specifications can be found under the rider <u>"Spec Tutorial" here</u>.

8.5. Laser Safety Grab Cards

Every laboratory using optical sources operating above MPE must display a Laser Grab Card clearly visible by the door (see example in Appendix B below, the template is available on the <u>Department Laser Safety Sharepoint</u>). This contains instructions for what to do in the event of an accident, and specifically for the case of a laser eye strike details arrangements for taking the injured user to:

Accident and Emergency Department at Glasgow Royal Infirmary, 84 Castle Street, Glasgow, G4 0SF Tel: 0141 211 5608 / 4484 / 4314

Following an accident, the PI, DLPS and the Department Safety Convenor must be informed and a Safety Incident Form must be completed via the <u>Strathclyde Incident</u> <u>Reporting and Investigation System (SIRIS)</u>.

8.6. Emergencies and Accidents

In the event of an emergency, e.g. a fire alarm, all labs are to be left in a safe state for entry of untrained emergency personal. This requires that no high risk items, such as class 3B and class 4 lasers, high voltage or high current connectors, should be "easily" accessible for untrained personal, but are to be powered off, enclosed/shielded or interlocked. These actions should not prevent prompt evacuation so should be limited to what can be done in 30 s to 1 min.

Note: In an immediate emergency in your own neighbourhood, initiate the emergency switch-off buttons (if available) and evacuate.

Appendix A: Example System of Work (Download Template)

DEPARTMENT OF PHYSICS - UNIVERSITY OF STRATHCLYDE SYSTEM OF WORK

ROOM: xx

ID: 2digitYear-Physics-Group-SoW-room(and/or name)

Name of experiment

Brief description of experiment

Refer to risk assessments:

1) ID:xxxx - 24-Physics-GROUP-RA-JAx.xx Lab Risk Assessment 2)

Safe Power (maximally permissible exposure, MPE):

Eye: @ ... nm (1 mW @ 400 – 700 nm) Skin: 20 mW @ 400-700 nm, 100 mW > 1050 nm, intermediate 700-1050 nm (in 3.5 mm diameter)

General Laser Safety Procedures:

- 1. Entrance door interlock system must be used when laser is in operation and an illuminated sign on the entrance door must indicate when laser is switched on.
- 2. Laser beams should be enclosed as much possible while allowing for the particular working procedure to be performed during all stages of experiments (setting-up, aligning, upgrading, servicing, day-to-operation/data taking).
 - a. Laser beams must be terminated at the end of their useful paths by suitable beam stops. Leakage of beam splitters and parasitic reflections must be also blocked as soon as possible. Periscopes should be shielded in beam direction. The table needs to be enclosed by suitable laser guards.
 - b. The user needs to be aware of the beam path of all beams including parasitic reflections. The table is regularly scanned for stray beams with an IR viewer or card. Viewer cards only to be used at low optical powers (≤10 mW) without use of goggles.
 - c. Table doors must be closed as soon as access is no longer required.
- 3. If any shielding or table guards need to be removed for alignment purposes, the user assesses the consequences and provides compensation via specific beam guards for the duration of alignment, operation below the MPE limit or the use of laser goggles.
- 4. Safety considerations must be an integral part of experimental design and must be considered in the design phase and not as an afterthought. If an upgrade of the experiment demands an alteration of shielding, these changes need to be implemented in parallel. Standard operation (above MPE power, without PPE) is only resumed if the updated shielding is in place. Any alteration of shielding for high risk items (see specific laser safety procedures) needs approval from the PI signing the SoW or xxxx.
- 5. Alignment of lasers and associated optical apparatus should be carried out using the lowest practical output level compatible with the purpose. Prior to alignment power levels should be measured to determine if they exceed MPE.
- 6. If attenuation below the MPE is not possible, all open beam alignment to set up the experiment will be done wearing the correct safety goggles with at least xLBx at xxx nm. All other users in the room will be informed immediately prior to undertaking this procedure.

Specific Safety Procedures:

- 1. If the xxx laser(s) is on at a power level of above xxx, goggles with at least xLBx at xxx nm need to be worn all time.
- In case of high-power laser alignment going on with potential danger on entry: Additional warning signs (blinking warning lamp, additional paper sign on door, ...), use of interconnecting doors, instructions like "please knock/ring and wait for entry"...
- Mention special procedures for e.g. inclined beams, fan out from gratings or MEMS devices, scattered beams, gloves for UV lasers, ...
- 4. Identify any items which can only be operated/changed by users with a certain level of experience, e.g.
 - a. UG and MSc project students, interns and visitors are not allowed to alter shielding (including taking down table guards).
 - UG and MSc project students, interns and visitors are not allowed to alter shielding except taking down table guards, if access is required for alignment.
 - c. The shielding around the inclined MOT beams are high risk items and must not be removed without approval.
- 5. Information on which lasers are interlocked and how (via power supply, shutter).
- 6. Specify lasers which are not interlocked and potentially any mitigating methods (e.g. fibre lasers xyz not running unattended).
- 7. In the event of an emergency (e.g. fire alarm) switch off all lasers/specific lasers, if that can be done safely before evacuation.

8.

Notes:

1) ...

ALL WORK MUST BE CARRIED OUT IN ACCORDANCE WITH THE

- o University OHS Standard Artificial Optical Radiation
- University Guidance Safe Use of Lasers
- o Department of Physics OHS Health and Safety Management Arrangements
- Further guidance is in the "<u>GUIDANCE ON THE SAFE USE OF LASERS IN</u> EDUCATION AND RESEARCH" (AUPRO 2018)

Approved by name of Principal investigator/supervisor

Date.....

Countersigned by Date..... Laser Protection Supervisor (for class 3B, 4 or invisible 3R laser)

Authorised Users:

Name	Signature	Date

Review History

	Review 1	Review 2	Review 3	Review 4
Due date:				
Date				
conducted:				
Conducted				
by:				

Appendix B: Example Laser Grab Card (Download Template)

LASER EYE STRIKE: EMERGENCY INSTRUCTIONS

In the event of an incident involving an actual or suspected laser eye strike please proceed as follows

- > Make situation safe, terminate laser emission.
- Summon assistance from security control on ext 2222. Please state clearly
 - Name, department, location and extension number
 - Brief details of the injury- LASER EYE STRIKE
 - Medical attention may be required at a specialist hospital department
 - Transport will be required
- Stay with the casualty and reassure until help arrives. A reading test might be useful to demonstrate that the Fovea Centralis (i.e. the important area of the retina responsible for sharp viewing) is not affected.
- The incident is to be reported to the supervisor/PI, the DLPS / Area-DLPS
- The casualty is to be taken to:

Accident and Emergency Department at Glasgow Royal Infirmary, 84 Castle Street, Glasgow, G4 0SF (0141 211 5608 / 4484 / 4314)

- The casualty should be accompanied to the hospital, ensuring that all the relevant details of the laser involved the incident are available for the medical staff (power, wavelength, pulse length, exposure duration).
- The A&E department might decide to refer the casualty to a dedicated Ophthalmology Centre. An eye examination should take place as soon as reasonably practicable after the incident, at most within 24 hours.
- Contact University Safety Team (SHaW) at ext 2726 and inform them of the situation as soon as is possible. The URPO will attend at the earliest opportunity.
- The laser involved and the lab in which it is used will be placed out of use until a preliminary investigation has been completed by SHaW. Once complete, and pending a more in-depth investigation, the lab and the lasers it contains may be placed back in use.
- The patient is to attend immediately and regardless of if they feel fine or report no signs of injury.
Department of Physics Artificial Optical Radiation Local Rules v1.0

EMERGENCY OPHTHALMIC EXAMINATION LASER Exposure - Grab card

Department of Physics, University of Strathclyde

xxxx Group, Room xxxx Experiment: ...

LASER DETAILS:	
і. Туре: ххх	xxx (Continuous Wave /pulsed)
ii. Wavelength:	xxx
iii. Power Output (CW):	xxx
or Pulse Energy, Duration, and Rate (pulsed):	ХХХ
iv. Laser Classification:	Class 2/3R/3B/4
EXPOSURE DETAILS:	
i. Circumstances of accident/injury:	
ii. Time/Date of Injury	
iii. Eye affected:	Left/Right/Both*
iv. Was protective eyewear being worn? If yes, what specifications	Yes/No*
CONTACTS	0141-548-xxxx
i. Responsible academic	
ii. Group leader	
iii. Department Laser Protection Supervisor (DPLS)	Prof. Jonathan Pritchard 3120
iv. Area-DLPS	Dr. Konstantinos Lagoudakis 3464 Dr. Wentao Li 5330/5327 Dr. Kali Wilson 3363 Prof. Alan Kemp 4901 2079 or 2726
VI. Salely Services	2013 01 2120



University Occupational Health and Safety Standard Roles, Responsibilities and Accountabilities

November 2019

OHSS00xv7 Issue date: November 2019 Owner: Head of SHaW Page 1 of 44 Last review date: Next review date: November 2021 For the latest version of this document please go to <u>http://www.strath.ac.uk/safetyservices/1</u>

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1. Purpose

The University has a legal duty under Sections 2 and 3 of the Health and Safety at Work etc. Act 1974, to protect all interested parties engaged with the organisation from the risk of injury and ill health arising from its workplace activities. The Occupational Health, Safety and <u>Wellbeing Policy</u> <u>Statement</u> (September 2019) and the Occupational Health, Safety and Wellbeing <u>Strategy 2016-2021</u> support compliance with these duties and underpin the University's Strategic Plan.

The University is committed to meeting its legal duties by ensuring that everyone involved is actively engaged and works in collaboration to optimise safety, health and wellbeing on campus.

For compliance purposes, this document defines the roles, responsibilities and accountabilities necessary to implement the University's Occupational Health, Safety and Wellbeing Policy statement at each level of the organisation. It has been developed in line with the requirements set out in the Health and Safety Executive's document 'Leading Health and Safety at Work' INDG417 (rev1) and the higher education sector guidance document 'Leadership and Management of Health and Safety in Higher Education Institutions' published in 2015 by the Universities Safety and Health Association in partnership with Universities & Colleges Employers Association. Both sets of guidance follow the four-step Plan-Do-Check-Act (PDCA) management model which requires leadership, commitment and participation of all staff from all levels and functions of the University to achieve continual improvement.

The PDCA model is as described below:

Plan	 Agree a University wide Safety, Health and Wellbeing Policy. Establish effective health, safety and wellbeing objectives, programmes and procesess in accordance with the Policy. Ensure these arrangements are sufficiently resourced. Decide how to communciate, promote and champion health, safety and wellbeing. Decide how to monitor, measure and report performance.
Do	 Implement safety, health and wellbeing management arrangements on a University wide basis and within individual areas of responsibility. Consult interested parites on matters affecting their safety, health and wellbeing. Participate in mandatory health and safety training, as appropriate to the role.
Check	•Monitor and measure acitivites and processes with regards to the implementation of the Policy and report the results.
Act	 Take actions to continually improve the safety, health and wellbeing performance and to achieve the intended outcomes of the Policy. Ensure all staff promote a positive, sustainable safety culture within their area of responsibility which encourages everyone to play their part.

This document is also designed to meet the requirements of the ISO 45001:2018 standard for Occupational Health and Safety Management Systems. The University's organisational chart in relation to responsibility for safety, health and wellbeing is summarised in the attached Information Sheet (Section 14, Appendix 5).

2. Scope

This OHS Standard applies to every aspect of the University of Strathclyde's business, including all educational, research and knowledge exchange, commercial, residential, recreational and management activities.

This document outlines the safety, health and wellbeing roles, responsibilities and accountabilities for all staff, students and other interested parties engaged with the University, including Court Members and Executive Officers.

Every member of the University community has a responsibility to play their part by fully cooperating and assisting the University to comply with statutory health and safety requirements.

3. Abbreviations

ADR	Accountability and Development Review
BCM	Business Continuity Management
CoSHH	Control of Substances Hazardous to Health Regulations 2002
DSC	Departmental Safety Coordinator (formerly Convenor)
HoDs	Heads of Department/Services/Schools and Directors of Professional Services
IMT	Incident Management Team
ISO	International Organisation for Standardisation
KPIs	Key Performance Indicators
OHS	Occupational Health and Safety
OHSaW	Occupational Health, Safety and Wellbeing
PI	Principal Investigator
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013
SACSOH	Statutory Advisory Committee on Safety and Occupational Health
SHaW	Safety, Health and Wellbeing
SMS	Safety Management System
USCO	University Secretary and Compliance Officer

4. Definitions

Competent Adviser is a person who has sufficient training and experience or knowledge and other qualities to enable them to properly fulfil the requirements of the role.

Departments includes Schools within the Faculty of Humanities and Social Sciences

Executive Officers includes Executive Deans and Chief Officers (Chief Commercial Officer, Chief Financial Officer, Chief People Officer)

Faculties includes Strathclyde Business School

Heads of Department includes Heads of Departments/Schools/Services and Directors of Professional Services

Interested Parties are any organisation, individual, or group of individuals that may be affected by the University of Strathclyde's activities.

5. Roles, Responsibilities and Accountabilities

5.1 Governance Roles

University Court

As the governing body and employer, University Court, has the overall statutory duty as defined by the Health and Safety at Work etc. Act 1974, associated Health and Safety Regulations and in accordance with the University's Statute 2.1.14 for the safety, health and wellbeing of all interested parties, including staff, researchers, students, visitors, members of the public, third parties, contractors who could be harmed by University's activities, both on and off the University's premises.

Court Members have both an individual and a collective duty to consider the significant safety, health and wellbeing risks faced by the organisation in the course of approving strategy, major

OHSS00xv7 Issue date: November 2019 capital projects and when making other key business decisions, so far as is reasonable practicable, and to review the University's SHaW performance on an annual basis.

In order to discharge its legal duty, the University Court is expected to:

PLAN	
•	Regularly review and approve the University's Occupational Health, Safety and Wellbeing Policy statement (at least annually);
•	Ensure safety, health and wellbeing matters regularly appear on the agenda of Court meetings and can be raised by members.
DO	
•	Seek assurances from the Principal and other Executive Officers that effective safety, health and wellbeing arrangements are sufficiently resourced, implemented and monitored on a university wide basis, and in relation to the University's significant partnerships, collaborations and wholly owned companies; Ensure the University's emergency planning, business continuity and fire safety arrangements are kept up to date; Ensure a consultative committee for safety, health and wellbeing matters is convened, chaired by an Executive Officer, and a non-executive member of Court is nominated to sit on the committee and act as an ambassador for safety, health and wellbeing at Court;
•	Participate in mandatory health and safety leadership training (see Section 11), as appropriate to the role, to ensure a sufficient awareness of legal duties.
CHEC	K
•	Review the University's safety, health and wellbeing KPI's and performance as presented to Court in the annual SACSOH Report; Consider reports of any significant issues which concern non-compliance with the University's Occupational Health, Safety and Wellbeing Policy statement; Consider reports of matters which have the potential to result in regulatory enforcement action and the University's response in relation to these.
ACT	
•	Seek assurances that lessons have been learnt following major incidents, accidents and significant near miss events and actions have been fully implemented; Confirm that regular independent reviews of the University's SMS are conducted and reported on.

5.2 Leadership Roles

University Principal and Vice Chancellor

The University Principal and Vice Chancellor, as the most senior officer of the University, is legally responsible and accountable for securing compliance with the health and safety legal duties placed on the University and for achieving the principal aims of the University's Occupational Health, Safety and Wellbeing Policy statement.

The Principal demonstrates visible leadership and active commitment by ensuring safety, health and wellbeing compliance matters are given the appropriate level of strategic importance and considered in all aspects of the University's undertakings.

The Principal has the authority to take whatever executive action is considered necessary to prevent serious harm to individuals or to the University. In exceptional circumstances, this may include closing down University buildings, sites, operations or activities. In accepting responsibility and accountability for safety, health and wellbeing matters the Principal is expected to:

PLAN	
•	In collaboration with the Convenor and members of Court, regularly review and approve the University's Occupational Health, Safety and Wellbeing Policy statement (at least annually):
•	Ensure safety, health and wellbeing matters regularly appear on the agenda of Executive meetings and can additionally be raised by members.
DO	
•	Delegate day-to-day authority for safety, health and wellbeing management to a member of the Executive Team;
•	Seek assurances from the USCO and other Executive Officers that the principal aims of the University's Occupational Health, Safety and Wellbeing Policy statement are effectively implemented, resourced and monitored on a University wide basis and in relation to the University's significant partnerships, collaborations and wholly owned companies;
•	Seek assurances that the University's emergency planning, business continuity and fire safety arrangements are kept up to date;
•	Oversee the convening of the Statutory Advisory Committee on Safety and Occupational Health (SACSOH) to properly consult the University's workforce, particularly trade unions and staff, students and their representatives and appoint an Executive Officer as Chair; Participate in appropriate mandatory health and safety leadership training (see Section 11) as appropriate to the requirements of the role.
CHEC	K
• • ACT	Critically appraise the University's safety, health and wellbeing KPIs and performance at planned intervals and approve the annual SACSOH report to Court; Consider reports of any significant issues which concern non-compliance with the University's Occupational Health, Safety and Wellbeing Policy statement and which require direction; Report to Court any matters which have the potential to result in regulatory enforcement action and the University's response in relation to these.
	Sock assurances from the USCO and other Executive Officers that lessons have been
•	learnt following major incidents, accidents and significant near miss events and actions have been fully implemented;
٠	Seek assurances from the USCO that all corrective and preventative actions have been taken in response to independent reviews of the University's SMS.

The Vice Principal

The Vice Principal deputises for the Principal and Vice Chancellor when required.

University Secretary and Compliance Officer

The University Secretary and Compliance Officer (USCO) has delegated authority for leading the University's corporate Safety Management System (SMS) designed to prevent work-related injury and ill health, provide safe and healthy workplaces and activities, and support staff and student wellbeing.

The USCO also oversees safety, health and wellbeing management arrangements and performance in areas within their control, i.e. the Directorate of Strategy and Policy, the Directorate of Student Experience and the Directorate of Enhancement Services, the Safety, Health and Wellbeing Department, the Internal Audit Service and the Office of the Legal Counsel to the University.

In accepting authority, the USCO is expected to:

PLAN

- Ensure the development and approval of a university wide Occupational Health, Safety and Wellbeing Policy statement and an associated corporate SMS to achieve legal compliance, and to meet the objectives of the University's Strategic Plan and the strategic priorities of the Occupational Health, Safety and Wellbeing Strategy. Ensure that the Policy statement is signed by the Convenor of Court and the Principal and Vice Chancellor and is communicated to all interested parties and reviewed at least annually;
- On the advice of the Head of SHaW establish a corporate safety, health and wellbeing risk register and risk profile and review it at least annually;
- Establish a competent, sufficiently resourced corporate Safety, Health and Wellbeing Team to effectively develop, implement, maintain and continually improve the University's corporate SMS;
- Work in collaboration with other Executive Officers to ensure safety, health and wellbeing management arrangements across the University are effectively planned, sufficiently resourced and embedded into the University's business processes; ensuring sufficient consideration is given at the executive level to significant health and safety risks in all business decision making;
- Seek assurances from Executive Officers and senior staff that effective communication and consultation mechanisms are in place to inform all interested parties of the importance of matters affecting their safety, health and wellbeing, including the need to conform to the requirements of the University's corporate SMS and to adhere to emergency response, business continuity and fire safety arrangements.

DO

- Work in collaboration with other Executive Officers and senior staff to implement the principal aims of the University's Occupational Health, Safety and Wellbeing Policy statement on a university wide basis and in relation to the University's significant partnerships, collaborations and wholly owned companies;
- Convene an annual meeting of the Executive Officers to develop a set of corporate SHaW KPIs and to review the University's safety, health and wellbeing strategic priorities (as described in the OHSaW Strategy), the implementation of the Occupational Health, Safety and Wellbeing Policy statement and the continual improvement of OHS performance;
- Convene the University's Statutory Advisory Committee on Safety and Occupational Health (SACSOH), define its terms of reference and act as Chair to ensure the

University's community - including staff, trade union representatives, students and their representatives are properly consulted and informed on matters affecting their safety, health and wellbeing. As a minimum requirement, the committee should meet at least three times per year;

- Nominate a suitably qualified Departmental Safety Coordinator to represent the interests of the Professional Services Directorates, not listed below, to sit on the SACSOH. Nominate senior representatives for the following Directorates to sit on SACSOH; Human Resources (HR), Student Experience (SE) and Education Enhancement (EE) and Estate Services;
- Act as the University's named permit holder for specific permitted activities (e.g. Home Office Establishment Licence holder, Scottish Environment Protection Agency (SEPA) Licence holder in relation to activities involving radioactive sources etc.);
- Ensure all statutory reporting requirements are met (i.e. Department for Business, Energy and Industrial Strategy Annual returns);
- Escalate any serious safety, health and wellbeing issues to the Principal and Vice Chancellor where there is need for clear direction and oversee the investigation of major incidents, accidents and significant near miss events;
- Ensure SHaW management arrangements are organised, fully implemented into normal business processes, monitored, audited and reviewed within their areas of operational responsibility;
- Lead the University's Incident Management Team (IMT) and support other executive, directorate and managerial roles to ensure that the University's emergency planning, business continuity, and fire safety arrangements are established, implemented, tested and maintained;
- Participate in appropriate mandatory health and safety leadership training (See Section 11) as appropriate to the requirements of the role.

CHECK

- As Chair of SACSOH, work in collaboration with committee members to review, approve and to set the direction for the University's corporate SMS in line with the requirements of the ISO 45001:2018 Occupational Health and Safety Management Standard;
- As chair of SACSOH, prepare an Annual Report on behalf of the committee for presentation to Court. The report should include an annual appraisal of the corporate SHaW KPIs and a review of SHaW performance in relation to Faculties/Directorates and the University's significant partnerships, collaborations and wholly owned companies as reported by Executive Officers;
- Approve the University's emergency planning and business continuity plans, including fire safety arrangements. Ensure emergency procedures encompass all relevant risks;
- Regularly review safety, health and wellbeing performance in relation to areas of significant risk on campus, such as major capital construction projects and building facilities health and safety reports (including statutory inspections of plant and equipment), and seek assurances that recommendations made in inspection and audit reports have been acted upon;
- Seek assurances from Executive Officers and the Head of SHaW that arrangements are in place to regularly audit health and safety performance both internally and by independent external auditors;

For the latest version of this document please go to http://www.strath.ac.uk/safetyservices/8

• Conduct regular periodic reviews of the University's corporate SMS to test its continuing suitability, adequacy and effectiveness.

ACT

Seek annual assurances from other Executive Officers and Professional Services Directors to confirm:

- Lessons have been learnt following major incidents, accidents and significant near miss events and actions have been fully implemented;
- All corrective and preventative actions have been closed out in relation to independent reviews of the University's corporate SMS;
- Matters reported by interested parties, i.e. insurance providers, loss adjusters, fulltime trade union officials, trade union safety representatives, regulatory bodies and emergency services personnel have been fully addressed;
- All staff and students have received necessary health and safety induction, information and training.

Other Executive Officers (Executive Deans and Chief Officers - CCO, CFO, CPO)

In collaboration with the USCO, the Executive Officers oversee the safety, health and wellbeing arrangements within their areas of responsibility, including oversight of the University's significant partnerships, collaborations and wholly owned companies, as appropriate. They demonstrate active, visible leadership to secure legal compliance as a minimum and promote a positive culture of continual improvement to ensure operational excellence and to meet the requirements of the University's strategic plan and future strategic plans.

The day-to-day authority for managing safety, health and wellbeing is delegated to Heads of Departments/Directors of Professional Services and as such, each Executive Officer is expected to seek regular assurances from their Heads of Department/Directors of Professional Services regarding safety, health and wellbeing performance, which will be reported to the USCO annually.

In accepting authority, Executive Officers are expected to:

PLAN

- Oversee the establishment of organisational arrangements at Faculty/Directorate level, including where applicable, the appointment of a competent health and safety adviser (i.e. a suitably trained Faculty Manager/Operational Director). This will ensure safety, health and wellbeing arrangements and management systems are effectively planned, organised, controlled, monitored, audited and reviewed in order to comply with all relevant statutory provisions and to meet the requirements of the University's Occupational Health, Safety and Wellbeing Policy statement and the Occupational Health, Safety and Wellbeing Strategy;
- Oversee the development and maintenance of the Faculty/Directorate's safety, health and wellbeing risk registers and risk profiles and associated Faculty/Directorate safety, health and wellbeing action plans and ensure the information is reviewed at least annually. Give sufficient consideration to SHaW risks in all key business decision making;
- Provide sufficient resources and support for the effective management of safety, health and wellbeing, including funding for HoDs/Directors of Service to attend training

and ensure mandatory health and safety training requirements are incorporated into the ADR process;

• Seek assurances that effective communication and consultation mechanisms are in place within each Faculty/Directorate to inform all interested parties, including staff, students and their representatives and third parties, visitors and members of the public on matters affecting their safety, health and wellbeing, including significant risks, emergency arrangements, business continuity plans and fire safety arrangements.

DO

- Support the USCO by overseeing the implementation of the principal aims of the University's Occupational Health, Safety and Wellbeing Policy statement within their areas of responsibility and in relation to the University's significant partnerships, collaborations and wholly owned companies;
- Annually review the University's SHaW strategic priorities, in collaboration with the USCO (as described in the OHSaW Strategy) and develop a set of appropriate SHaW KPIs to measure, monitor and report on the implementation of the OHSaW Policy statement and the continual improvement of OHS performance;
- Nominate a suitably qualified person to represent each Faculty at SACSOH meetings, this is usually the Faculty's appointed competent person (applicable to Executive Deans);
- Convene a Faculty/Professional Services Directorate Safety, Health and Wellbeing Committee to ensure staff are adequately consulted on matters of health and safety, define its terms of reference and chair its meetings. At each meeting HoDs are expected to the provide updates on actions from inspections and audits and provide assurances that lessons have been learnt from inspections, incidents, accidents and significant near miss events. Ideally, the Committee should meet at least three times per year;
- Provide feedback on new and revised OHS Standards to the Head of SHaW during consultation exercises;
- Ensure mechanisms and resources are in place to guarantee health and safety risks are identified, assessed and controlled and where possible eliminated at the earliest stage in the procurement process of plant, equipment and when engaging contractors and service providers, preferably before work commences. This responsibility also applies to Executive Steering Boards in the case of major capital construction projects on campus;
- Escalate any serious safety, health and wellbeing issues to the USCO where there is need for clear direction and provide appropriate assistance with the investigation of major incidents, accidents and significant near miss events;
- Provide assistance to the University's Incident Management Team (IMT) in the event of a major incident, accident or significant near miss event, as required and support other executive, directorate and managerial roles to ensure that the University's emergency planning, business continuity, and fire safety arrangements are communicated established, implemented, tested and maintained;
- Conduct an annual health and safety leadership inspection to gather information regarding compliance with the Faculty/Directorate's safety, health and wellbeing plan aligned to the OHS Standards. Findings should be reported to the Faculty/Directorate's Safety, Health and Wellbeing Committee;

- Ensure mechanisms are in place to monitor, audit and review health and safety performance in line with the Faculty/Directorate's health, safety and wellbeing plan and the University's SHaW KPIs;
- Participate in appropriate mandatory health and safety leadership training (see Section 11) as appropriate to the role.

CHECK

- In collaboration with the USCO, prepare the Annual SHaW Report for presentation to Court. The report should include an annual appraisal of the corporate SHaW KPIs and a review of SHaW performance in relation to Faculties/Directorates and the University's significant partnerships, collaborations and wholly owned companies;
- On an annual basis, approve the Occupational Health, Safety and Wellbeing section, for each department within their scope of responsibilities, contained within the University's Key Control Checklist as a statement of assurance;
- Monitor and review health and safety audit findings, learnings from major incidents, accidents and significant near misses and emerging trends i.e. increased sickness absence rates, ensuring sufficient resources are in place for HoDs/Directors of Professional Services to progress preventative and corrective actions to address nonconformances in a timely manner.

ACT

Seek assurances from HoDs to confirm:

- Lessons have been learnt following major incidents, accidents and significant near miss events and actions have been fully implemented;
- All corrective and preventative actions have been taken in response to independent reviews of each Faculty's SMS;
- Matters highlighted following inspections by external bodies, i.e. insurance providers, loss adjusters, full-time trade union officials, trade union safety representatives, regulatory bodies and emergency services personnel have been fully addressed;
- All staff and students within their area of responsibility have received necessary health and safety induction, information and training.

For the purposes of this document, safety, health and wellbeing matters are assigned to individual Executive Officers by virtue of their role. All Executive Officers (or their nominated representative) report to SACSOH via the Faculty and the Professional Services representatives on SHaW matters specific to their areas of responsibility. These may include the following: (*Please note: The descriptions given in the paragraphs below are intended to highlight some of the University's activities which carry a higher degree of risk, however, they not intended to be exhaustive lists of responsibilities).*

Faculties

Each Executive Dean has delegated authority for the oversight of safety, health and wellbeing arrangements within their own Faculty and in relation to the significant partnerships, collaborations and wholly owned companies which are linked to academic departments, such as the Advanced Forming Research Centre (AFRC), Power Networks Demonstration Centre (PNDC) and the Lightweight Manufacturing Centre (LMC). All stand-alone research centres are expected to align their own SMS to the meet the requirements of this written standard.

Directorates

As noted, each Chief Officer (USCO, CCO, CFO and CPO) has delegated authority for the oversight of safety, health and wellbeing management arrangements in relation to their assigned directorates as follows:

Estates Services Directorate

The nominated Chief Officer has the delegated authority for the oversight of safety, health and wellbeing management arrangements in relation to the University's construction, refurbishment and building maintenance projects, building facilities management, management and maintenance of campus green spaces and the maintenance and inspection of infrastructure (plant, equipment and fixed assets) owned by or under the control of the University. Specific areas of responsibility include, but are not restricted to:

- asset and property management •
- building access control •
- campus security •
- capital projects •
- cleaning •
- common parts, facilities and services of the University's estate •
- control of documentation and records related to statutory inspections and maintenance • of fixed campus assets
- duty holder responsibilities required by specific legislation e.g. fire safety •
- environmental and energy management •
- Estates Services fleet management •
- general waste/hazardous waste management •
- grounds •
- maintenance of academic and non-academic (residential) buildings •
- permit to work systems to control specific high risks, i.e. access to confined spaces and • working at height (including roof access), excavations, hot work and work involving high voltage electricity
- portering services
- room bookings/space allocation •
- **Ross Priory** •
- safety signage and notices throughout the campus •
- statutory inspections of plant, equipment and fixed assets •
- Stepps playing fields •
- Strathclvde Sport •
- the operation of the Technology and Innovation Centre •
- the oversight of building facilities management contracts in relation to Innovo, AFRC, LMC and PNDC
- University owned roadways and pathways
- waste management and recycling

In addition, responsibilities also include statutory compliance duties relating to the management of asbestos, the Construction (Design and Management) Regulations (CDM) Owner: Head of SHaW OHSS00xv7 Page 12 of 44 Issue date: November 2019 Last review date:

2015, fixed electrical safety, events, fire safety infrastructure, food safety and hygiene (in relation to the University's Nourish food outlets), gas safety, legionella management controls, the safe use and maintenance of lifting equipment, pressure vessel systems and the allocation and management of accommodation utilised by third party tenants and spin out companies based on campus.

Marketing and Communications Services Directorate

The nominated Chief Officer has delegated authority for the oversight of safety, health and wellbeing arrangements in relation to travel safety connected with international student recruitment, and in terms of food safety and hygiene and event safety management in connection with the University's conferencing activities, corporate events, graduation ceremonials and formal visits to the University.

Research and Knowledge Exchange Directorate and Industry Engagement Directorate

The nominated Chief Officer has delegated authority for the oversight of safety, health and wellbeing arrangements in relation to significant research and knowledge exchange partnerships, collaborations and wholly owned companies, which are not the responsibility of Faculties or Departments.

Human Resources Directorate

The nominated Chief Officer has delegated authority for ensuring that appointing managers set out health, safety and wellbeing roles, responsibilities and accountabilities within job descriptions, vacancy advertisements and employment contracts. Responsibilities also include communicating to the Head of SHaW when new HoDs are appointed to ensure they receive appropriate OHS induction training and reminding managers to incorporate mandatory health and safety training requirements and development needs into the annual ADR process. This will ensure staff have the necessary training, skills, knowledge to enable them to competently discharge their duties.

The nominated Chief Officer oversees the effective monitoring the performance of the Employee Assistance Programme, by ensuring sickness absence data is collated and by contributing to the delivery of the Workplace Mental Health Action Plan which forms part of the University's Thrive@Strathclyde Programme.

Finance Services Directorate

The nominated Chief Officer has delegated authority for ensuring that procurement processes and staff expenses claim procedures support legal compliance and meet the requirements of the University's OHS Standards.

Other Responsibilities

As described by the University's organisational chart, the USCO and Executive Officers have authority for the safety, health and wellbeing arrangements within other professional services directorates, including Continuous Improvement (CPO) and Information Services (CFO) and the Safety, Health and Wellbeing Department, the Internal Audit Service and the Office of the Legal Counsel to the University (USCO).

5.3 Senior Management Roles

Heads of Departments/Services/Schools and Directors of Professional Services

Day-to-day authority and accountability for operational safety, health and wellbeing management and implementation of the University's OHS Standards is delegated from Executive Officers to Heads of Department/Services/Schools and Directors of Professional Services (HoDs).

HoDs ensure a health and safety culture of openness and awareness exists within their areas of responsibility, where staff and students have the confidence to speak out and get involved in ensuring that issues are quickly and effectively resolved. The overall objective is to ensure a safe and healthy environment for all interested parties engaged with the University and full compliance with health and safety legal requirements. Continual improvement of performance within their areas of responsibility is achieved by the effective delivery of objectives established within individual departmental safety, health and wellbeing action plans.

HoDs are supported in their role by staff within each department/directorate such as Pls/supervisors, Technicians, operational managers, and DSCs etc.

In accepting authority, HoDs are expected to:

PLAN	
•	Establish and maintain suitable operational arrangements at Departmental level, (see <i>Local Rule: Departmental OHS Management Model Arrangements</i>) including where applicable the delegation of authority to one or more competent health and safety advisers (e.g. a suitably trained Departmental Manager/Operational Director), to ensure safety, health and wellbeing arrangements and management systems are effectively planned, organised, controlled, monitored, audited and reviewed in order to comply with all relevant statutory provisions and the University's OHS Standards; Oversee the development and maintenance of a departmental health and safety risk register and risk profile and associated departmental safety, health and wellbeing action plans and ensure the documentation is reviewed at least annually. Ensure the departmental plan is aligned to the Faculty/Directorate plan and give sufficient consideration to the safety, health and wellbeing risks along with key business risks in decision making:
•	Provide sufficient resources and support for the management of operational safety, health and wellbeing matters, in particular appoint a DSC and Depute DSC and recruit additional voluntary health and safety roles as required, i.e. trained first-aiders, fire safety co-ordinator/marshalls, a radiation protection supervisor, a DSE coordinator etc. to implement the University's OHS Standards and procedures, ensuring they are consulted on via regular meetings; Allocate adequate funding and time away from normal duties for appointed persons
	to attend training and to fulfil the requirements of their safety, health and wellbeing

- to attend training and to fulfill the requirements of their safety, health and wellbeing role. Use the ADR process to ensure management arrangements and mandatory health and safety training requirements are assigned by position or role to operational managers and supervisory staff;
 Ensure effective communication and consultation mechanisms are in place within
- Ensure effective communication and consultation mechanisms are in place within each department to inform all interested parties, including staff, students and their representatives, third parties, visitors and members of the public on matters affecting

their health and safety including the significant risks, emergency arrangements, business continuity plans and fire safety arrangements.

- DO
- Work in collaboration with other HoDs to implement the University's OHS Standards at a departmental level and in relation to the University's significant partnerships, collaborations and wholly owned companies. Where premises are shared, use cooperation, communication and coordination to denote, discuss and agree OHS responsibilities in keeping with statutory requirements;
- Convene a Departmental Safety, Health and Wellbeing Committee to ensure staff are adequately consulted on matters of health and safety, define its terms of reference and chair its meetings. The Committee should ensure a consistent approach to the implementation of the University's OHS Management Standards, provide an opportunity to share OHS best practice, monitor progress of actions from audits and ensure lessons are learnt from inspections, incidents, accidents and significant near miss events. Ideally, the Committee should meet at least three times per year;
- Maintain regular communication with the corporate SHaW team and provide feedback on new and revised OHS Standards to the Head of SHaW during consultation exercises;
- Work in partnership with the corporate SHaW team, DSCs and nominated departmental risk assessors to ensure a programme of risk assessments is planned, prioritised and implemented so that all significant workplace hazards and associated risks are identified, assessed and controlled and where possible eliminated in a proportionate manner. All risk assessments should be reviewed on a regular basis to prevent injury and ill health. This includes assessing risks at the introduction stage of new or modified research proposals, at the earliest stage in the procurement process for goods, equipment and services and before work commences when engaging contractors and service providers;
- Consider the level of management and supervision required for each task according to its complexity and level of risk and give approval to high risk activities, such as overseas field trips;
- Promote the importance of reporting accidents, incidents, near misses and cases of work related ill-health to staff and students, visitors etc.;
- In liaison with the Head of SHaW, oversee the timely investigation of departmental related incidents, accidents, near miss events and cases of work related ill-health in order to comply with the requirements of the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013 and approve investigation reports;
- Address any significant breaches of health and safety compliance immediately and elevate where necessary any serious safety, health and wellbeing issues, to the Executive Officer where there is need for clear direction, including those involving contractors;
- Provide assistance to the University's IMT in the event of a major incident, accident or significant near miss event or as part of a test exercise as required;
- Ensure that the departmental emergency planning, business continuity and fire safety arrangements (including Personal Emergency Evacuation Plans PEEPS) are established, implemented, communicated and maintained;

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- Conduct health and safety leadership inspections to gather information regarding compliance with the department health, safety and wellbeing plan. Findings should be reported to the Departmental Health, Safety and Wellbeing Committee;
- Ensure mechanisms are in place to monitor (using inspection, health surveillance, incident and accident and work related ill-health reports), audit and review OHS performance in line with the Departmental Health, Safety and Wellbeing Plan and agreed University Health, Safety and Wellbeing KPIs. Ensure sufficient resources are in place to progress preventative and corrective actions to address non-conformances in a timely manner;
- Establish an effective process to identify training and competency needs for all staff including the need to complete the mandatory OHS induction and other specific OHS training requirements;
- Ensure that where the need for health surveillance is identified in a risk assessment, staff within their area of responsibility are referred to the University's Occupational Health Service and attend health surveillance appointments when required to do so;
- Make reasonable workplace adjustments for staff as advised by the Occupational Health Service;
- Participate in appropriate mandatory health and safety management training (see Section 11) as appropriate to the role.

CHECK

- Provide a written annual OHS report to the Executive Officer for all departmental activities, including significant partnerships, stand-alone entities and wholly owned companies, in relation to compliance with the Departmental Health, Safety and Wellbeing Plan;
- Complete the Occupational Health, Safety and Wellbeing section of the Key Controls Checklist as a statement of assurance to the Executive Officer;
- Review the department's emergency planning and business continuity plans, including fire safety arrangements for effectiveness. Ensure emergency procedures encompass all relevant risks;
- Monitor and review health and safety audit findings, learnings from major incidents, accidents and significant near misses and emerging trends i.e. increased sickness absence rates, ensuring sufficient resources are in place for Assistant Directors, Operational Managers and DSCs to progress preventative and corrective actions to address non-conformances in a timely manner.

ACT

Seek assurances from Assistant Directors, Operational Managers and DSCs to confirm:

- Lessons have been learnt following major incidents, accidents and significant near miss events and actions have been fully implemented;
- All corrective and preventative actions have been taken in response to independent reviews of the University's SMS;
- Matters highlighted following inspections by external bodies, i.e. insurance providers, loss adjusters, full-time trade union officials, trade union safety representatives, regulatory bodies and emergency services personnel have been fully addressed;
- All staff and students within their area of responsibility have received necessary health and safety induction, information and training.

Director of Estate Services

In addition to the duties described under the Heads of Department/Service/School and Directors of Service section, the Director of Estates is accountable to the relevant Chief Officer for ensuring safety, health and wellbeing arrangements and management systems as they apply to all work undertaken by staff within Estate Services or under its auspices. This would include the majority of work undertaken by external contractors involving premises owned by the University or under its control. All contracted activities should be effectively planned, organised, controlled, monitored, audited and reviewed in order to comply with the requirements of the relevant statutory provisions with regards to health, safety, fire and emergency arrangements, the University's OHS Standards and the Estate Service's SMS.

The Director of Estates is also responsible for ensuring the fabric of all University buildings, and fixed installations fitted therein, are regularly inspected, managed and maintained so that the built estate is fit for its intended purpose, complies with current legislation and provides a safe and secure environment for all users.

The Director of Estates is supported by Estate Services Assistant Directors, the Estates Health, Safety and Compliance Manager, DSCs, Project Managers, Building Surveyors, Clerks of Work, Heads of Sections, as well as the Head of SHaW and the corporate SHaW Advisory Team, to fulfil their responsibilities, duties and reporting requirements.

The Director of Estates reports to SACSOH as a management representative on the performance of the Estates Service's SMS, any significant contractor health and safety issues, incidents and matters of non-compliance, the status of major capital projects and future building/maintenance plans which are likely to impact on the safety, health and wellbeing of others.

In accepting authority, the Director of Estates is expected to:

PLAN

- Make adequate arrangements, including engaging suitable competent health and safety advice, to fully consider the design, planning and management phases of all construction, maintenance, renovation, refurbishment and upgrading works, as required by Construction (Design and Management) (CDM) Regulations 2015. This should include procedures to effectively scrutinise contractors at tendering stage, methods to ensure contractors are sufficiently inducted before work commences and management arrangements during the duration of the contract. The Director of Estate Services acts as the Client's representative (The 'Client' being the University) in terms of all construction projects carried out under the CDM Regulations;
- In accepting the delegated 'duty to manage' under the CDM Regulations, appoint competent specialist advisers as required by specific legislation, e.g. management of asbestos, fire regulations, and control of legionella, LOLER etc.;
- Ensure the University's Built Estate Maintenance Strategy is sufficiently resourced to minimise disruption as a result of unforeseen major defects or component failures which may adversely impact of the safety, health and wellbeing of building users and interrupt the delivery of the University's core business activities;
- Develop and maintain effective working relationships with key stakeholders including the Head of SHaW, encouraging frequent communication and flow of information on relevant estate issues to ensure staff, trade union representatives, students, and third parties are adequately informed on matters affecting their health and safety and their

work activities. Information should include planned temporary works, permanent changes to building facilities, plant and equipment and all contracted activities and operations on campus including major construction projects.

- DO
 - Ensure that the common parts, facilities and services of the University's estate are adequately risk assessed and maintained in a planned preventative manner to provide a safe and secure environment, without risks to the safety, health and wellbeing of those engaged with the University including visitors and members of the public;
 - Use a risk assessed, collaborative process for space planning which meets the statutory provisions placed on the University (i.e. The Workplace (Health, Safety and Welfare) Regulations, Building Regulations (Scotland) 2004 (Non-domestic), and the Equality Act of 2010 plus others), and which anticipates future needs and which fosters positive staff and student interaction and engagement;
 - Ensure all relevant statutory notifications are made, including those for construction projects as stipulated by the Construction (Design and Management) Regulations 2015 and work carried out which involves asbestos (both notifiable and non-notifiable work as required). All notifications should be shared with the Head of SHaW for purposes of monitoring, and other interested parties that may be affected by the work;
 - Establish a management system to organise, implement and maintain the recommendations and improvements identified by fire risk assessments based on the degree of risk;
 - Where third parties, contractors or research and knowledge exchange partners occupy the University's premises, take appropriate measures to ensure full cooperation and coordination of all interested parties, ensuring roles and responsibilities are defined and all risks properly managed so there is no adverse impact from their activities on the staff and students of the University.

CHECK

- Regularly review OHS performance in relation to areas of significant risk on campus, such major capital construction projects and building facilities health and safety reports (including statutory inspections of plant and equipment), and seek assurances from Assistant Directors that recommendations made in inspection and audit reports have been acted upon;
- Provide a written annual OHS assurance statement to the USCO, which should include an appraisal of the OHS performance of the University's construction and maintenance contractors based on periodic reviews of risk assessments, sample audits, site inspections and feedback from project progress meetings. It should also include significant incidents, accidents and near miss events.

ACT

Seek regular assurances from Heads of Sections to confirm:

- Students, staff and members of the public visiting the University are protected from the risks of construction work;
- Actions arising from audits, inspections, statutory notifications and risk assessments (including fire risk assessments) have been implemented.

Head of Safety, Health and Wellbeing

In addition to the duties described under the Heads of Department/Service/School and Directors of Service section, the Head of Safety, Health and Wellbeing (SHaW) is the University's recognised competent health and safety adviser at the corporate level and reports directly to the USCO. The appointment of a 'competent person' is a statutory requirement (The Management of Health and Safety at Work Regulations 1999) and must be someone with the necessary skills, knowledge and experience to manage health and safety matters effectively.

In accepting authority as the competent person, the Head of SHaW is expected to:

PLAN	
•	Oversee the development and review of the University's Occupational Health, Safety and Wellbeing Policy on behalf of the USCO, and associated annual objectives for the corporate SHaW team. Ensure the OHSaW strategy is aligned to the University's strategic plan; Establish an Occupational Health Service to ensure statutory activities such as health surveillance, advice on reasonable adjustments, sickness absence monitoring, referrals for work related issues or personal issues which impact on work and health promotion take place to support the continued attainment of a safe, healthy work and study environment; Develop and maintain effective working relationships with key stakeholders including the Executive Deans, Professional Services Directors, HoDs, with regulatory bodies, emergency services, the University's insurers, trade union and staff safety representatives, local councils, NHS Scotland and other internal and external interested parties. Encourage frequent communication and flow of information to ensure staff, trade union representatives, students, and third parties are adequately informed on matters affecting their safety, health and wellbeing.
DO	
•	Establish, implement, maintain and continually improve the University's corporate SMS, in accordance with the ISO 45001:2018 standard, statutory requirements and sector specific guidance; Establish a corporate health and safety risk register and risk profile and assist the USCO to review it at least annually; Appoint and direct suitably competent, effective assistance to advise the University on specialist statutory requirements associated with radiation fire chemical and
	biological safety and occupational health. This includes the appointment of a Radiation Protection Adviser to ensure compliance with statutory registration and authorisation conditions;
•	Through benchmarking and sector networking, continually improve the University's corporate health and safety management system to ensure it is accredited, robust and properly maintained;
٠	Report to SACSOH as an Ex-Officio Member and attend Faculty and Departmental safety, health and wellbeing meetings (or nominate others to attend) to provide competent health and safety advice and legal updates on relevant matters to Executive Officers and HoDs;
•	Advise senior management on the continual improvement of the corporate SMS and

methods for implementation;

•	Provide advice and guidance to HoDs on how to investigate incidents, accidents and
	significant near miss events;

- Act as the primary contact for the Health and Safety Executive (HSE), the Scottish Environment Protection Agency (SEPA) and other relevant organisations on health and safety regulatory matters;
- Develop and deliver a safety, health and wellbeing competency framework to ensure staff are sufficiently trained to discharge their health, safety and wellbeing duties. This includes preparing and delivering appropriate OHS induction training to newly appointed HoDs;
- Act as a member of the core IMT and provide the Chair with health and safety advice to inform strategic decisions in the event of a major incident and oversee the BCM programme established by the Risk and Resilience Manager;
- Plan, establish, implement and maintain the University's Health and Safety Audit Programme and review findings from other monitoring activities including health surveillance, occupational hygiene monitoring, safety inspections and fire drill exercises. Report in summary the significant findings of these activities to SACSOH.

CHECK Provide an annual written SHaW assurance statement to the USCO, which should include an analysis of all University incidents, accidents, near misses and occupational ill-health data and an appraisal of the University's corporate SMS. On an annual basis evaluate the Key Control Checklist assurance statements relating to Occupational Health, Safety and Wellbeing and report the findings to SACSOH. Support the USCO to conduct periodic reviews of the University's corporate SMS to test its continuing suitability, adequacy and effectiveness. ACT Stop work activities immediately, which present a risk of serious harm to individuals or to the University. In exceptional circumstances, this may include issuing an internal Zero Harm Notification Report to prevent serious personal injury and/or damage to buildings, plant, equipment and the environment;

• Undertake regular CPD training and development to maintain a sufficient level of competency to fulfil the requirements of the post.

Head of the Internal Audit Service

The Head of the Internal Audit Service is responsible for conducting an independent annual health and safety assurance survey as part of the Key Controls Checklist process. The checklist is issued to HoDs during May each year and a summary of the findings is presented to the Head of SHaW.

Head of Governance and Public Policy

The Head of Governance and Public Policy assists the University Principal and Vice-Chancellor and the USCO by arranging appropriate health and safety leadership training for Court and Executive Officers.

In order to establish an effective 'downward' communication system, the Head of Governance and Public Policy cascades minutes of Executive Team meetings, which contain safety, health and wellbeing related actions to relevant members of staff as necessary.

5.4 Operational Management Roles

Research Line Managers and Supervisory Staff

Principal Investigators/Research Managers/Research Supervisors

Principal Investigators (PIs)/Research Managers or Research Supervisors are generally experts in their field of research, and are expected to have up-to-date knowledge about the risks associated with their research area. They are responsible and accountable to the HoD for the safety, health and wellbeing of their researchers, and for others who may be affected by the research activities under their control.

The PI, Research Manager/Supervisor is expected to understand and implement the requirements of the University's OHS Standards, as well as the departmental safety, health and wellbeing arrangements. All research managers/supervisors must be competent to supervise staff/students, and know the safety critical aspects of the tasks involved.

In accepting authority, they are expected to:

PLAN	
٠	Establish operational arrangements relevant to the expected risks associated with the research being undertaken and/or the work area being utilised;
•	Ensure effective methods of communication are in place, such as regular health and safety meetings, to ensure researchers are adequately consulted on matters affecting their safety, health and wellbeing;
•	Become familiar with the support available within the department to assist with the implementation of the University's OHS Standards and the departmental OHS arrangements and guidelines, i.e. the DSC, the Depute DSC and additional departmental voluntary health and safety staff such as first aiders, fire safety coordinators/assistants, the radiation protection supervisor etc.;
•	Ensure that they and the researchers they supervise, are competent to conduct the research work being undertaken and participate in mandatory and recommended OHS training and necessary refresher training, as set out in the applicable University's OHS Standard (currently under development);
•	Ensure a comprehensive risk management system is in place for all research/workplace hazards. This should take into account the use of hazardous substances, lone working or fieldwork, so that all associated significant risks are sufficiently identified, assessed and controlled. Where possible risks should be eliminated in a proportionate manner and risk assessments should be regularly reviewed to prevent injury and ill health;
•	Ensure research supervisors and post-doctoral researchers are trained in risk assessment techniques and are competent to supervise others in their research activity;
•	Ensure risk assessments are conducted at the introduction stage of a new or modified research proposal, and before purchasing equipment, or introducing new processes etc.;
	Ensure all appropriate licenses and permits are in place for any proposed preject

• Ensure all appropriate licences and permits are in place for any proposed project before applying for a research grant or adopting an experimental protocol;

 Ensure effective communication mechanisms and arrangements are in place wit 	hin
the research area to inform researchers, students, contractors, third-parties, visit	ors
and members of the public in the event of an emergency.	
DO	
Approve risk assessments for activities within their research area;	
Refer researchers to the University's Occupational Health Service where health	
surveillance is identified by risk assessment;	
 Implement OHS Standards relevant to their research area; 	
Ensure all health and safety incidents, accidents, near miss and cases of work rela	ted
ill health are reported to the HoD and DSC;	
Provide assistance to the Head of Department in the event of a major incide	nt,
accident or significant near miss event as required;	
 Participate in appropriate mandatory health and safety training. 	
CHECK	
 Monitor workplace safety compliance to ensure that control measures are effective 	ely
implemented;	
 Participate in the investigation of reported incidents, accidents and significant needed. 	ear
miss events within the work area they supervise;	
 Monitor the progress of actions arising from audits and inspections relevant to the second sec	eir
research area;	
 Monitor training plans and safety inductions of their researchers to ensure that the 	У
remain current.	
ACT Adapt compating and preventative actions to prevent a recommence of reported	
Adopt corrective and preventative actions to prevent a reoccurrence of reported	
incidents, accidents and significant hear miss events within their area of	
Telesconsibility,	
 Take action to rectily deliciencies such as unsale acts or conditions, failure to folic 	
safe systems of work, a lack of planned maintenance or inadequate facilities, or	vv

Post-doctoral Researchers/Research Fellows/Technicians

Post-doctoral researchers, other researchers such as Research Fellows and Technicians may be delegated day-to-day supervisory responsibility for ensuring research is carried out without causing unacceptable risks to health and safety.

Post-doctoral researchers/Research Fellows/Technicians should be competent in the research area and aware of the risks inherent in the techniques, equipment and methods they use; they ensure the effective implementation of controls identified as part of the risk assessment process.

They should be:

- Effective supervisors supportive, good at coaching and mentoring, excellent role models and take appropriate actions when made aware of health and safety management deficiencies;
- Trained to carry out risk assessments and communicate information on risks and control measures to their researchers and others affected by the research;
- Aware of the University's OHS Standards and comply with local departmental safety arrangements;

- Trained to use safe laboratory and work practices as well as safe systems of work and reinforce the importance of good housekeeping and occupational hygiene;
- Report all health and safety incidents, accidents and near miss events to their line manager;
- Able to contribute to the investigation of accidents and near misses that have affected their research teams.

Professional Services Line Managers and Supervisors

Line managers and supervisors are responsible and accountable to the HoD and are expected to have an up-to-date knowledge of the risks associated with the work under their control.

In accepting authority, they are expected to:

PLAN	
٠	Be aware of the legal requirements for their area of work and be able to identify and
	manage these risks;
•	Ensure line management reports are held responsible for following safe working
	practices and overall health and safety performance of their area;
•	Ensure a comprehensive risk management system is in place so that all associated
	significant risks are sufficiently identified, assessed and controlled and where
	possible eliminated. Risk assessments should be regularly reviewed to prevent
	injury and ill health.
•	Ensure relevant trained staff assess the risks associated with work activities before
	work begins and are competent to supervise others;
•	Ensure all people under their direction have adequate information about the risks and
	risk controls that apply to their work, and that relevant training and supervision
	arrangements are in place;
•	Ensure new recruits and existing staff participate in mandatory OHS induction, OHS
	training and necessary refresher training as set out in the applicable University OHS
	Standard;
•	Take into account a staff members capabilities and level of competency before
	assigning tasks.
DO	
•	Approve risk assessments for activities within their area of responsibility;
•	Refer employees to the University's Occupational Health Service where health
	surveillance is identified by risk assessment;
•	Implement OHS standards and positive, proactive safety in the workplace;
•	Hold staff and students accountable for their safe working practices when undertaking
	work within their area of responsibility;
•	Ensure all health and safety incidents, accidents, near miss and cases of work related
	ill health are reported to the HoD and DSC;
•	Identify OHS staff training needs and include health and safety performance as part
	of the ADR process;
•	Participate in appropriate health and safety leadership training as appropriate to the
	role

CHECK
 Actively participate in workplace OHS inspections and audits; Monitor workplace safety compliance to ensure that control measures are effectively implemented; Participate in the investigation of reported incidents, accidents and significant near miss events within the work area they manage/supervise; Monitor the progress of actions arising from audits and inspections relevant to their area of responsibility; Monitor training plans and safety inductions for employees to ensure that they remain current.
ACT
 Adopt corrective and preventative actions to prevent a reoccurrence of reported incident, accidents and significant near miss events within their area of responsibility; Take action to rectify deficiencies such as unsafe acts or conditions, failure to follow safe systems of work, a lack of planned maintenance or inadequate facilities, or otherwise reporting to their DSC or line manager.
5.5 Compliance Support Roles

Safety, Health and Wellbeing Advisory Team

The SHaW Advisory Team is led by the Head of Safety, Health and Wellbeing and reporting to the USCO, is responsible for ensuring that Executive Officers, HoDs and DSCs are aware of the requirements of existing and proposed health and safety legislation. The Team supports the Head of SHaW to monitor, measure and continually improve the effectiveness of the University's corporate SMS thus ensuring the necessary arrangements are implemented and maintained across the organisation.

The SHaW Advisory Team is expected to:

PLAN	
•	Develop and maintain a corporate SHaW Risk Register and Risk Profile;
•	Develop health and safety action plans to address the most significant corporate
	health and safety risks as identified by the corporate health and safety risk register and profile;
•	Develop and maintain effective working relationships with key stakeholders including
	HoDs, regulatory bodies, emergency services, the University's insurers, trade union
	and staff safety representatives, local councils, NHS Scotland and other internal and
	external interested parties.
DO	
•	Provide competent advice and support to HoDs and other health and safety related posts on the interpretation and implementation of University OHS Standards, health and actety logiclation and practical advice on how to gain improvements in
	performance;
•	Review and update arrangements for implementing the OHS Policy statement including written OHS Standards:

- Provide specialist competent advice to HoDs as necessary in relation to radiation, biological, chemical, fire safety and occupational health;
- Keep up-to-date with relevant health and safety legislation and best practice and providing regular updates to Heads of Department and DSCs as appropriate;
- Maintain and develop the University's safety, health and wellbeing webpages to ensure all interested parties have access to information and instructions relating to safety, health and wellbeing;
- Attend and support Departmental/Directorate Health and Safety Committee meetings;
- Communicate lessons learnt following safety incidents to HoDs and DSCs and any changes to relevant legal requirements;
- Establish networks and forums for exchange of good practice and collaborate with the Occupational Health Service, Estates Services, HR and SEES and other professionals;
- Administer the University's incident reporting system, reviewing its data and support the Head of SHaW to investigate significant incidents, accidents, near miss events and cases of work related ill-health to determine root causes. Submit reports on behalf of the Head of SHaW to the HSE under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013;
- Support HoDs and DSCs to address any significant breaches of health and safety compliance immediately and elevate where necessary any serious health, safety and wellbeing issues, to the Head of SHaW where there is need for clear direction, including those involving contractors;
- Provide guidance to HoDs and DSCs on how to investigate incidents, accidents and near miss events;
- Liaise with the HSE, SEPA and other relevant organisations on health and safety regulatory matters;
- Continually improve the University's corporate SMS by introducing digital solutions to support greater staff engagement and reporting;
- Develop and maintain the University's business continuity/emergency response policy and associated plans to ensure the University is fully prepared to manage a major incident;
- Lead and develop an annual health, safety and wellbeing promotion and campaign programme to retain the NHS Scotland Healthy Working Lives Gold Award and to raise awareness of specific safety, health and wellbeing issues;
- Develop and assess fire safety arrangements and test procedures for effectiveness;
- Support the agenda for wellbeing, protecting health at work and ensuring occupational health issues are effectively managed, including occupational hygiene monitoring to satisfy the Control of Substances Hazardous to Health Regulations 2002;
- In consultation with stakeholders support high levels of engagement and competency by developing, organising, delivering and evaluating the corporate health, safety and wellbeing training programme for staff;
- Undertake regular CPD training and development to maintain a sufficient level of competency.

CHECK

• Provide the Head of SHaW with regular performance monitoring reports set against KPIs, audit findings, insurance reports escalation of significant incidents, benchmarking against other sector institutions and regular Executive Team briefings;

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- Conduct and coordinate Health and Safety audits and other monitoring activities including health surveillance, occupational hygiene monitoring, safety inspections and fire drill exercises. Report significant findings to the Head of SHaW;
- Assist HoDs and DSCs during external audits and inspections;
- Maintain an information governance management system to ensure all corporate SHaW documentation and records are factually correct, accurate and appropriately stored and can be easily accessed by members of staff and others engaged with the University.

ACT

 Maintain a mechanism for controlling and implementing the review and revision of OHS Standards.

Occupational Health Service

The Occupational Health Service consists of a number of specialist nurses, whose aim is to support managers to achieve their statutory duties to protect and promote the health, safety and wellbeing of University staff.

The Occupational Health Services Team supports the Occupational Health Physician who acts as the clinical lead for occupational health at the University and is appointed by the Head of SHaW.

The Occupational Health Physician provides expert advice on the following matters:

- The scientific assessment and guidance on the safety, workplace health and welfare of staff;
- The provision of health assessments and health surveillance of staff exposed to health hazards at work as identified via risk assessment;
- The rehabilitation and recommended changes to work for staff with temporary or permanent disabilities.

Faculty/Professional Services Safety, Health and Wellbeing Managers/Advisers (or equivalent)

Each Executive Officer appoints (as appropriate to the size and scale of the risk) a Faculty/Professional Services Safety, Health and Wellbeing Manager/Adviser or equivalent, to provide competent health and safety advice and support. As a senior member of the Faculty/Professional Services management the role involves leading on safety, health and wellbeing matters, maintaining up-to-date arrangements to implement the University's Occupational Health, Safety and Wellbeing Policy Statement and monitoring its performance. The role ensures that safety, health and wellbeing risks and issues are considered in all business decisions made within each Faculty/Professional Services Directorate.

The Faculty/Professional Services Safety, Health and Wellbeing Managers/Advisers (or equivalent) are expected to:

PLAN

- In conjunction with the Executive Officer/Directors and HoDs, assist with the development of a faculty/professional services risk register and risk profile, identifying any gaps which need addressed and regular review documentation;
- Assist the relevant Executive Officer to develop suitable management arrangements and a safety, health and wellbeing plan to comply with the University's OHS

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Standards and to address the most significant health and safety risks as identified by the risk register and profile;

- Lead on the Faculty/Professional Services Safety, Health and Wellbeing Plan, the development of procedures and the establishment of performance standard to support continual improvement;
- Develop and maintain effective working relationships with interested parties including the corporate SHaW team, HoDs, regulatory bodies, emergency services, the University's insurers, trade union and staff safety representatives, local councils, NHS Scotland and other internal and external interested parties. Attend Departmental Safety Committee meetings as required.

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•	In collaboration w	ith HoDs and D	SCs within each Faculty or Directorate	develop and

- In collaboration with HoDs and DSCs within each Faculty or Directorate, develop and establish a robust system for the identification and control of all hazards and risks within the department, collate data and monitor performance;
- Provide competent advice and support to HoDs and other health and safety related posts within the Faculty/Professional Services Directorate on the interpretation and implementation of University OHS Standards and practical advice on how to gain improvements in performance;
- Guide and support Executive Officers to ensure risks are appropriately assessed, monitored, recorded and managed appropriately;
- Keep up-to-date with relevant health and safety legislation and best practice and provide regular updates to Executive Officers, HoDs and DSCs as appropriate;
- Coordinate the Faculty/Professional Safety, Health and Wellbeing Committee meeting, supporting the Executive Officer as Chair, to ensure risks and issues are discussed and appropriate decisions made and implemented;
- Provide feedback on new and revised OHS Standards to the Head of SHaW during consultation exercises;
- Establish networks and forums for exchange of good practice;
- Ensure all incidents, accidents and near misses related to Faculty/Professional Services staff have been reported to the SHaW team and investigated timeously by the relevant HoD in conjunction with the DSC, and recommendations are implemented to prevent recurrence. Completed investigation reports should be submitted to the SHaW team in a timely manner to ensure compliance with RIDDOR Regulations;
- Escalate any Faculty/Professional Services SHaW issues to their Executive Officer as necessary;
- In collaboration with Departmental Business Continuity Coordinators, develop and maintain the business continuity/emergency response plans and associated documents to ensure each Faculty/Professional Services Directorate is fully prepared to manage a major incident;
- Lead initiatives to share and promote health and safety best practice within the Faculty/Professional Services Directorate to facilitate continual improvement. These initiatives may be led and supported by the Faculty/Professional Services Safety, Health and Wellbeing Manager/Adviser or equivalent, on behalf of the Executive Officer as appropriate;
- Assist the University's Fire Safety Adviser to assess and implement fire safety arrangements and test procedures for effectiveness within areas of responsibility;

I

•	In collaboration with HoDs within each Faculty/Professional Services and the SHaW
	team, support high levels of engagement and competency by developing, organising
	and evaluating specific health, safety and wellbeing training courses for staff;

- Identify OHS induction and training requirements for staff, visitors, contractors and third parties and deliver suitable training to meet those needs. Ensure records are maintained as required;
- Setting up a programme to allow their Executive Officer to monitor OHS performance against University OHS standards as well as the Faculty/Professional Services Safety, Health and Wellbeing Plan to include, for example, workplace inspections and the fulfilment of induction and training needs of staff and students;
- Promote a climate in which safety has a high priority, and where individuals are clear about their responsibilities and safety objectives;
- Contribute to the retention of the NHS Scotland Healthy Working Lives Gold Award by promoting University wellbeing campaigns in the Faculty/Professional Services Directorate and acting as an ambassador for health and wellbeing;
- Undertake regular CPD training and development to maintain a sufficient level of competency.

CHECK

- Provide the Executive Officer with regular performance monitoring reports set against KPIs, audit findings, training data, escalation of significant incidents, benchmarking against other sector institutions;
- Carrying out periodic inspections and audits of the Faculty/Professional Services Directorate and of departments to examine the effectiveness of the management arrangements and risk controls for health and safety;
- Oversee other monitoring activities including health surveillance and occupational hygiene monitoring. Maintain an information governance management system to ensure all Faculty/Directorate OHS documentation and records are factually correct, accurate and appropriately stored and can be easily accessed by members of staff and others engaged with the University;
- Contribute to SACSOH by presenting papers, reports, and information as requested by the Executive Officer, progressing any actions arising and provide suggestions for improvement.

ACT

• Maintain a mechanism for controlling and implementing the review and revision of Faculty/Directorate health, safety and wellbeing management arrangements.

Estates Services Health, Safety and Compliance Manager

The Estates Health, Safety and Compliance Manager is the named 'competent' person in relation the work activities undertaken by or under the control of Estate Services, and has a leading role in assisting the Director of Estates Services to achieve compliance. Working closely with senior management and Heads of Sections within Estates Services, and the SHaW Team, their role is to encourage an operational culture in which safety has a high priority, is regularly promoted and where individuals are clear about their roles, responsibilities and objectives. Although accountable through the Assistant Director Operations to the Director of Estates, they act as an independent and objective body to review and evaluate issues and risks within the Estates Services Directorate. The functions of the role are very similar to those of the Faculty Safety, Health and Wellbeing Manager/Adviser.

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In addition, they oversee and monitor statutory examinations and testing of plant and equipment in relation to local exhaust ventilation, legionella management controls, LOLER inspections, pressure vessel systems etc. within the prescribed timescales (please note this not an exhaustive list). Copies of reports containing significant issues and recommendations should be shared with the corporate SHaW team and Faculty Health, Safety and Wellbeing Managers/Advisers.

Departmental Safety Coordinators

Departmental Safety Coordinators (DSC, formally known as Departmental Safety Convenors) provide a coordinating role within departments and acts as the main point of contact for championing health, safety and wellbeing issues as delegated by the Head of Department. Their role is generally combined with another departmental post.

The DSC is appointed by the Head of Department to coordinate the implementation and monitoring of the department's operational arrangements and the University's OHS Standards throughout the department to meet the requirements of the University's OHSaW Policy Statement. They work closely with the Faculty/Directorate Health, Safety and Wellbeing Manager/Adviser to continually improve standards and implement the Departmental Health, Safety and Wellbeing Plan.

The DSC (or equivalent) is expected to:

2LAN
 In conjunction with the HoD, assist with the development of a department risk register and risk profile, identifying any gaps which need addressed and regular review documentation;
 Assist the HoD to develop suitable operational arrangements and a departmental safety, health and wellbeing plan, based on a gap analysis, to address the most significant health and safety risks as identified by the departmental risk register and profile;
 Involve and consult staff and students in decision making involving their safety, health and wellbeing;
• Ensuring there is a mechanism to disseminate appropriate health and safety information to all staff and students, visitors and contractors.
00
 Support the HoD to implement the University's OHS Standards by leading on the implementation of the Departmental Health, Safety and Wellbeing Plan, the development of operational arrangements and the establishment of performance standards to support continual improvement;
 Advise and assist the HoD to periodically review safety, health and wellbeing arrangements within the department including risk assessments;
 Keep up-to-date with relevant health and safety legislation and best practice and providing regular updates to the HoD as appropriate;
• Supporting the HoD, in their role as Chair of the Departmental Health, Safety and Wellbeing Committee meetings, providing information and reports on progress with health and safety actions as required;

- Provide feedback on new and revised OHS Standards to the Head of SHaW during consultation exercises;
- Establish networks and forums for exchange of good practice;
- Ensure all incidents, accidents and near misses related to departmental staff and students have been reported to the HoD and to the corporate SHaW team. As directed by the HoD, investigate incidents/accidents/near miss events and recommend corrective and preventative actions to the HoD to prevent recurrence. Completed investigation reports should be submitted to SHaW in a timely manner to ensure compliance with the RIDDOR Regulations;
- Escalate any departmental SHaW issues to their HoD as necessary;
- Facilitate an up-to-date risk assessment log to be used by PI's, Managers and Supervisors to enable efficient monitoring and assist the HoD to establish whether risk assessments have been carried out comprehensively across all relevant departmental activities;
- Regularly remind PI's, Managers and Supervisors to take adequate precautions with regard to any new or existing safety hazards within the department and seek advice from the Faculty Safety, Health and Wellbeing Manager/SHaW if appropriate;
- Support the Departmental Business Continuity Coordinator to develop and maintain the business continuity/emergency response plans and associated documents to ensure each department is fully prepared to manage a major incident;
- Assist the University's Fire Safety Adviser by inspecting fire safety arrangements and within areas of responsibility and reporting faults to the Departmental committee;
- Identify OHS induction and training requirements for staff, visitors, contractors and third parties and deliver suitable training to meet those needs. Ensure records are maintained as required;
- Regularly remind staff who receive visitors and engage with contractors to provide them with relevant health and safety information and instructions;
- Undertake regular CPD training and development to maintain a sufficient level of competency.

CHECK

- Liaise with relevant plant, equipment and processes owners within the department to check these are appropriately maintained and safe to use;
- Liaise with PI's, Managers and Supervisors to check appropriate risk assessments are being undertaken within the department, reporting deficiencies identified to the HoD;
- Ensure PIs/Supervisors provide staff and students under their control with appropriate training for the job they are expected to carry out;
- Co-ordinate health and safety monitoring by means of regular safety inspections and reporting the findings to the Departmental Safety Committee. Ensure actions are completed in a timely manner by those with delegated responsibilities;
- Oversee other monitoring activities including health surveillance and occupational hygiene monitoring. Maintain an information governance management system to ensure all departmental OHS documentation and records are factually correct, accurate and appropriately stored and can be easily accessed by members of staff and others engaged with the University;
- Contribute to SACSOH by providing papers, reports, and information as requested by the HoD, progressing any actions arising and provide suggestions for improvement;

• Monitor progress made in meeting the objectives contained within the departmental safety, health and wellbeing plan.

ACT	
•	Maintain a mechanism for controlling and implementing the review and revision of
	departmental health, safety and wellbeing management arrangements;
•	Providing relevant health and safety information to the Faculty/Directorate Safety
	Health and Wellbeing Manager for submission to SACSOH and attend the

Faculty/Directorate Safety, Health and Wellbeing Committee meetings as required.

Other Departmental Roles

The University recognises and supports the enormous role played by staff volunteers across the organisation who assist the University each day to meets its statutory obligations and to embed a compliant, positive safety culture. Roles include CoSHH Assessors, Display Screen Equipment Assessors, Fire Safety Coordinators and Assistants, First Aiders, Hazardous Waste Coordinators, Manual Handling Assessors, Mental Health First Aiders and Radiation Protection Supervisors.

5.6 Duties of all Staff

Everyone engaged with the University of Strathclyde has a responsibility for adhering to OHS Standards and associated arrangements, communicating safety issues and messages, managing risks and getting involved in promoting and maintaining a positive health and safety culture.

In particular, all University employees engaged to undertake work, including full time, part time, agency, casual workers, volunteers, paid researchers and staff under temporary contracts, have a personal legal duty as defined in Section 7 of the Health and Safety at Work etc. Act 1974 to:

- Abide by all controls, instructions, information and training provided;
- Challenge unsafe acts, behaviours and conditions;
- Take reasonable care for their own health and safety and that of others who may be affected by their acts or omissions;
- Co-operate with the department to enable it to comply with its statutory health and safety duties;
- Carry out all work, research and study activities safely and in accordance with the University's OHS Standards, Local Rules or any other relevant instructions;
- Understand the hazards associated with their work activities and engage with the risk assessment process;
- Use and maintain safety equipment and personal protective clothing correctly;
- Not knowingly disregard, interfere or misuse anything provided in the interests of safety, health and wellbeing;
- Not damage the fabric of any University building or connect plant and equipment to services, other than standard electrical sockets, without prior agreement with the Director of Estate Services;
- Complete mandatory health and safety training courses, including induction training and maintain an individual health and safety training record to demonstrate personal competency;
- Be familiar and fully co-operate with emergency and evacuation procedures and comply with instructions given by DSCs, Fire Safety Co-ordinators, First-Aiders, Security Wardens and Emergency Services Personnel;

- Notify their HoD, line manager or academic supervisor as soon as possible to set up a Personal Evacuation Plan (PEEP) if assistance is required to evacuate;
- Notify their line manager or academic supervisor if they have a condition or change in circumstances affecting their health and safety which may be caused by or made worse by work, study or research activities;
- Report all accidents, incidents, near misses, work related ill-health and unsafe acts to their line manager or Departmental Safety Coordinator as soon as possible;
- Support a positive safety culture by suggesting continual improvements and complying with those introduced.

Where a staff member knowingly disregards the requirements of any OHS Standard or associated arrangements, they may be subject to the disciplinary process as set out in the University Disciplinary Procedure produced by Human Resources.

6. Duties of all Students

All students while on University premises, external placements and field trips, or when travelling abroad as part of their studies, have responsibilities in terms of their own safety, health and wellbeing and in respect of others.

All students must:

- Take care of their own actions and not put themselves or others at risk;
- Follow all safety, health and wellbeing instructions, precautions and rules provided by academic and technical supervisory staff;
- Report any shortcomings in health and safety arrangements to their academic supervisor;
- Report any accident, incidents and near miss events to their academic supervisor.

7. The University of Strathclyde Students' Association

The University of Strathclyde Students' Association (USSA), Strath Union, is a separate legal entity to the University, and as such, engages its own competent advice on safety, health and wellbeing matters and abides by its own Health and Safety Policy.

As an organisation involved in providing considerable support to the USSA, the University takes an active role in supporting the USSA's general health and safety arrangements. SHaW carry out an annual support visit where progress with safety, health and wellbeing objectives and targets are reviewed. The information collected is reported to Court as part of the annual SACSOH report.

A representative of the USSA, Strath Union, is invited to attend SACSOH.

8. Contractor/Service Providers

All University Contractors and Service Providers are required to comply with the University's *Local Rule: Engaging External Service Providers* while working on the University's premises, and any other arrangements applying to the specific work activity. The University requires that contractors ensure their activities are planned so as to not endanger University staff, students and all other interested parties and to keep disruption to others to a minimum.

All contractors are required to:

- Comply with the University's Occupational Health, Safety and Wellbeing Policy statement, OHS standards, guidance and local rules;
- Comply with the safety, health and wellbeing conditions specified in the contract and with all statutory requirements;
- Employ persons competent to carry out their duties without risk to the health and safety of themselves and others (this includes the employment of sub-contractors);

• Contractors are expected to follow appropriate industry guidance and best practice at all times.

HoDs must gain permission from Estate Services and the University's Fire Safety Adviser before undertaking any work involving building fabric, services or permit-controlled work before any work activity commences.

University staff are responsible for inducting and managing their relevant contractors who provide services to the University, and/or work on University premises or undertake work activities on behalf of the University.

9. Collaborative Engagement with External Partnerships

The University works with many external organisations and individuals, which brings a great deal of benefit to all involved. In all such collaborative engagements based on University premises, the responsibilities of each party for managing and monitoring health and safety must be agreed and documented prior to the commencement of work activities.

These partnerships are managed within the same framework and principles set out in this OHS Standard. The SHaW Department and Estate Services should always be consulted before arrangements are made to engage external research partners.

10. Consultation, Committees and Forums

The University Court is responsible for establishing an Occupational Health and Safety Committee, chaired by the University Secretary and Compliance Officer, through which it consults its employees on matters relating to safety, health and wellbeing. The SACSOH (Statutory Advisory Committee for Safety and Occupational Health) is constituted in accordance with the Safety Committees and Safety Representatives Regulations 1977 and for the purposes of the Health and Safety (Consultation with Employees) Regulations 1996.

As permitted, the safety representatives appointed by the University's recognised Trade Unions have confirmed that they represent all staff for consultation purposes and therefore there are currently no elected employee representatives (non-Trade Union) sitting on SACSOH.

Role of Trades Union Safety Representatives

The University of Strathclyde ensures that arrangements are in place to enable staff and their representatives' every opportunity to cooperate effectively in promoting and developing measures to ensure a healthier and safer workplace of all employees and interested parties.

The University fully supports the functions of Trade Union Safety Representatives. These are described below:

- To investigate potential hazards and dangerous occurrences/causes of accidents in the workplace;
- To investigate complaints concerning safety, health and wellbeing matters;
- To carry out health and safety inspections of the workplace;
- To represent staff in consultation with HSE inspectors and receive information from them;
- To attend SACSOH Committee meetings, local departmental health and safety committees.

Role of Staff Safety Representatives

At a departmental level, the HoD may appoint staff safety representatives to sit on the departmental safety committee. In such circumstances, staff safety representatives are accorded the same rights as those who are affiliated to a Union. The University is committed to providing all such staff with the appropriate training and support necessary to the role.

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11. Mandatory Health and Safety Training

Participating in mandatory health and safety training, commensurate with an individual's management and/or operational role is expected at all levels of the organisation. Staff are able to demonstrate a clear understanding of safety, health and wellbeing risks through the attainment of the following qualifications (or recognised equivalents), and by attending or completing internal health and safety training courses (organised by the SHaW Dept.) described in the table below:

Organisational Role	Mandatory Training Course
Governance and Leadership Roles	IOSH Leading Safely
Senior Management Roles	 IOSH Leading Safely *HoD SHaW Legal Responsibilities
Operational Management Roles	 IOSH Managing Safely (as a minimum standard) *Principles and Practices of Risk Assessment #*COSHH Essentials (online course) Accident Investigation
Compliance Support Roles (excluding the Occupational Health Physician)	 *NEBOSH National General Certificate IOSH Managing Safely (as a minimum standard) *Principles and Practices of Risk Assessment *COSHH Essentials - online course **COSHH Assessors Accident Investigation
SACSOH members Faculty Safety/Professional Services Safety, Health and Wellbeing Managers/Advisers (or equivalent) Departmental Safety Coordinators	 IOSH Managing Safely (as a minimum standard) #NEBOSH National General Certificate
All staff	 *Part 1 - H&S Induction *Display Screen Equipment (DSE) Awareness - online course *Manual Handling Awareness - online course *Stress Awareness - online course

*Training courses described above should be refreshed every 3 years. # If appropriate to the role/level of risk

12. Documentation and Records

The requirements to meet this standard are described in this document and are supported by additional documents referenced throughout.

The requirement for managing this document can be found in the OHS Management Standard entitled Document Control, Records Management and Retention (*currently under development*).

13. Communication

This Standard should be communicated to all staff, students, contractors, visitors and other interested parties through appropriate routes. The latest copy of this standard is available on the University's Occupational Health, Safety and Wellbeing webpages.

14. Tools

University Occupational Health and Safety Information sheets (See attached Appendices)

- 1. The University of Strathclyde Committee of Court Statutory Advisory Committee on Safety & Occupational Health (SACSOH)
- 2. Faculty/Directorate Health and Safety Committee
- 3. Departmental Health and Safety Committee
- 4. Specialist Safety Committees and Forums
- 5. The University of Strathclyde's Safety, Health and Wellbeing Organisational Management Structure

15. Compliance

This OHS Standard aims to meet the requirements of the following legislation and regulations and any future applicable updates, amendments or re-enactments:

Health and Safety at Work etc. Act 1974

Safety Committees and Safety Representatives Regulations 1977

Health and Safety (Consultation with Employees) Regulations 1996

Management of Health and Safety at Work Regulations 1999

Genetically Modified Organism (Contained Use) Regulations 2000

Control of Substances Hazardous to Health Regulations 2002

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

Construction, Design and Management (CDM) Regulations 2015

Managing for Health and Safety HSG65 (2013)

Helping Great Britain Work Well, HSE 2016

HE Sector-Level Health, Safety and Wellbeing Strategy 2016-2020, UCEA

Leadership and Management in Health and Safety in Higher Education Institutions, USHA (2015)
Health and Safety Management Profile (HASMAP) USHA (2015)

Leading Health and Safety at Work UCEA/USHA (2008)

Responsible Research, Published by Institution of Occupational Health and Safety/USHA (2012)

ISO 45001:2018 Occupational Health and Safety Management System

The University of Strathclyde Strategic Plan 2015-2020

The University of Strathclyde, Occupational Health, Safety and Wellbeing Strategy 2016-2021

<u>The University of Strathclyde, Occupational Health, Safety and Wellbeing Policy Statement v1.1</u> (Sept 2019)

16. Document History

Changes to this document are maintained in the SHaW Document Control Register which is held by the Head of SHaW.

APPENDICES – TOOLS

APPENDIX 1

University Occupational Health and Safety Information Sheet

The University of Strathclyde - Committee of Court - Statutory Advisory Committee on Safety & Occupational Health (SACSOH)

Introduction

The University of Strathclyde recognises the importance of consulting its staff on safety, health and wellbeing matters to create a healthy, safe and secure working environment. The Statutory Advisory Committee on Safety & Occupational Health (SACSOH) has been convened to provide a forum for cooperation, communication and consultation between staff, students and the trade unions on occupational safety, health and wellbeing matters, thus recognising our legal duty on this matter. The principal aim of SACSOH is to reduce the number of workplace accidents and cases of work related ill health.

The Committee's meeting and reporting calendar follow that of the University's academic and reporting year, namely 1st August to July 31st. SACSOH meets three times a year and follows a cycle of health and safety planning; setting priorities for the forthcoming year; monitoring progress; and review of progress, which includes actions taken, items carried over and planning for the following year.

Chaired by the USCO, the Committee comprises of senior members of staff representing all Faculties, Professional Services, Trade Union health and safety members representing all staff, and a University of Strathclyde Students' Association member representing the student body. As permitted, the Trade Unions have confirmed that for safety, health and wellbeing matters, they represent all staff for consultation purposes; therefore, there are no elected employee representatives (non-Trade Union) on the committee. Individual Committee members are provided with suitable training to assist them with their role.

Terms of Reference

SACSOH meets three times per year to fulfil its remit and carry out the following:

- Provide a mechanism for the effective consultation with all staff through the Trade Union Health and Safety representatives on matters affecting their health, safety and wellbeing;
- Ensure that a suitable health and safety management structure is in place within the University, to maximise the protection of the health, safety and security of all staff, students, visitors and contractors and to ensure legislative compliance;
- Plan and report to the Committee on progress in relation to safety, health and wellbeing objectives and priorities;
- Review and approve all corporate OHS written arrangements, including the OHSaW Policy and associated written standards and supporting documentation;
- Monitor the implementation and operation of the University's Occupational Health, Safety and Wellbeing Policy statement and management arrangements, to ensure the key risks are identified, and appropriate control measures are in place via reports from:
 - 1. Executive Officers;
 - 2. The Head of Safety, Health and Wellbeing;
 - 3. The Director of Estate Services;
 - 4. The Head of Security Services;
 - 5. The Director of Human Resources;
 - 6. The Director of Student Experience;

- 7. Each of the Faculty/Professional Services Representatives relating to matters escalated from departmental safety committees in their area;
- 8. The President of USSA, Strath Union.
- Consider any findings following health and safety inspections of the workplace and any investigations of accidents, incidents, ill health, cases of occupational disease or dangerous occurrences undertaken by Trade Union representatives;
- Consider reports from the Health and Safety Executive and other relevant enforcement authorities;
- Consider safety, health and wellbeing matters raised by the Executive Team where appropriate;
- Review the provision of health and safety training for staff;
- Monitor and review the 3-year rolling OHS Audit Programme;
- Ensure effective methods are utilised for the dissemination and communication of safety, health and wellbeing information in the University;
- Form sub committees, where appropriate, to consider specific, specialist safety, health and wellbeing matters;
- Review information provided to the committee and report regularly to the Executive Team and Court on the University's SHaW performance; including appraising Senior Officers on accidents and incidents which pose a major risk.

The Constitution of the Committee is as follows:

- i. **Ex-Officio Members**: The University Secretary and Compliance Officer (Chair of the Committee) (in their absence a member of the University Executive Team, as nominated by the USCO), a member of Court (appointed by Court), Head of SHaW and the Health and Safety Manager.
- ii. **Faculty and Professional Services Representatives**: One representative nominated by the Executive Dean of each Faculty and one representative for Professional Services nominated by the USCO.
- iii. **Trade Union Representatives**: One representative nominated by each of the University's recognised Trade Unions (UCU, Unison and Unite).
- iv. **Management Representatives**: Executive Officers, the Director of Human Resources, the Director of Estate Services, the Director of Student Experience and the Head of Security Services (or their nominated representative).
- v. A Student Representative: One representative from USSA, Strath Union, is nominated. This will normally be the President of Strath Union, who remains a member of the Committee for the length of their term in office.
- vi. **Other individuals**: Persons from within or out with the University may be invited to attend or support the work of the Committee as required by the Chair. This currently includes the Chief Executive of Strath Union, or nominee.
- vii. **Secretary to the Committee**: The Committee Chair appoints a Committee Manager to act in this role.

Duties of SACSOH members are as follows:

- All nominated members attend the committee meetings or send a suitable nominated representative.
- Provide reports to the Committee on agenda items as appropriate.
- Report to the Committee on annual plans, priorities and objectives; updating the Committee on progress at each meeting.
- Communicate relevant committee matters to other interested stakeholders as appropriate.
- Actively participate in suitable training for the role of committee member.
- Report any serious matters of concern to the Committee for the purposes of consultation.

Organisation

- The University publishes the meeting dates on an annual basis in advance of the first meeting of the new meeting cycle in September of each year.
- Meetings should not be cancelled or postponed except in exceptional circumstances, when the rearranged date should be announced as soon as possible.
- A meeting agenda, draft minutes and committee papers are made available on the SACSOH SharePoint site 7 days in advance of the next committee meeting.
- Responsibility for meeting arrangements and facilitation, as well as recording minutes and distributing committee papers lies with the SACSOH Committee Manager.
- Draft minutes of each meeting are agreed with the Chair of the Committee before circulating to committee members no later than 14 days after the date of each meeting.
- Terms of Reference, as defined by the USCO, are reviewed and approved by SACSOH on an annual basis.
- The Committee is quorate with 5 members present, i.e. the Chair of the Committee (or their nominated representative), two management representatives and two representatives for staff/students.

University Occupational Health and Safety Information Sheet

Faculty/Professional Services Directorate Health, Safety and Wellbeing Committee

Each Executive Officer is required to establish a Safety, Health and Wellbeing Committee comprising of the Faculty/Directorate Safety Manager/Coordinator and staff and student representatives. The purpose of the Committee is to review health and safety performance and ensure appropriate and consistent implementation of safety, health and wellbeing management arrangments across each Faculty/Directorate. Committees are chaired by the relevant Executive Officer, or nominated deputy. The Head of SHaW (or nominated representative) should be invited to attend. As a minimum requirement, the Committee should meet at least three times per year.

The Faculty/Directorate Committee supports the work of Departmental Safety Committees, as well as assisting Executive Officers to fulfil their duties and responsibilities by ensuring communication and sharing of best practice between Faculties/Directorates with similar hazards and risks.

The main remit of these groups are to:

- Promote a strong safety culture among staff and students;
- Share best practice;
- Identify areas for improvement using new and innovative practices and techniques;
- Identify any opportunities to be more effective and efficient in relation to the management of safety, health and wellbeing;
- Provide guidance, advice or support to colleagues in similar roles;
- Ensure effective communications between Faculites/Directorates on common issues;
- Identify any key issues or concerns and discuss potential solutions which supports continual improvement;
- Set high standards for safety, health and wellbeing which can then be replicated across the Faculty/Directorate and the University;
- Give sufficient consideration to OHS risks in all key business decision making;
- Review emergency arrangements, business continuity plans and fire safety arrangements;
- Review new and revised OHS Management Standards and provide feedback to the Head of SHaW during consultation exercsies;
- Approve an annual appraisal of the SHaW performance in relation to each Faculty/Directorate and the University's significant partnerships, collaborations and wholly owned companies;
- Review risks and issues which have been reported/escalated from Departmental Safety, Health and Wellbeing Committees;
- Monitor and review health and safety audit findings, safety inspections, learnings from major incidents, accidents and significant near misses and emerging trends such as increased sickness absence rates;
- Review matters highlighted following inspections by external bodies, i.e. insurance providers, loss adjusters, trade union safety representatives, regulatory bodies and emergency services personnel, to ensure recommendations have been fully addressed;
- Review the Faculty/Professional Servcies Directorate Risk Registers and Risk Profiles as well as the associated Safety, Health and Wellbeing Action Plans at least annually;
- Review safety, health and wellbeing induction and training for all staff and students within each Faculty/Directorate.

University Occupational Health and Safety Information Sheet

Departmental Safety, Health and Wellbeing Committee

The purpose of a Departmental SHaW Committee is to assist the HoD in fulfilling their health and safety functions. The Committee is appointed by the HoD and should comprise a group that is a representation of the Department; normally there are equal numbers of representatives of staff and managers, and may include one student.

The Faculty/Directorate Health & Safety Manager/Coordinator is an ex-officio member who can be called upon to provide competent advice to each Departmental Safety Committee as well as providing a link between the Departmental Safety Committee and the respective Executive Officer. Members are generally replaced on a phased basis, so that acquired knowledge is retained.

The Head of SHaW is an ex-officio member who may nominate a member of the SHaW team to attend in their absence. They may provide competent advice to the Committee as well as providing a link between the Committee and SHaW. Specialist advisers may attend dependent on the agenda.

The main remit of these groups are to:

- Promote a strong safety culture among staff and students;
- Share best practice;
- Identify areas for improvement using new and innovative practices and techniques;
- Identify any opportunities to be more effective and efficient in relation to the management of safety, health and wellbeing;
- Provide guidance, advice or support to colleagues in similar roles;
- Ensure effective communications between departments on common issues;
- Identify any key issues or concerns and discuss potential solutions which supports continual improvment;
- Set high standards for safety, health and wellbeing which can then be replicated across the Department, Faculty and the University;
- Give sufficient consideration to OHS risks in all key business decision making;
- Review emergency arrangements, business continuty plans and fire safety arrangements;
- Review new and revised OHS Management Standards and provide feedback to the Head of SHaW during consultation exercsies;
- Approve a written annual OHS assurance statement for all departmental activities, including significant partnerships, stand-alone entities and wholly owned companies, in relation to compliance with the Departmental Safety, Health and Wellbeing Plan;
- Review risks and issues which have been reported/escalated from staff, students and their representatives;
- Monitor and review health and safety audit findings, safety inspections, learnings from major incidents, accidents and significant near misses and emerging trends such as increased sickness absence rates;
- Review matters highlighted following inspections by external bodies, i.e. insurance providers, loss adjusters, trade union safety representatives, regulatory bodies and emergency services personnel, to ensure recommendations have been fully addressed;
- Review the Departmental Risk Registers and Risk Profiles as well as the associated Safety, Health and Wellbeing Action Plans at least annually;
- Review safety, health and wellbeing induction and training for all staff and students within each Department.

University Occupational Health and Safety Information Sheet

Specialist Safety Committees and Forums

Genetic Modification Safety Committee

The Genetic Modification Safety Committee (GMSC) has been convened to fulfil the statutory requirements of the Genetically Modified Organisms (Contained Use) Regulations 2014. The GMSC is a University committee representative of all departments where GM work is undertaken. The GMSC meets at least once a year.

The main remit of the GMSC is to:

- Monitor and review activities involving genetically modified (micro)organisms;
- Ensure that the approach to risk assessment is in accordance with the regulations and takes into account the independent advice provided by the Scientific Advisory Committee on Genetic Modification;
- Ensure that GM projects are classified appropriately according to the guidelines laid down in relevant legislation and that statutory notifications are made to the regulatory authority where appropriate;
- Ensure that satisfactory decisions on appropriate containment and control measures have been made; and
- Ensure that the University, its staff and its students cooperate and communicate efficiently on GM matters.

The constitution of the GMSC is that of both management and employees with its members representing the full scope of GM activities undertaken at the University of Strathclyde.

The constitution is described below:

- A chairperson as nominated by the GMSC;
- University Biological Safety Adviser;
- Biological Procedures Unit Manager;
- Four members of staff, with relevant expertise, who between them are able to represent all those who work with genetically modified material or who might otherwise be exposed to such work;
- A representative from any organisation(s) utilising the Biological Procedures Unit for the purpose of GM activities; and
- In Attendance a GMSC Administrator (Secretary to the Committee) and any person by invitation of the Committee.

The terms of reference for the GMSC are as follows:

- To ensure that the premises where the work is to be done are registered with the Regulatory Authority as a centre for genetic modification;
- Advise on the formulation of guidance documentation to cover work involving genetic modification;
- Advise staff who are carrying out work on GM organisms on the control measures necessary to carry out the work safely and meet legal requirements. Review systematically and in detail, every proposal involving genetic modification and provide advice on GM risk assessment;
- To give approval, where the Committee is satisfied, regarding the classification and containment proposals;
- Advise on statutory notifications to be made to enforcing authorities;
- To make recommendations to departments on suitable forms of information, instruction and training for workers performing experiments involving GM material;

- To verify that where a GM risk assessment indicates a requirement, the names of GM workers involved in or affected by GM work have been notified to the Occupational Health Service;
- To consider accidents and incidents involving GM material, to advise accordingly, and to confirm that SHaW and the HSE are notified (if necessary), of any significant release of genetically modified organisms which presented a hazard;
- Report to SACSOH annually.

SHaW Specialist Forums

SHaW Specialist Forums convened by Specialist SHaW Advisers for biological, chemical, fire, and radiation safety provide a forum for communication and consultation on specialist safety matters. The forums are attended by representatives from departments whose work activities fall within the scope of each relevant OHS Standard e.g. biological safety coordinators, chemical safety coordinators etc.

The remit of the SHaW Specialist Forums is to:

- Facilitate discussions on matters of current concern in relation to specialist health and safety;
- Provide a platform for formal consultation on specialist health and safety matters;
- Enable the sharing of best practice between the departments;
- Promote a strong safety culture among staff and students within the departments;
- Promote a collaborative approach to safety, health and wellbeing at the University of Strathclyde;
- Identify areas for improvement using new and innovative practices and techniques;
- Identify any opportunities to be more effective and efficient in relation to specialist safety management;
- Provide guidance, support and advice to colleagues in similar roles;
- Ensure effective communication between departments on common issues;
- Identify any key issues and discuss potential solutions which supports continual improvement.

OHSS00xv7

University Occupational Health and Safety Information Sheet

The University of Strathclyde's Safety, Health and Wellbeing Organisational Management Structure



For the latest version of this document please go to http://www.strath.ac.uk/safetyservices/44

Department of Physics Departmental Management Structure



Appendices for Local Rule

Title	Named Person	Telephone Extension	Email Address	Person providing cover in event of absence
Head of Department	Prof S. Kuhr	3364	stefan.kuhr@strath.ac.uk	Prof R. Martin (r.w.martin@strath.ac.uk)
Principal Investigator(s)	Please refer to Mrs G. Weir Department Manager	3267	gabrielle.weir@strath.ac.uk	Mrs C. Cheshire (cath.cheshire@strath.ac.uk
Acting Deputy Departmental Safety Convener	Mr J. Gillan	3052 (07816609171)	john.gillan@strath.ac.uk	Prof S. Kuhr (stefan.kuhr@strath.ac.uk)
Area Safety Convenors	Please refer to Addend	Please refer to Addendum 5		
Departmental Safety Committee	Prof S. Kuhr HoD	3364	stefan.kuhr@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
	Mr J. Gillan DSC	3051	john.gillan@strath.ac.uk	Prof S. Kuhr (stefan.kuhr@strath.ac.uk)
	Dr Y. Chen Biological & Chemical Protection Supervisor	3087	y.chen@strath.ac.uk	Dr J. McGilligan (james.mcgilliga@strath.ac.uk)
	Mr J. Revie Hazardous Waste Co-ordinator	3263	john.revie@strath.ac.uk	Dr Y. Chen (y.chen@strath.ac.uk)
	Prof J. Pritchard Department Laser Protection Supervisor	3120	jonathan.pritchard@strath.ac.uk	Dr K. Wilson Dr Konstantinos Lagoudakis Dr Wentao Li Prof. Alan Kemp
	Dr M. Wiggins Prof K. Ronald Ionizing Radiation Protection Supervisor	5785/3484	mark.wiggins@strath.ac.uk k.ronald@strath.ac.uk	Dr C. Donaldson (craig.donaldson@strath.ac.uk) Dr G. Manahan (grace.manachan@strath.ac.uk)
	Mr R. Wright University Radiation Protection Officer	4673	richard.wright@strath.ac.uk	To be confirmed

Departmental Safety Committee	Dr Nicolas Laurand IOP Research Team Leader	4109	nicolas.laurand@strath.ac.uk	Prof A. Kemp (alan.kemp@strath.ac.uk)
	Named Person	Telephone Extension	Email Address	Person providing cover in event of absence
	Prof K. Ronald ABP group	3483	k.ronald@strath.ac.uk	Prof C. Whyte (colin.whyte@strath.ac.uk)
	Dr Y. Chen Nanoscience group	3059	y.chen@strath.ac.uk	Dr B. Patton (brian.patton@strath.ac.uk)
	Dr K. Lagoudakis SSD group	3464	k.lagoudakis@strath.ac.uk	Dr P. Edwards (paul.edwards@strath.ac.uk)
	Dr H. Vaughan Teaching	3309	helen.vaughan@strath.ac.uk	Ms Jacqueline Gordon (jacqueline.gordon@strath.ac.uk)
Note: Roles appear in alphabetical order from this point				
Biological & Chemical Safety Supervisor	Dr Y. Chen	3087	y.chen@strath.ac.uk	Dr Brian Patton (brian.patton@strath.ac.uk)
Deputy Biological & Chemical Safety Supervisor (GM)	Dr B. Patton	3474	brian.patton@strath.ac.uk	
Clinical Waste Co-ordinator	Dr Y. Chen	3087	y.chen@strath.ac.uk	Mr J. Revie (john.revie@strath.ac.uk)
COSHH Assessment Co- ordinator	Dr Y. Chen	3087	y.chen@strath.ac.uk	Dr Brian Patton (brian.patton@strath.ac.uk)
Fume and Microbiological Safety Cabinet Coordinator	Dr Y. Chen	3087	y.chen@strath.ac.uk	Mr J. Gillan
Disability Contact	Dr H. Vaughan	3309	helen.vaughan@strath.ac.uk	Ms Jacqueline Gordon (jacqueline.gordon@strath.ac.uk)
Display Screen Equipment Assessor(s)	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
DSEAR Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
Estates Helpdesk Liaison Person	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
Fire Safety Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mr J. McFadden

Issue date : 01/09/21

Physics Department

Departmental Health and Safety Responsibilities

Addendum 3 cont'd

Title	Named Person	Telephone Extension	Email Address	Person providing cover in event of absence
Fire Safety Assistants (1) Level 1, John Anderson (JA)	Mr L. Hannah	4715	lewis.hannah@strath.ac.uk	Mr S. Ross (stephen.ross@strath.ac.uk)
(2) Level 2, (JA)	Mr T. McCanny	5329	thomas.mccanny@strath.ac.uk	Dr J. Bruckbauer (jochen.bruckbauer@strath.ac.uk)
(3) Level 3, JA	Dr P. Griffin	5813	paul.griffin@strath.ac.uk	Dr S. Ingleby (stuart.ingleby@strath.ac.uk)
(4) Level 4, JA	Mr K. Muir	3154	kenneth.muir@strath.ac.uk	Mr J. McFadden (john.mcfadden@strath.ac.uk)
(5) Level 5, JA	Mr J. Rose	3257	jordan.rose@strath.ac.uk	Mr J. McFadden (john.mcfadden@strath.ac.uk)
(6) Level 6, JA	Dr B. Hourahine	2325	benjamin.hourahine@strath.ac.uk	Dr J. McGilligan (james.mcgilligan@strath.ac.uk)
(7) Level 7, JA	Dr B. McNeil	4727	b.w.j.mcneil@strath.ac.uk	To be confirmed
(8) Level 8, JA	Mr T. Briggs	3376	timothy.briggs@strath.ac.uk	Dr M. King (m.king@strath.ac.uk)
(1) Level 1, TIC	Dr C. Donaldson	4812	craig.donaldson@strath.ac.uk	Dr P. MacInnes (philip.macinnes@strath.ac.uk)
(2) Level 5, TIC	S. Kelly	4120	sharon.kelly@strath.ac.uk	Dr C. Donaldson@strath.ac.uk
(3) Level 7, TIC	Mr R. Roger	4661	Ronnie.roger@strath.ac.uk	Dr B. Guilhabert benoit.guilhabert@strath.ac.uk
First Aiders	Please refer to signage	next to lifts		
Gas Safety Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)
Hazardous Waste Co-ordinator	Mr J. Revie	3263	(john.revie@strath.ac.uk)	Dr Y. Chen (y.chen@strath.ac.uk)
LEV Testing Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir (gabrielle.weir@strath.ac.uk)

Issue date : 01/09/21

Last review date : 03/10/24

Next review date : 01/09/25

Title	Named Person	Telephone Extension	Email Address	Person providing cover in event of absence
Lifting Operations Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir
Manual Handling Assessor	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir
Mental Health First Aider	Mrs G. Weir	3267	gabrielle.weir@strath.ac.uk	Dr B. Hourahine (benjamin.hourahine@strath.ac.uk)
MORR Co-ordinator	Mrs G. Weir	3267	gabrielle.weir@strath.ac.uk	
Overseas Business Co-ordinator	Dr F. Papoff	3178	f.papoff@strath.ac.uk	Dr Y. Chen (y.chen@strath.ac.uk)
Placement Organiser	Mr T. Briggs	3376	timothy.briggs@strath.ac.uk	Leanore Ferrans (Leanore.ferrans@strath.ac.uk)
Portable Appliance Testing (PAT) Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mr G. Keegan (g.keegan@strath.ac.uk)
PPE/RPE Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir
PUWER Co-ordinator	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mrs G. Weir
Laser Protection Supervisor	Prof J. Pritchard	5813	jonathan.pritchard@strath.ac.uk	Dr J. Pritchard (jonathan.pritchard@strath.ac.uk)
Deputy Laser Protection Supervisor (EQOP)	Dr K. Wilson	3363	kali.wilson@strath.ac.uk	Dr J. Pritchard (jonathan.pritchard@strath.ac.uk)
Deputy Laser Protection Supervisor (Nanoscience)	Dr K. Lagoudakis	3464	k.lagoudakis@strath.ac.uk	Dr J. Pritchard (jonathan.pritchard@strath.ac.uk)
Deputy Laser Protection Supervisor (SILIS)	Dr W. Li	5785	wentao.li@strath.ac.uk	Dr J. Pritchard (jonathan.pritchard@strath.ac.uk)
Deputy Laser Protection Supervisor (IOP)	Dr A. Kemp	4901	alan.kemp@strath.ac.uk	Dr J. Pritchard (jonathan.pritchard@strath.ac.uk)
Ionizing Radiation Protection Supervisor (JA)	Dr M. Wiggins	5785	mark.wiggins@strath.ac.uk	Dr G. Manahan (grace.manachan@strath.ac.uk)
Ionizing Radiation Protection Supervisor (TIC)	Prof K. Ronald	3484	k.ronald@strath.ac.uk	Dr C. Donaldson craig.donaldson@strath.ac.uk
University Supervising Officer	Mr J. Gillan	3051	john.gillan@strath.ac.uk	Mr J. Revie (john.revie@strath.ac.uk)

Issue date : 01/09/21

Addendum 4

Department of PHYSICS

Principal Investigators

Name	Area	Job Title	Extension	Email
Please refer to Gabrielle Weir	Department of physics	Departmental Manager	3386	gabrielle.weir@strath.ac.uk
Please refer to Susan Anderson	Research & Knowledge Exchange Services	Research support officer	5808	susan.anderson@strath.ac.uk

Addendum 5 - Area Safety Conveners

Name	Area	Job Title	Extension	Email
Gian-Luca Oppo	CNQO Group	Professor	3761	g.l.oppo@strath.ac.uk
John McFadden	Electronics Workshop	Technician	3257	john.mcfadden@strath.ac.uk
Paul Griffin	EQOP	Senior Lecturer	5813	paul.griffin@strath.ac.uk
Elmar Haller	EQOP	Senior Lecturer	5813/5749	elmar.haller@strath.ac.uk
Jonathan Pritchard	EQOP	Professor	5813	jonathan.pritchard@strath.ac.uk
Thorsten Ackemann	EQOP	Professor 3079		thorsten.ackemann@strath.ac.uk
Erling Riis	EQOP	Professor	3490	e.riis@strath.ac.uk
Aidan Arnold	EQOP	Reader	3357/3371	aidan.arnold@strath.ac.uk
Stefan Kuhr	EQOP	Professor (HoD)	3364	stefan.kuhr@strath.ac.uk
James McGilligan	EQOP	Chancellor`s Fellow	5789	james.mcgilligan@strath.ac.uk
David McKee	Marine Physics	Reader	3068	david.mckee@strath.ac.uk
Brian Patton	Nanobiophotonics	Senior Lecturer	3474	brian.patton@strath.ac.uk
Yu Chen	Photophysics	Reader	3087	y.chen@strath.ac.uk
John Revie	BCP	Technician	3263	john.revie@strath.ac.uk
Mark Wiggins	SILIS	Senior Research Fellow	5785	mark.wiggins@strath.ac.uk
Wentao Li	SILIS	Research Fellow	5785	wentao.li@strath.ac.uk
Paul Edwards	Semiconductor Physics	Senior Research Fellow 4369/3458 paul.edwa		paul.edwards@strath.ac.uk

Jochen Bruckbauer	Semiconductor Physics	Research Fellow	3480	jochen.bruckbauer@strath.ac.uk
Konstantinos Lagoudakis	EQNL	Reader	3463	k.lagoudakis@strath.ac.uk
Alessandro Rossi	SEQUEL	Senior Lecturer	3360	alessandro.rossi@strath.ac.uk
Ken Muir	Teaching laboratories	Technician	3154	kenneth.muir@strath.ac.uk
Helen Vaughan	Teaching	Senior Teaching Fellow	3309	helen.vaughan@strath.ac.uk
Craig Robertson	ABP	Research Fellow	5818	craig.robertson@strath.ac.uk
Craig Donaldson	ABP	Research Fellow	4812	craig.donaldson@strath.ac.uk
Kevin Ronald	ABP	Professor	3484	k.ronald@strath.ac.uk
Alan Kemp	IOP	Professor	4901	Alan.kemp@strath.ac.uk
Nicolas Laurand	IOP	Research Fellow	4109	nicolas.laurand@strath.ac.uk
Alan Kemp	IOP	Professor	4901	alan.kemp@strath.ac.uk
Stephen Ross	Mechanical Workshop	Technician	4715/3053	stephen.ross@strath.ac.uk
Gabrielle Weir	Admin Office	Departmental Manager	3386	gabrielle.weir@strath.ac.uk

Point	Specific Action	Action By:	Status at:
19	Review current	DSC, DDSC	Sept 2024:
	risk	& ABP	eRISKs for:
	assessments	group	ZOCZ: ABD Concerd Bick Assessment
	within ARP		7967: ABP General Risk Assessment
	group		497 Electrical test Protocol;
			7554 Closed HF system operation
			9746: Low power uwave testing
			8614: DSEAR Gas Bottles
			8617: DSEAR Swarf
			4325: Long Distance Driving Addendum
			Multiple other BAs for a range of specific purposes
			Standing Orders as part of HT and Ionising working practice
			drafted and reviewed by RPA and RPO (these are not on
			eRISK but are referenced by the general Risk Assessment)
			3 Ionising Radiation RAs drafted and reviewed by RPA and
			RPO covering 99% of anticipated operating scenario's
20	Commission	DSC. DDSC	Sept 2024:
	safety system	& ABP	Installation complete in Delayed by contractor staffing.
	in ABP group.	group	Commissioning in progress between ABP and Contractor

	2019							
No.	Gap Analysis Ref No.	Specific Action	Action by	Target Date	Completion Date			
19/15	1.5-3	During the next stage of infrastructure works ensure the works meet the welfare issues within the building by installing independent heating controls in each room.	TSM	Dec-19	£0.8M has been awarded this year 2022-23. New heating pipework will be live from Dec22. New £12M refurbishment works will start Dec24			

19/17	1.5-3	Manual Handling assessments should be reviewed	DDSC/ASC	Aug-19	Ongoing
19/21	4.2-1	To work with OHS&W during the current audit and implement any recommendations.	DSC/DDSC/ASC	Dec-19	Ongoing

	2023							
No.	Gap Analysis Ref No.	Specific Action	Action by	Target Date	Completion Date			
D	Training and Competence							
23/27	1.5-3	Implement Monthly checks - Laser interlocks	LRPS New system being installed	Oct-23				

Completed	In Progre	SS SS	Outstanding	

HOD = Head of Department (Stefan Kuhr)

DHOD = Deputy Head of Department (Robert Martin)

DPM = Departmental Operations Manager (Gabrielle Weir)

DSC= Department Safety Convenor (John Gillan)

LRPS=Laser Radiation Protection Supervisor (Jonathan Pritchard)

BSC = Chemical & Biological Safety Co-ordinator (Yu Chen)

SFM= SCAPA Facilities Manager (Mark Wiggins)

TSM= Technical Support & Safety Manager (John Gillan)

UFO=University Fire Officer (Alan Watson)

ASC=Area Safety Convenors

IOP= Institute of Photonics (Nicolas Laurand, Alan Kemp)

Health and Safety Gap Analysis, Department of Physics, University of Strathclyde

	Element 1.1 – Management Commitment and Responsibility								
No	Aspect to be analysed or question to be	Answer	Indicate	Status of	Target	Reference	Action Required		
	answered			implementation		Document			
1.1-1	Is there department health and safety	Yes	SharePoint	Updated Sept 24	(annual	Department	Reviewed annually		
	management arrangements in place?		and Safety		review)	Safety	by the safety		
			Drive			Arrangements	committee		
1.1-2	Does the health and safety management	Yes	Safety Drive	Updated Sept 24	(annual	Department	Reviewed annually		
	arrangements reflect senior management's				review)	Safety	by the safety		
	commitment regarding safety management?					Arrangements, P4	committee		
1.1-3	Is the health and safety management	Yes	Safety Drive	Updated Sept 24	(annual	Department Safety	Reviewed annually		
	arrangements appropriate to the size, nature				review)	Arrangements,	by the safety		
	and complexity of the department?					P46 -53	committee		
1.1-4	Are the health and safety management	Yes	Safety Drive	Updated Sept 24	(annual	Department Safety	Reviewed annually		
	arrangements relevant to a physics				review)	Arrangements,	by the safety		
	department?					P46 -50	committee		
1.1-5	Has the health and safety management	Yes	HoD	Updated Sept 24	01/10/24	Department	Reviewed annually		
	arrangements been reviewed and authorised		Physics		(annual	Safety	by HoD		
	by the accountable executive?				review)	Arrangements			
1.1-6	Has the health and safety management	Yes	SharePoint/Spider	Will be circulated	07/10/2	Department	Annual e-mail sent		
	arrangements been communicated, with visible		(pdf copy sent to	after approval	(annual	Safety	to Dept indicating		
	endorsement, throughout the organisation?		dept)		review)	Arrangements	updated. DSR on		
							SharePoint/Spider		
1.1-7	Is the health and safety management	Yes	Department	Updated Sept 24	04/09/24	Department	Reviewed annually		
	arrangements reviewed to ensure that it		Safety Committee		(annual	Safety	by the safety		
	remains relevant and appropriate to the				review	Arrangements	committee		
	organisation?								
	Element 1.2 – Safety Accountabilities								
1.2-1	Has the department identified an accountable	Yes	HoD	Updated Sept 24	01/10/24	Department	HoD selection		
	executive, irrespective of other functions, who		Physics			Safety	process		
	shall have ultimate responsibility and					Arrangements			
	accountability, on behalf of the department,								
	for the implementation and maintenance of								
	safety?								

1.2-2	Does the accountable executive have full control of the financial and human resources required for the safety operations?	Yes	Department of Physics Safety Budget allocation	Aug 24	1/08/24	Department of Physics accounts	Safety budget allocation each year
1.2-3	Does the accountable executive have final authority over all safety activities of the organisation?	Yes	Department structure SharePoint	Aug 24	1/10/24	A2.3.1	Reviewed annually by the safety committee
1.2-4	Has department identified and documented safety accountabilities of management as well as operational personnel, with respect to the safety?	Yes	SharePoint	Sept 24	1/10/24	Department Safety Arrangements	Reviewed annually by the safety committee
1.2-5	Is there a safety committee or review board for the purpose of reviewing safety performance?	Yes	Safety Committee	22 Nov 23 20 Mar 24 4 Sept 24	20 Nov 24	Minutes from department safety committee	Three safety committee meetings per year
1.2-6	Is the safety committee or review board being chaired by the accountable executive or by an appropriately assigned deputy, duly substantiated in the department health and safety management arrangements?	Yes	(Acting) Department Safety Convener	13 Nov 23 20 Mar 24 4 Sept 24	13 Nov 24	Minutes from department safety committee	Chair three safety committee meetings per year
1.2-7	Does the safety committee include relevant protection supervisors (lasers, ionising radiation and biological/chemical) as applicable?	Yes	SharePoint	04/09/24	(annual review)	Department Safety Arrangements	Reviewed every 3 years by the safety committee
		1.3 A	ppointment of Key Sa	afety Personnel			
1.3-1	Has the department appointed a person to manage and oversee the day-to-day operations of safety?	Yes	Department Safety Convener	Sept 24	(annual review)	Department Safety Arrangements	Reviewed by HoD
1.3-1	Does the person have a direct access or reporting to the accountable executive	Yes	Department structure	Sept 24	(annual review)	Department Safety Arrangements	DSC has direct access to HoD

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	concerning the implementation and operation of safety?		SharePoint				
1.3-2	Does the department safety convener responsible for administering the safety hold other responsibilities that may conflict his role as safety manager?	Yes	DSC is also Technical Support and Safety Manager	Sept 24	1/10/24	Department Safety Arrangements	Reviewed by HoD
		1.4 Coord	ination of Emergency	Response Planning			
1.4-1	Is there an emergency response/contingency procedures in place and are drills carried out?	Yes	Fire drills	Drill 23 Oct 24	Oct 24	Fire drill reports	Reviewed by the safety committee
1.4-2	Is feedback provided on performance during safety drills?	Yes	Fire safety coordinator	Report sent to Fire Officer	Oct 24	Fire drill reports	Reviewed by the safety committee
1.4-3	Is there a procedure for periodic review of fire safety drills and its continuing relevance and effectiveness?	Yes	Alan Watson Fire safey officer UoS Member of safety committee	Review of fire report 6 monthly	Oct 24	Minutes from department safety committee	Reviewed by the safety committee
			1.5 – Document	ation	•	• •	
1.5-1	Is there a top-level safety document which is approved by the SHAW?	Yes	Spider X	Sept 24	(annual review)	Department Safety Arrangements	Reviewed annually by the safety committee
1.5-2	Is the department safety framework in alignment with the regulatory safety framework?	Yes	Spider X	Sept 24	(annual review)	Department Safety Arrangements	Reviewed annually by the safety committee
1.5-3	Does the department maintain a record of relevant supporting documentation pertinent to the implementation and operation of safety?	Partially	Safety Drive	Sept 24	(annual review)	Safety Drive	Reviewed annually by the safety committee
1.5-3	Does the department have a safety implementation plan to establish its safety implementation process, including specific tasks and their relevant implementation?	Yes	Safety Drive (Annual Safety Plan)	Jan 2025	Jan 2025	Annual Safety Plan	Reviewed annually by the safety committee
1.5-4	Has the safety implementation plan been endorsed by SHAW?	Yes	Spider X	Jan 2025	Jan 2025	Annual Safety Plan	Reviewed annually by the OHWS

		Ele	ement 2.1 – Hazard Io	dentification			
2.1-1	Is there a process for the reporting of voluntary hazards/threats by all employees?	Yes	SIRIS	As and when occur	As and when	SIRIS online form	DSC or HoD to submit to SHAW within 24 hours
2.1-2	Is the process of reporting voluntary hazards/threats simple, available to all personnel and commensurate with the size of the department?	Yes	SIRIS	As and when occur	As and when	SIRIS online form	DSC or HoD to submit to SHAW within 24 hours
2.1-3	Does the department have procedures for investigation of all reported incidents/accidents?	Yes	SIRIS	As and when occur	As and when	SIRIS online form	DSC, HoD appropriate protection supervisors, SHAW & external agencies (RISTEC and ultimately HSE if deemed necessary by SHAW)
2.1-4	Are there procedures to ensure that hazards/threats identified or uncovered during incident/accident investigation processes are appropriately accounted for and integrated into the organisation's hazard collection and risk mitigation procedure?	Yes	SIRIS	Lessons learned from all incidents are distributed widely throughout department	Lessons learned from all incidents are distributed widely throughout department	Follow up reports on SIRIS dangerous occurrence stored on `I` Drive	DSC and HoD distribute lessons learned from all incidents throughout department
		2.2 – S	afety Risk Assessmer	it and Mitigation			
2.2-1	Are the risk assessment reports approved by principal investigators or at a higher level, where applicable?	Yes	PI or appropriately assigned staff member	All RA stored on eRisk, SharePoint and safety Drive	Continuous	Risk assessments on Safety Drive and the eRisk system	Reviewed annually by Area Safety Conveners/ PI`s

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2.2-1	Is there a procedure for periodic review of existing risk assessment? Is there a procedure for periodic internal audit/assessment of safety?	Yes 3.1 - Yes	All RA in laboratories – Continuous Improv Department Safety Committee	Sept 24 ement of SMS Updated Sept24	annually Nov 24	Safety inspection report on SharePoint Department Safety Committee	A percentage of the documents are reviewed every 6 months by safety inspection. Reviewed 3 times a year by the			
3.1-2	Is there a process for risk assessment reports to be submitted or highlighted for the principal investigators attention where appropriate?	Yes	Safety Inspection teams	Sept 24	Mar25	Minutes SharePoint Safety inspection report on SharePoint	safety committee Reviewed twice per year by the safety inspection teams			
			4.1 – Training and E	ducation						
4.1-1	Are personnel involved in conducting risk assessments provided with appropriate training?	Yes	SHAW e- Risk Assessment Training and Principles & Practice of Risk Assessment	On going	Dec 24	Safety training records on Spider	Reviewed annually by SHAW			
4.1-2	Is there evidence of organisation-wide safety induction to the department?	Yes	Safety Induction Training	On going	Oct 24	Safety training records on Spider	Reviewed every 3 months by DSC or HoD			
	4.2 – Safety Communication									
4.2-1	Is there evidence of organisation-wide communication of safety awareness and safety issues throughout the department?	Yes	Safety Bulletins	Various bulletins throughout the year	(6 monthly review)	Safety Bulletins on SharePoint	Reviewed every 2 months by DSC or HoD			
4.2-2	Is department safety regulations and guidance accessible to all relevant personnel	Yes	Spider X	Sept 24	Sept 24	Department Safety Arrangements	Reviewed by safety committee			



Welcome to **The Department of Physics Building and Health and Safety Induction**



Aim for today

- Building Induction
- Fire procedures

Fire escape routes

- Assembly points
- First Aid / Emergency procedures
 - Incident and accident reporting
- Introduction to Health and Safety Law
 - Health and Safety at Work Act 1974
 - Management of Health and Safety at Work Regulations 1999
 - Risk assessment, assessment labelling and risk register
 - Lone working
- Safety within the Physics Department
- Hazards and procedures in the workplace,
 - Control of Substances Hazardous to Health (COSHH)
 - Classification, Labelling and Packaging (CLP)
 - Safety data sheet
 - Compressed gas
 - Chemicals
 - Sharps
 - Fume cupboards
 - Cryo liquids
 - Waste disposal
 - Electrical safety
 - Safety signage
 - Laser safety
 - Biological safety
- Departmental contacts



Building Access

John Anderson normal open hours are 8am to 6pm (closes 10pm)

TIC Building normal open hours are 8am to 6pm (closes 10pm)

Postgraduates and undergraduates who wish to work outside the normal opening hours require an authorisation from their supervisor and the Safety Convenor.

- Training requirements for authorisation completion of the mandatory courses (Staff) or S17P (UG).
- Please see and update your training on Spider, <u>SPIDER-X: Members (strath.ac.uk)</u>
- An out of hours Red Card request form is on SharePoint, <u>New item</u> (sharepoint.com)
- Telephone Security Livingstone Tower (3333) or 0141 548 3333

(For mandatory training courses see Spider X)





1 Ims02101 (user)

Building Access – Safety Training

home tools

Physics

Physics Safety Induction

Staff

- · Physics Departmental Safety Arrangements
- Occupational Health and Safety induction Part 1
- Occupational Health and Safety induction Part 2
- Departmental Safety Induction Course (covers OHS Part 2)

SPIDERX

- Display Screen Awareness
- Manual Handling Awareness
- Principles and Practice of Risk Assessment
- COSHH Assessors
- · Fire safety awareness
- SHaW Leaflets
- Stress Awareness

Research centres & units additional regulations

Local Arrangements

- Control of Artificial Optical Radiation
- · Control of Chemicals
- · Control of Ionising Radiation

Group Induction

- ABP induction
- EQNL induction
- EQOP induction
- Institute of Photonics induction MORSE induction
- · Nanobiophotonics induction · Photophysics induction
- SCAPA induction
- SEQUEL induction
- SSD induction

- Physics Departmental Safety Arrangements
- · Occupational Health and Safety induction Part 1
- Occupational Health and Safety induction Part 2 Departmental Safety Induction Course (covers OHS Part 2)
- Display Screen Awareness
- Manual Handling Awareness
- · Principles and Practice of Risk Assessment
- COSHH Assessors

PGR

- · Fire safety awareness
- · Postgraduate Occupational Health and Safety Induction Module 1
- Postgraduate Occupational Health and Safety Induction Module 2
- · Postgraduate Occupational Health and Safety Induction Module 3
- · You can also access all training through the SHaW Training Catalogue SHaW Leaflets
- Stress Awareness

PGT

- · Please complete S17P
- SHaW Leaflets

UG

Please complete S17P

Visitors

- Visitor Safety Training Information
- Visitor H&S Information
- · SHaW Leaflets
- · Please complete S17P



Building Access – cont

Building security

- Do not give out the door code to anyone, Security and Estates staff have keys
- Do not allow anyone into the labs, Contractors and Estates staff should contact the Technical Support and Safety Manager (John Gillan in JA827) for access.

Richmond Street (fire exit)

- No entry, staff and wheel chair access only
- Please use the push button on the wall to exit
- The door will not open if you are standing in front of it

Toilets

- Located in the North and South Stairwells
- Accessible and gender-neutral toilets and shower areas are generally in lobby areas next to the lifts



Energy Conservation

We are working towards making this building a highly sustainable building.

You will note many energy saving measures in place to help achieve this such as:

- Timed water taps.
- Timed/sensor lighting.
- Centrally controlled heating, hot water and ventilation.

We all have a responsibility to play our part in ensuring a sustainable future therefore we ask you to:

- Report any fault to the Technical Support & Safety Manager Ext No.3051.
- Turn off equipment / lights when not in use.
- Not use personal kettles or other electrical equipment unless essential.
- Never use personal heaters as these will confuse the temperature sensors located around the building which in turn will affect the heating system.



Sustainable Travel

The building is equipped with up to date facilities to enable staff, students and visitors to travel sustainably and / or reduce the need to travel.

The following are available for use

- Bicycle shelters/vaults
- Individual shower areas

The building is conveniently located within walking distance to other university buildings, bus stops, train stations and the subway.

The University also have a fleet of electric pool cars for staff.

https://www.strath.ac.uk/sustainablestrathclyde/sustainabletravel/electric_cars

Management of Occupational Road Risk Standard link is <u>HERE</u>





Fire

- Fire is the most general hazard we must be aware of.
- Know what to do in the event of a fire and on hearing a fire alarm (continuous tone).
- Know all the escape routes from where you are working.
- Familiarise yourself with the 'Fire Action Notices' which are posted throughout the building.
- The weekly alarm test is every Thursday 9am in the John Anderson and 12.30pm on Friday in the TIC building.



Note: During exam times these times will change.

Rottenrow ∕↑√ İĦ È Level 8 JA823 JA822 JA821 JA820 Refug point JA824 JA819 2 **FIRE DOOR** FIRE FIRE DOOR FIRE DOOR KEEP CLEAR At all times Fire door HREAK GLAGS KEEP CLEAR AT ALL TIMES KEEP CLEAR AT ALL TIMES R3 JA818 JA817 R4 **İ** Break glass BREAK GLAGS JA825 JA816 Fire extinguisher FIRE DOOR Fire extinguisher/s KEEP CLEAR AT ALL TIMES JA815 JA827 JA828 Key Refuge point Refuge area JA813 R2 You are here JA814 FIRE DOOR JA829 KEEP CLEAR AT ALL TIMES Circulation & Escape Route JA830 MEAK GLAS JA812 Male Toilets Female Toilets JA832 JA810 General Purpose & JA831 ₹ İŧİ Fire Evacuation Lift JA811 R1 2 Fire Escape Stair JA833 JA809 ĒĽ FIRE DOOR HAR CLAR KEEP CLEAR AT ALL TIMES **Assembly Point** Fire **Richmond Street** FIRE DOOR JA808 KEEP CLEAR AT ALL TIMES Ż İ 🛉 JA801 JA802 JA803 JA804 JA805 JA806 JA807

Richmond Street

Level 7

Fire door



HILLAK GLAGS

Break glass



Refuge point

Refuge area



Assembly Points

Richmond Street



Level 6



Fire door



Break glass



Refuge

Refuge area



Assembly Points

North Eller

2












Break glass

HEAK GLAS





Fire - cont

If you discover a fire

- Raise the alarm by activating the nearest break glass call point.
- Immediately proceed by the nearest safe route to assembly points outside the building.
- Do not stop to collect personal items.
- Do not use lifts.



- Move well clear of the exits and the building.
- Do not re-enter the building until authorised to do so.



Fire - cont

Assembly points

John Anderson Building

- Concourse outside main entrance (level 5)
- Outside Richmond Street rear entrance (level 1)

TIC Building

- Albion Street Pavement
- Shuttle Street and garden area
- College Street pavement



First aid / accident Emergency number...... 2222

- First aid is provided by Security Wardens (Livingston Tower) and dedicated first aiders in the department. A list of first aiders is displayed next to the lift. First aiders are supplied with a British Standard compliant portable first aid kit.
- For any Emergency call 2222 on any internal phone or 0141548 2222. This number is staffed 24 hours a day.
- Tell them which building, which room, your name and what kind of emergency, (e.g. first aid or chemical spill).
- State if an ambulance is required.
- Stay in the area until help arrives.
- First Aid training is available at https://bookings.strath.ac.uk/Home/Course/2612



Incident and accident reporting

Report, without delay, <u>all</u> accidents, incidents and cases of occupational ill health to the Department Safety Convener even if no injury was realised.

In the case of an injury occurring, dangerous occurrences or fire, please complete an online form, <u>https://safe360.info-</u><u>exchange.com/safetyincidents</u>. (This replaces the S1 form).

Report any immediate danger to your supervisor in the first instance and if they are not available the DSC.

We will make inquiries and take action to prevent it happening to someone else. As required by law, serious accidents and incidents will be reported by SHaW to the Health and Safety Executive.



Health & Safety at Work Act 1974



Section 2 (1)-Employers Duty

"to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees"

And in particular

Section 2(2)

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(a) "Provide and maintain plant & systems of work that are, sfairp, safe and without risks to health".

phys

(b) "Have arrangements for ensuring, sfairp, safety and absence of risks to health in connection with the use, handling, storage and transport of articles & substances".

Section 2(2)

physic

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Strathclyde

(c) "Provide such information, instruction, training & supervision as is necessary to ensure, sfairp, the health & safety at work of his employees".

(d) "Sfairp as regards any place of work under the employers control, maintain it in a condition that is safe and without risks to health, and provide and maintain means of access and egress that are safe and without such risks".

Section 2(2)

physi

University of

Strathclyde

(e) "Provide and maintain a working environment for his employees that is, sfairp, safe, without risks to health, and adequate as regards facilities and arrangements for their welfare at work".

Section 2(3)

phys

- Prepare written general H&S policy
- If 5 or more employees

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- Organisation and arrangements for carrying out the policy
- Revise when appropriate
- Bring statement and any revision to notice of all employees



Section 7 - Duties of Employees

"Take reasonable care for health & safety of himself and other persons who may be affected by his acts or omissions

Co-operate with employer to enable him to meet his statutory obligations"



Section 8 - Interference & Misuse

"No person shall intentionally or recklessly interfere with or misuse anything provided in the interests of health, safety or welfare".



Section 9 – No Cost to Employees

"No employer shall levy, or permit to be levied on any employee of his, any charge in respect of anything done or provided in pursuance of any specific requirement of the relevant statutory provisions".



Management of Health and Safety at Work Regulations 1999



Management of Health & Safety at Work Regulations 1999

- Legal duty on employers to carry out risk assessments as first step in ensuring safe and healthy workplace
- Written record (5 or more employees)
- Identify preventive and protective measures
- Review assessments if no longer valid
- Risk assessments must be "Suitable and Sufficient"



What is "Suitable & Sufficient"?

- Identify all hazards
- Identify specific regulations
- Systematic approach
- Include non-routine operations
- Identify who is at risk
- Take existing control measures into account

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RISK ASSESMENTS

"A planned process during which hazards are identified and the extent of the risks involved are evaluated, taking into account existing precautions and their effectiveness".

Risk assessments are the most important and effective products of recent safety legislation.

All practical experimental work must have a risk assessment, check your lab safety folder and ask your supervisor.



Assessment labelling for eRisk, eCoshh...

Examples;

16-SILIS-SOP-OXAN

SILIS group, Safe Operating Procedures for Ox-An system that was written in 2016

14-EQOP-MH-ladder

EQOP group, Manual Handling assessment for ladder/s written during 2014

Document Type	Prefix –	Group	Assessment type		Description	Revision
	current		Suggested	alternative		R1, R2
	year					
Coshh	18-	BCP	CA			
Assessment						
Risk Assessment			RA	S20		
Safe Operating		SILIS	SOP		OXAN	R1
Procedures						
Method of Work			MOW			
Manual Handling			MH	S22-LC or S22-PP	Ladder	
Safety Training			ST		Lathe	
Emergency		EQOP	EP		JA314	R2
Procedures						
Fire Assessment			FA			
Machine record			М			
Declaration form			D			
Checklist			С			
School Pupils on				\$32d		
Work						
Experience:						
OH&S Induction						
Checklist						
Departmental				S24c		
Safety Inspection						
Report						
Record of				S19		
equipment						
running						
unattended						
Material Safety			MSDS			
Data Sheet						

All assessments must have a header/footer note stating,

- Issue date
- Last reviewed date
- Next review date.



Some examples of tasks requiring a Risk Assessment

- Work with display screen equipment
- Manual Handling operations
- Laser work
- Ionising Radiation work
- Work with chemicals
- Driving

All activities taking place within the department, must be risk assessed and the risks reduced to an acceptable level, by means other than personal protective equipment where possible.

All risk assessments should be transferred and reviewed on the eRisk platform,

https://safetysystems.strath.ac.uk/

Risk assessment training is available at <u>University of Strathclyde - DAT Booking -</u> <u>Principles and Practice of Risk Assessment (Online)</u>



Risk Register

Risk Definitions				Risk Rating Matrix				Risk Clas	Risk Classification		
The likelihood of harm from a particular hazard is determined using the following criteria				5	5	10	15		25	Risk Rating	Risk
1 May occur only in exceptional circumstances V.				5	5	10	15	20	25	1.2	Low
2 May occur given an unlikely sequence of events or failures Unlikely				4	A	9	12	16	20	1-5	LOW
3 Foreseeable under normal circumstances or past	Possible	7	3	*	0	12	10	20	4 - 9	Madium	
4 Easily foreseeable under normal circumstances			, e	3	3	6	٩	12	15	4-3	Mediam
5 Inevitable under the circumstances or known past incidents V. Lik			3		<u> </u>	v.	, v	12	13	10 - 16	High
				1 2	2	4	6	8	10	10 - 10	riigii
The severity of harm from a particular hazard is determined using the following criteria				Ľ			Ŭ.	, v		17 - 25	Very
1 No Injury / Pain or minor injury not require	 No Injury / Pain or minor injury not requiring first aid 			1	1	2	3	4	5		High
2 Minor injuries requiring first aid e.g. cuts or bruise	es. No lasting effects	Minor		1.1	1.1	- -	, č		Ŭ.		
3 Up to 3 days absence, flesh wound, bit	uising etc.	Moderate			1	2	3	4	5		
4 Requires over 3 days off work or a hospital visit. F	leportable to the HSE	Major			- · ·	-	-	· ·	-		
5 Single of multiple fatalities, long term disabili	ty or loss of limb	Fatal				Severity					
Control Effectiveness											
1 – Effective	2 -	Partially Effective							3 -	Poor	
Controls in place and proven to be working well through testing and monitoring.	Controls are not always in place, not proven to be working well, the is no testing or monitoring, or controls are being developed improvements in controls are required as soon as possible					 Controls have not yet been developed or implemented. Immediate action is required to control the risk before work continues 					
	Level of Impact / Disruption										
1 – Minor	2 – Moderate					3 - Major					
None or minor injury of ill health condition	Specified injury (RIDDOR) or several cases of condition.			ilar ill h	ealth	Fatality or more than 5 staff/students seriously injured or experiencing ill health condition.					
Affecting on lab, workshop, office, floor of a building	Affecting one b	uilding or several de	partme	artments. Affecting several buildings or entire campus.				ipus.			
None or limited failure of a system, process or service	Substantial failur	e of a system, proces	s or se	ervice.		Complete failure of a system, process or service				service	
Duration is not going to exceed Recovery Time Objectives (RTO) for priority activities recorded in Business Impact Analysis (BIA)	Duration is likely going to priority activities recor	exceed Recovery Time rded in Business Imp	Objec act An	tives (R alysis (TO)for BIA)	(RTO) for priority activities recorded in Business Impact Analysis (BIA).				ipact Analysis	
No area physically closed of or one small area closed off	Substantial area physical	tial area physically closed off e.g. more than one floor of a building. Entire campus closed off.									
Can generally be managed through existing day to day management processes.	Existing day to day management processes might not be able to manage the incident and consideration given to invoking Business Continuity Plans. Business Continuity Plans are highly likely to be invo					be invoked.					
Unlikely to be any media coverage.	Local media coverage.					National media coverage.					
No requirement to inform external regulators.	Requirement to inform external regulators but urgency.			is a ma	ter of	Requirement to inform external regulators as a matter of urgency and within specified timescales					
	Emergency services in attenda					Emergency services in attendance and remaining on site.				ing on site.	
						mana	getheir	ncident	without	additional support ource.	direction or

University of Strathclyde Glasgow





Lone Working

Although there is no general legal prohibition on working alone, the broad duties of the HSW Act and Management of Health & Safety at Work Regulations still apply. These require identifying hazards of the work, assessing the risks involved, and putting measures in place to avoid or control the risks.

Lone workers are those who work by themselves without close or direct supervision. They are found in a wide range of situations, some examples are given below:

- only one person works in the area, e.g. in small mechanical / electrical workshops, and also home workers if involved in tasks with inherent risks;
- people work separately from others, e.g. in some research laboratories;
- people work outside normal hours, e.g. cleaners, security, special production, maintenance or repair staff etc.



Safety with the Physics Department

University of Strathclyde Science

Safety within the Physics Department

- Make sure you receive the training necessary for the work you will undertake
- Complete the Occupational Health and Safety Induction Part 1 (online)
- Complete the OHS Induction Part 2 (S27 form)

 Enter your training requirements on table 1 as a personal training record Any completed training must be entered into your personal health and safety training record on Spider, <u>SPIDER-X: Members (strath.ac.uk)</u>

- Work with Radiation Sources and Biological Agents
 - Must register with SHaW before commencement of work
 - $_{\odot}$ Registration is online through Pegasus

Following this link to safety training site <u>Training | University of Strathclyde</u>



Safety within the Physics Department – cont

Safety, Health and Wellbeing

Welcome to the University's Safety, Health and Wellbeing Training Course Catalogue for 2021. SHaW is responsible for corporate safety management, occupational health, workplace wellbeing, risk management, emergency and business continuity planning and of course safety training. If you require assistance in relation to safety training, please contact Michael Moran, our Health, Safety and Training Adviser or a member of the SHaW team.



SHaW provide training courses in a vaformats, to meet the needs of the University staff and students. Formats include: Classroom, Online active, Online interactive with follow-up om based training and Zoom / Microsof

As part of the ongoing development of training es, additio nal training may be available is not listed in this training course catalogue. ery in relation to t vailable, or under development, please de ate to contact the SHaW Health, Safety

ing on the training course, or via

ning should be undertaken a dentified in the DAT booking system.

If training needs are not met, SHaW may be able to ning, or assist ir

Contact SHaW at

Training | University of Strathclyde



Michael Moran is the Health, Safety and Training Adviser, based within Safety, Health and Wellbeing.

The SHaW team has a wealth of experience to support training requirements with specialist and general health and safety expertise, including in Fire, Radiation, Chemical and Biological Safety,

NEW EMPLOYEES	
TECHNICAL STAFF	>
BIOLOGICAL	
COMPRESSED GAS	>
CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH	>
DANGEROUS SUBSTANCES AND EXPLOSIVE ATMOSPHERES	
DEPARTMENTAL SAFETY COORDINATOR	
DEPARTMENTAL SAFETY INSPECTION	
DISPLAY SCREEN EQUIPMENT	
DRUGS AND ALCOHOL	
DRY ICE	>
FIELDWORK	>
FIRE SAFETY	>
FIRSTAID	>
HEADS OF DEPARTMENT	
IOSH	
LIQUID NITROGEN	>
LOCAL EXHAUST VEBNTILATION	>
MANUAL HANDLING	>

CONTENTS

NEW EMPLOTEES	
TECHNICALSTAFF	
BIOLOGICAL	
COMPRESSED GAS	>
CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH	>
DANGEROUS SUBSTANCES AND EXPLOSIVE ATMOSPHERES	
DEPARTMENTAL SAFETY COORDINATOR	
DEPARTMENTAL SAFETY INSPECTION	>
DISPLAY SCREEN EQUIPMENT	
DRUGS AND ALCOHOL	
DRY ICE	
FIELDWORK	>
FIRE SAFETY	
FIRSTAID	
HEADS OF DEPARTMENT	
LIQUID NITROGEN	
LOCAL EXHAUST VEBNTILATION	>



Safety within the Physics Department – cont

The Departmental Safety Arrangements contain the safety issues covering work activities or situations in the Physics Department.

- They are the drivers for managing risk in the Department.
- Contains a list of personnel with a Departmental OHS Role.

The departmental arrangements are a legal document and will be enforced by the Head of Department, a copy is held on Spider X.



Safety within the Physics Department – cont

Who is legally responsible for Health and Safety?

- Head of Department
- Departmental Safety Convener
- Supervisors / Principal investigators
- •<u>YOU</u>

Policy

University Occupational Health and Safety Standard Roles, Responsibilities and Accountabilities



Hazards and procedures in the workplace



Hazardous Substances

For those storing, handling, transporting or using hazardous substances, a comprehensive assessment **must** be completed before such substances are brought onto the premises or used.

This ensures compliance with relevant legislation, including:

- The Control of Substances Hazardous to Health Regulations (COSHH)
- Hazard and packaging information for supply (CHIP 3) CLP
- Dangerous Substances and Explosive Atmospheres Regulations (DSEAR).

Forms are available on the SHaW webpage – Department Safety Convenor is available to provide assistance if required.



The Control of Substances Hazardous to Health Regulations 2002 (COSHH)

COSHH is a management tool which sets out eight basic measures which must be taken when working with chemicals.

These simple steps will help you assess risks, implement any measures to control exposure and establish good working practices.

- 1. Assess the risks
- 2. Decide what precautions are needed
- 3. Prevent or adequately control exposure
- 4. Ensure control measures are used and maintained
- 5. Monitor the exposure
- 6. Carry out appropriate health surveillance
- 7. Prepare plans and procedures to deal with accidents, incidents and emergencies
- 8. Ensure people are properly informed, trained and supervised

All COSHH assessments should be transferred and reviewed on the eCoshh platform, <u>https://www.coshh.strath.ac.uk/index.php</u>.

Take care when starting a new assessment use the material data sheet and not an existing eCoshh assessment.

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CHIP 3 (Hazard information and packaging for supply)

- Classify substance (Approved supply list)
- Assign categories of danger & risk phrases
- Provide safety data sheet
- Label
- Safe packaging
- Child-resistant closures
- Tactile danger warnings
- Mention hazards in advertisements



Health Effects of Hazardous Substances

Under CHIP 3, suppliers must classify chemicals under one or more of the following:

- Very toxic
- Toxic
- Harmful
- Corrosive
- Irritant
- Sensitising
- Carcinogenic
- Mutagenic
- Toxic for reproduction



Harmful/Irritant

Corrosive







Classification, Labelling and Packaging Regulation (CLP)

1 Dec. 2010	1 Dec. 2012	1 Jun. 2015	1 Jun. 2017			
Substances	All substances must be o	classified and	All substances classified	and labelled to CLP.		
	labelled according to CLF classifications must app	P. Both CLP and DSD ear on the SDS.	Only CLP classifications need appear on the SDS.			
	2-year derogation, to allow stocks already on the market to be onward supplied.					
Mixtures	May be classified and labelled according to either DPD or CLP. If labelled according to CLP, both DPD and CLP classifications must appear on the SDS		All mixtures classified and labelled to CLP. Only CLP classifications need appear on the SDS.			
			2-year derogation to allow stocks already on the market to be onward supplied.			
(DSD) Dangerous	Substances Directive		(SDS)) Safety Data Sheets		


The seven familiar DSD/DPD symbols pictograms

The nine GHS



The three new symbols have the following meanings:

Type of hazard	DSD/DPD symbol	CLP pictogram
May cause serious long-term health effects, such as carcinogenicity, mutagenicity, reproductive toxicity, respiratory sensitisation, specific target organ toxicity and aspiration hazard		
Less serious health hazards such as irritants, skin sensitisers and less severe toxicity (harmful)	×	
Contains gases under pressure	No symbol under the DSD and DPD	\diamond

(DPD) Dangerous Preparations Directive

(GHS) Globally Harmonised System of Classification and Labelling of Chemicals





(SDS) Safety Data Sheets

- Composition and/or ingredients
- Hazards
- First aid
- Fire fighting
- Accidental release
- Handling & storage
- Exposure controls
- Personal protection

- Physical & chemical properties
- Stability & reactivity
- Toxicological info
- Ecological info
- Disposal
- Transport
- Regulatory & other info

Compressed Gas cylinders

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 Always use the correct, three wheeled trolleys, for transporting cylinders and never move a cylinder with the regulator fitted.

physic

- Never use PTFE tape, grease or oil when fitting regulators. Any oil based product in an oxygen regulator can cause an explosion.
- Always use the correct gas regulator on the cylinder. Never mix gas types the regulators are designed to work with the gas they are made for.
- Always tether the cylinder with chains or clamps, never leave it free standing.

Compressed gas awareness training is available at https://bookings.strath.ac.uk/Home/Course/385





Chemicals

- Familiarise yourself with the laboratory Coshh and risk assessments before you start work.
- Keep quantities you are working with to the minimum required.
- Transport with care, in proper containers.
- Always label containers. Always use the full Chemical name, NO abbreviations.
- Always wash your hands after handling chemicals.
- Do not eat or drink in the labs.
- Always dispose of waste correctly.
- Keep the laboratory chemical inventory updated.

See University Local Rules for more information. Coshh essential training is available at <u>https://bookings.strath.ac.uk/Home/Course/149</u>







Chemicals

Chemicals can harm a person`s health by entering the body by:

- Absorption through the skin
- Ingestion through the mouth
- Inhalation to the lungs
- Injection by puncture of the skin

Wash bottles should have GHS pictograms







Sharps in the Department

Definition of a sharp

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A sharp is any object in a laboratory that has the capability to puncture the skin and thus permit the entry of chemicals, dirt or bacteria into the body.

phys

Sharps can include needles, machine tooling cutters, knives, steel scribes, scalpels, razors, scissors, test tubes (glass), beakers (glass).

Please use appropriate hazardous waste bin.



Fume Cupboards

- Always fully close the sash when access is not required
- Always keep the sash to the lowest height needed to work
- Never use them to store chemicals
 - Keep them clean and tidy
- Care should be taken if you are producing a toxic fume, contractors may be working on the roof, by the stacks.



Cryogenic Liquids

Cryogenic liquids are used in some Physics, teaching and research laboratories.

Liquid Nitrogen is very cold, –196° C. Liquid Helium is even colder –268° C.



If you touch any un-insulated container you will stick to it. Always wear proper cryogenic insulated gloves.

Always wear a face mask.

Never wear sandals or open shoes when handling cryogenic liquid, if you spill it on your socks it will give you deep frost bite.

Never travel in a lift with dewars of any cryogenic liquid. If it spills or the lift gets stuck it will boil off and suffocate you.

Liquid Nitrogen training is available at <u>University of Strathclyde - DAT Booking - Using</u> Liquid Nitrogen Safely within Universities







Blisters



The University of Strathclyde has a legal duty to ensure that all Hazardous Waste generated on campus is accurately identified and disposed of in a controlled manner through a licensed waste carrier. All General Waste e.g. food waste, mixed paper, plastic packaging, cans and foils, glass, and non-recyclables is to be segregated by students and staff at centralised recycling stations provided throughout the building.

University of Strathclyde Science physics 📚

Electrical Safety

- There is always a risk involved when working with electricity, particularly in supplies over 120 volts.
- Before using any electrical apparatus check that has been electrically tested (should have a PAT label on it).
- Take special care when your using portable hand tools, inspect them before use.
- When working on live circuits or equipment where authorised to do so, use supplies that are protected by R.C.D's.

User Visual Inspection

Item



- Check to ensure the appliance cables and connections appear to be in good condition
- Check cable insulation by passing the cable through your fingers checking for fraying, cuts or lumps



- No insulation tape must be used to repair the cable. Insulation tape is no substitute for the manufacturer's original cable insulation
- No terminal blocks to extend cables

Plug

Fuse,

Appliance

CE

&



- Ensure the cable is held tightly by the cable grip
- The plug must have insulated Live and Neutral pins



• Ensure there is no over heating or damage to the plug

- Is the correct fuse installed?
 - Any sign of fuse overheating?



- All appliances including plugs have an approved CE marking. If this is missing, report to your DSC
- Check the appliance for cracks, over heating or any damage

You must do a visual inspection of the appliance before use









SAFETY SIGNS

Look out for signs warning of hazards or giving useful information



BLUE = Compulsory

Failure to comply not only puts you at risk, but means you've broken the law.



YELLOW = Warning

Failure to take notice may put you at risk.



GREEN = Safety guidance

First Aid, Emergency Exits...



RED = Prohibitive

or

Fire





Laser Safety Training

Laser Safety training is available at University of Strathclyde - DAT Booking - Radiation: Laser Safety

Biological Safety Training

Biological Safety training is available at

<u>University of Strathclyde - DAT Booking - Biological Safety Training - Introduction - Modules 1 – 3</u> <u>University of Strathclyde - DAT Booking - Biological Safety Training - Module 4</u> <u>University of Strathclyde - DAT Booking - Biological Safety Training - Module 5</u> <u>University of Strathclyde - DAT Booking - Biological Safety Training - Module 6</u>





Department contacts

Departmental Safety Convener	Mr John Gillan	0141 548 (Ext.3051/3052)
Laser Safety Officer	Prof Jonathan Pritchard	(Ext.5813)
Deputy Laser Protection Supervisor (EQOP)	Dr Kali Wilson	(Ext.3363)
Deputy Laser Protection Supervisor (Nanoscience)	Dr Konstantinos Lagoudaki	s (Ext.3464)
Deputy Laser Protection Supervisor (SILIS/SCAPA)	Dr Wentao Li	(Ext.5785)
Deputy Laser Protection Supervisor (IOP)	Prof Alan Kemp	(Ext.4737)
Radiation Protection Supervisor (JA)	Dr Mark Wiggins	(Ext.5785)
Radiation Protection Supervisor (TIC)	Prof Kevin Ronald	(Ext.3484)
Deputy Radiation Protection Supervisor	Dr Craig Donaldson	(Ext.4812)
Chemical / Biological Advisor	Dr Yu Chen	(Ext.3087)
Deputy Chemical / Biological Advisor (GM)	Dr Brian Patton	(Ext.3474)
Hazardous Waste Co-ordinator	Mr John Revie	(Ext.3263)



Department contacts

Portable Appliance Testers;	Mr David Barclay (TIC building) Mr Ken Muir	(Ext.5818) (Ext.4394)
	Mr Tom McCanny	(0141 574 5329)
	Mr Ewan Maclagan	(Ext.4715)
	Mr John Revie	(Ext.3263)
Manual Handling Assessors	Mr John Revie	(Ext.3263)
	Mr John Gillan	(Ext.3051)
V.D.U. Assessors	Mr John Gillan	(Ext.3051)
C.O.S.H.H. Assessor	Dr Yu Chen	(Ext.3087)
Fire Safety Co-ordinator	Mr John Gillan	(Ext.3051)
Deputy Fire Safety Co-Ordinator	Mr John McFadden	(Ext.3257)
Departmental Disability Contact	Dr Helen Vaughan	(Ext.3309)
Deputy Disability Contact	Ms Jacqueline Gordon	(Ext.3369)
Computer Officer	Mr Timothy Briggs	(Ext.3376)
MORR Coordinator	Mrs Gabrielle Weir	(Ext.3267)





Department contacts

John Anderson; Emergency First Aiders;

Mental Health First Aiders;

TIC Emergency First Aiders;

Lewis Hannah	Level 1	(Ext.3053)
Stephen Ross	Level 1 SCAPA	(Ext.5329)
Jochen Bruckbauer	Level 2	(Ext.3480)
Wentao Li	Level 2 SCAPA	
Jonathan Pritchard	Level 3 Photonics	(Ext.5813)
Ben Hourahine	Level 6	(Ext.2325)
Ross Gray	Level 8	(Ext.5713)
Konstantinos Lagoudakis	Level 8	(Ext.3464)
Gabrielle Weir	Level 8	(Ext.3267)
Benjamin Hourahine	Level 6	(Ext.2325)
Craig Donaldson	Level 1	(Ext.4812)
David Spiers	Level1	(Ext.3176)
lan Watson	Level 5	(Ext.4597)
Niall McAlinden	Level 5	(Ext.4596)
Benoit Guilhabert	Level 5	(Ext.5738)



INFORMATION

Health and Safety Policy and Local Rules

- Approved by University Court
- Provide detailed arrangements for managing particularly hazardous issues with reference to relevant legislation

Guidance Notes

• Approved by Statutory Advisory Committee on Safety and Occupational Health (SACSOH)

•SACSOH meets three times per year to monitor the implementation and operation of the University's Occupational Health, Safety and Wellbeing Policy and to ensure key workplace risks are identified and appropriately controlled.

SHaW documentation ; <u>https://www.strath.ac.uk/safetyhealthwellbeing/safetylibrary/</u> Training Catalogue ; <u>https://www.strath.ac.uk/safetyhealthwellbeing/training/</u>







If you have any health, disability, safety concerns or require additional support please raise them as soon as possible with the relevant person.

Disability and Wellbeing Service.

If you have any questions or problems that your supervisor cannot answer, do not hesitate to contact John Gillan (DSC), JA827, 9 am to 5 pm Monday – Friday.



Departmental Health and Safety





Fire Safety Coordinator and Fire Marshal Training

This is now on Myplace and is called Departmental Fire Safety Training.

All fire marshals and new marshals should complete the training and update their safety record on SpiderX (Departmental Fire Safety).

С

https://classes.myplace.strath.ac.uk/course/view.php?id=26047

The departmental will be holding a fire drill during October but before that a Fire Marshal meeting will be held on the 9th October in JA824 at 1pm.



25 classes.myplace.strath.ac.uk/course/view.php?id=26047

Contact details: Departmental Safety Convenor – Mr J. Gillan (Technical Support & Safety Manager – JA827) \boxtimes : $\underline{safety@phys.strath.ac.uk}$ $\square:07816\ 609171$



Spider X – Safety Training Platform

Spider X has been updated to incorporate the new Departmental Safety Arrangements, Local Arrangements and the group induction MS forms.

Please read the new Departmental Safety Arrangements 2024 and Local Arrangements and verify you have read them on Spider X.

Staff Physics Departmental Safety Arrangements Occupational Health and Safety induction Part 1	PGR Physics Departmental Safety Arrangements Occupational Health and Safety Induction Part 1	PGT Please complete S17P SHeW Leafets	Visitors Visitor Safety Training Information Visitor HKS Information
Coccupational Health and Safety induction Part 2 Departmental Safety Induction Course (covers OHS Part 2) Display Science Avarceness Manual Handling Avarceness Pincipies and Practice of Rok Assessment	Occupational Health and Safety Induction Part 2 Opprimental Safety Induction Course (covers OHS Part 2) Display Screen Awareness Manual Handing Awareness Principles and Particles of Risk Assessment	UG	SHaW Leatlets Please complete S17P
CU3HIF/Assessors Fire setting automotion Shift/ Loafob Stress Autometes	CU2HH145665505 Fire Statisty awareness Postgarakate Occupational Health and Safety Induction Module 1 Postgarakate Occupational Health and Safety Induction Module 2 Postgarakate Occupational Health and Safety Induction Module 3 You can also access all Intelling Transpire Health Transpic Catelogue	Please complete S17P	
Research centres & units additional regulations	Shraviv Leatines Shravis Avatements		
Control of Arthcial Optical Radiation Control of Chemicals Control of Chemicals Control of Ionsign Radiation			
Grag Induction ADP Induction COUNTRY ADP Induction COUNTRY ADD IN A COUNTR			
Travel Off Campus and Fieldwork – Training • Principles and Practice of Risk Assessment • Protection: Staty • Outside Trait Ad • Statis Carliely Incident Experting and Investigation System) • UK Obversment Titus, Hos, Tel video • Traited Overses - Orimit Traited Staty Modules			





Website/SharePoint Update

- Safety, Health and Wellbeing (SHaW) has recently undergone a re-structure and is now part of the Safety, Wellbeing and Resilience Directorate (SWR), and as such, we have redeveloped our website to include all Directorate Departments. As part of this website redevelopment, we have moved the hosting of our written documentation on to a new SharePoint site.
- The Safety, Wellbeing and Resilience Sharepoint site now hosts all written documentation including the OHS Standards, Local Rules, Guidance Notes and Forms. To minimise any impact on departments there will be a re-direct in place from the old SHaW website to ensure that departments have sufficient time to update their own documentation, and to hopefully minimise any disruption these changes may cause.
- The new website can be found at the following address <u>https://</u> <u>www.strath.ac.uk/safetywellbeingandresilience/</u>.
- The new Sharepoint site can be found here <u>https://strath.sharepoint.com/sites/ swr/</u>.
- If there are any issues with accessing these new sites, please contact Richard Wright directly (<u>richard.wright@strath.ac.uk</u>) for assistance.

Contact details: Departmental Safety Convenor – Mr J. Gillan (Technical Support & Safety Manager – JA827) \boxtimes : $\underline{safety@phys.strath.ac.uk}$ $\square:07816\ 609171$





Investigation System - SIRIS

System Upgrades

- Please be aware that at **1pm on Thursday the 10th of October**, the SIRIS system will be **unavailable for access to either create new incidents using the reporting form or for the management of existing incidents**. This is to allow for the migration to a new system by the service provider (Eco-Online), and to allow testing of the system to ensure that the transfer was completed successfully.
- It has been stated by Eco-Online that the system will be unavailable, at most, for the remainder of the working day. However, once the transfer is complete, the system will be available at the same address, and there will be no difference in the functionality provided. Eco-Online have provided an FAQ which can be found here <u>FAQ document</u>.
- In the event of any incidents occurring during the outage, departments should record these manually and add them into the system once the system has been restored.
- If you experience any issues with the system following the migration, please contact Richard Wright (<u>richard.wright@strath.ac.uk</u>) for assistance.





Training

Charges for No Show to Health and Safety Training Courses

• From January 2024, Safety, Wellbeing and Resilience Directorate charged departments if staff members did not attend/or did not show to any of our externally organised training courses. This will continue going forward. Information regarding this has been added to our training course information on DAT. The recent evacuation chair training was fully booked however there was 33% non-attendance amongst those registered.

Fire Safety

Fire Drills

• A limited programme of fire drills will take place in October. Alan Watson, Fire Safety Adviser will be in contact with local representatives for those buildings involved





Biological Worker Registration – 2024/2025 academic session

Biological Worker Registration for the new academic year is now open. The registration forms are accessible via Pegasus and must be completed by all staff and post graduate students working with biological material. 4th year undergraduate students are also required to register prior to commencing work with biological material. Any new biological workers can still register throughout the academic year, via Pegasus. On completion, this form will be sent electronically to you, as Departmental Safety Coordinator / Department Biological Safety Coordinator. Once the biological worker has submitted their form online you will be able to interrogate the system and monitor who has/has not registered. Work with biological material is not permitted without prior registration.





Clinical and Biological Waste

- The Clinical and Biological Waste Service (Sustainable Strathclyde) is in the process of
 reviewing department details for clinical waste, including information on waste types
 generated. All registered clinical and biological waste generators will have recently received
 an e-mail requesting this information. The Service are aware that a full review has not been
 completed in a number of years, so would be grateful if you could please respond to their email request (from clinicalwaste@strath.ac.uk) with the completed form. If you have not
 received the e-mail request and are clinical and biological waste generator, please e-mail
 clinicalwaste@strath.ac.uk
 to register as a user and to provide details of the waste types
 generated.
- Please note the form asks for a named Clinical Waste Coordinator (CWC), whose primary
 responsibility is to gather and submit the clinical waste requests and act as a main contact for
 the service. Further guidance will be issued in coming months to ensure CWCs have all the
 information they need on the service, including waste packaging and preparation, moving
 waste to collection points, changing waste types for uplifts and new waste items requiring
 disposal. In the meantime, while this guidance is prepared, if you have any questions, please
 contact the clinical waste mailbox <u>clinicalwaste@strath.ac.uk</u>.





SWR Staff Updates

- Liz Tate has retired from her post as Health and Safety Adviser in TIC.
- Pamela Loughlin has retired from her post as Risk and Resilience Manager in SWR.
- Sarah Hunter has retired from her post as Occupational Health Adviser.
- Sheila McBratney has joined Occupational Health as an Occupational Health Adviser <u>sheila.mcbratney@strath.ac.uk</u>



Roles and Responsibilities

Departmental Safety Convener	Mr John Gillan	0141 548 (Ext.3051/3052)		
Laser Safety Officer	Prof Jonathan Pritchard	(Ext.5813)		
Deputy Laser Protection Supervisor (EQOP)	Dr Kali Wilson	(Ext.3363)		
Deputy Laser Protection Supervisor (Nanoscience)	Dr Konstantinos Lagoudak	is (Ext.3464)		
Deputy Laser Protection Supervisor (SILIS/SCAPA)	Dr Wentao Li	(Ext.5785)		
Deputy Laser Protection Supervisor (IOP)	Prof Alan Kemp	(Ext.4737)		
Radiation Protection Supervisor (JA)	Dr Mark Wiggins	(Ext.5785)		
Deputy Radiation Protection Supervisor	Dr Grace Manahan	(Ext.3259)		
Radiation Protection Supervisor (TIC)	Prof Kevin Ronald	(Ext.3484)		
Deputy Radiation Protection Supervisor	Dr Craig Donaldson	(Ext.4812)		
Chemical / Biological Advisor	Dr Yu Chen	(Ext.3087)		
Deputy Chemical / Biological Advisor	Dr James McGilligan	(Ext.5789)		
Deputy Chemical / Biological Advisor (GM)	Dr Brian Patton	(Ext.3474)		
Hazardous Waste Co-ordinator	Mr John Revie	(Ext.3263)		
Contact details: Departmental Safety Convenor – Mr J. Gillan (Technical Support & Safety Manager – JA827)				
⊠:safety@phys.strath.ac.uk	1 :0141 548 3052	D:07816 60917		



Roles and Responsibilities contd,

Portable Appliance Testers;	Mr David Barclay (TIC building)	(Ext.5818)
	Mr Ken Muir	(Ext.4394)
	Mr Tom McCanny	(0141 574 5329)
	Mr Ewan Maclagan	(Ext.4715)
	Mr John Revie	(Ext.3263)
C.O.S.H.H. Assessor	Dr Yu Chen	(Ext.3087)
Fire Safety Co-ordinator	Mr John Gillan	(Ext.3051)
Deputy Fire Safety Co-Ordinator	Mr John McFadden	(Ext.3257)
Departmental Disability Contact	Dr Helen Vaughan	(Ext.3309)
Deputy Disability Contact	Ms Jacqueline Gordon	(Ext.3369)
Computer Officer	Mr Timothy Briggs	(Ext.3376)
MORR Coordinator	Mrs Gabrielle Weir	(Ext.3267)
Contact details: Departmental Safety Convenor –	- Mr J. Gillan (Technical Support & S	Safety Manager – JA827)
⊠: <u>safety@phys.strath.ac.uk</u>	2 :0141 548 3052	D:07816 60917





John Anderson;			
Emergency First Aiders;	Lewis Hannah	Level 1	(Ext.3053)
	Stephen Ross	Level 1 SCAPA	(Ext.5329)
	Jochen Bruckbauer	Level 2	(Ext.3480)
	Wentao Li	Level 2 SCAPA	
	Jonathan Pritchard	Level 3 Photonics	(Ext.5813)
	Ben Hourahine	Level 6	(Ext.2325)
	Ross Gray	Level 8	(Ext.5713)
	Konstantinos Lagoudakis	Level 8	(Ext.3464)
Mental Health First Aiders;	Gabrielle Weir	Level 8	(Ext.3267)
	Benjamin Hourahine	Level 6	(Ext.2325)
TIC			
Emergency First Aiders;	Craig Donaldson	Level 1	(Ext.4812)
	David Spiers	Level1	(Ext.3176)
	lan Watson	Level 5	(Ext.4597)
	Niall McAlinden	Level 5	(Ext.4596)
	Benoit Guilhabert	Level 5	(Ext.5738)

Contact details: Departmental Safety Convenor – Mr J. Gillan (Technical Support & Safety Manager – JA827) \boxtimes : $\underline{safety@phys.strath.ac.uk}$ \square :0141 548 3052 \square :07816 609171



Guide Bracket

Base Section

Lock

Stabiliser/Safety

shoe

Safeti

Assembly

Leaning Ladder Anatomy

Top-cap

Fly Section

Stile/Side-rail

Rung

Working at Height

The following people are qualified to inspected and asset ladders and stools;

Ronnie Roger John Revie Adam Robbins Mark Wiggins Tom McCanny Stephen Ross Lewis Hannah Jamie McLaughlin Gerry Keegan Jordan Rose John McFadden



Contact details: Departmental Safety Convenor – Mr J. Gillan (Technical Support & Safety Manager – JA827) \boxtimes : $\underline{safety@phys.strath.ac.uk}$ $\underline{safety@phys.strath.ac.uk}$ $\underline{safety@phys.strath.ac.uk}$

Month	Event	Proposed	Time	Actual	Time	Location
Sentember	Safety Committee	9/4/2024	14.00-16.00			JA824
September	UG Safety Induction	9/16/2024	13.00-14.00			GH515
	PGR safety Induction	10/2/2024	14.00-15.00			TBC
	Area Safety Committee	10/3/2024	14.00-14.30			JA824
October	Fire Marshals meeting	10/9/2024	13.00-13.30			JA824
	Safety Induction	10/23/2024	13.00-14.00			JA824
	Fire Drill	ТВС	-			
November	Safety Committee	11/20/2024	14.00-16.00	11/27/2024	13.15-14.45	JA824
November	Safety Induction	11/27/2024	13.30-14.30	11/20/2024	14.00-15.00	JA824
December	Chemical Weapons					
December	Convention (return)	12/8/2024	-			
lanuary	Annual Safety Report	1/11/2025	-			
January	Safety Induction	1/15/2025	14.00-15.00			JA824
February	Safety Induction	2/12/2025	10.00-11.00			JA824
	Fire Marshals meeting	3/5/2025	13.00-13.30			JA824
	Safety Committee	3/19/2025	15.00-17.00			JA824
March	Safety Induction	3/26/2025	14.00-15.00	3/26/2025	13.00-14.00	JA824
	Safety Inspection	03/03-25-14/03/25	-			
	Fire Drill	ТВС	-			
April	Safety Induction	4/30/2025	14.00-15.00			JA824
May	Area Safety Committee	5/7/2025	13.30-14.00			JA824
ividy	Safety Induction	5/21/2025	13.30-14.30			JA824
luno	First Aiders meeting	6/4/2025	13.30-14.00			JA824
Julie	Safety Induction	6/18/2025	10.00-11.00	6/18/2025	10.30-11.30	JA824
August	PAT Testers meeting	8/6/2025	14.00-14.30			JA824
August	Safety Inspection	18/08/25 - 29/08/25	-			
September	Safety Committee	9/3/2025	14.00-16.00			JA824
October	Area Safety Committee	10/8/2025	13.30-14.00			JA824
November	Safety Committee	11/19/2025	15.00-17.00			JA824

Agenda

- 1. Apologies
- 2. Minutes of the previous meeting,
- 3. Safety Convenor Report
 - 3a. Annual Safety Plan
 - 3b. Departmental Arrangements
 - 3c. Roles and Responsibilities
 - 3c-1 SHaW Roles Responsibilities and Accountabilities v7
 - 3c-(2-6) Roles Responsibilities and Accountabilities (Sept24)
 - 3d. List of KPI`s
 - 3e. Gap analysis
 - 3f. Safety Inspection
- 3g. Action points
- 4. Fire Safety Report

None

- 5. Fire Awareness/Drills
- 6. Ionising Radiation Report
- 7. Laser Safety Report
- 8. Biological / Chemical and Hazardous Waste Safety Report
- 9. Report from Disability Officer

10. Training

- S17P forms and S17 forms are working fine, there has been a few hiccups.
- 11. First aid/accidents and emergencies
- 12. Building access
- 13. Red Flag procedure (EICP, High risk labs, S19, F09, fire assistants)
- 14. SWR updates/ Safety Bulletins,
- 15. Matters arising and not otherwise on the agenda
- 16. Any Other Business