Cleaning of Laboratories

Introduction

Within the University cleaning staff are usually provided by Support Services Division of the Estates and Buildings Department, but arrangements may vary on different sites particularly for those laboratories on hospital premises where contract cleaners provided by the Trust may be used. In some areas, School staff may also clean laboratories.

This Note provides guidance on arrangements Schools in the University should put in place to ensure, so far as is reasonably practicable, the safety of cleaners working in laboratories. Part I is aimed at those who have a managerial or supervisory role in cleaning arrangements, or are involved in the arrangements for the health and safety of cleaning staff. Part II provides detail of the matters that should be included in the instruction given to those staff who clean laboratories.

There are, in the main, three different types of laboratories within the University:

i) Chemical laboratories where the hazards are mainly the potential for exposure to harmful chemicals, which may cause harm by inhalation, ingestion, or contact, and work near glassware where there is the potential for breakage and cuts.

ii) Biological containment laboratories where the hazards are as in (i), but with the addition of the potential for exposure to micro-organisms, which in some cases could cause infection and illness.

iii) Radiation laboratories, where the hazards are usually as in (i) or (ii), with the addition that work with some form of radioactive material, or radiation emitting equipment, is undertaken within that laboratory.

This document provides guidance on the cleaning of all these types of laboratories which can also usually be collectively termed wet laboratories. Often rooms set up with multiple computer workstations are called computer or IT laboratories. For cleaning purposes these are regarded as office areas and this guidance is not applicable.

The Health and Safety Department may be contacted for further advice (Tel 514255 or Health.Safety@ed.ac.uk). If the query relates specifically to biological safety matters then contact the University Biological Safety Adviser (Tel 514245 or Biosafety@ed.ac.uk) or for radiation matters the University Radiation Protection Adviser (Tel 502818 or Radiation@ed.ac.uk).

PART I - GUIDANCE FOR MANAGERS AND SUPERVISORS

General considerations and specific arrangements the cleaning of floors and hand wash basins and the emptying of waste paper bins are the basic tasks that it is reasonable to expect a cleaner to undertake without any specialised training. However, in order to work safely the cleaner must be made aware of the need to always follow some basic precautions (as detailed in Part II).

Additional hazards arise when general laboratory sinks are also cleaned. If cleaners are expected to clean laboratory sinks then more detailed information and instruction should be provided to avoid mis-handling of chemicals, accidents with glassware or potential contamination with biological materials. Specific arrangements should be made for cleaners working in biological containment laboratories and/or laboratories where radioactive material is handled, as outlined below.

For Biological Containment Level 2 laboratories: - Schools should carefully consider the arrangements they put in place for cleaning Containment Level 2 laboratories. Particular risks to cleaners within these areas should be identified and, where necessary, relevant additional information and instruction, which may vary depending on the specific nature of the research, work in the laboratory, be provided to the cleaner's supervisor or the contractor. The arrangements for Containment Level 2 laboratories should reflect the increased risks. In some cases Schools may decide it is more appropriate for laboratory staff to be in attendance whilst Containment Level 2 laboratories are being cleaned in order to ensure an appropriate level of supervision and provide assistance in the event of accidents etc.

For Radiation Supervised Areas: - Radiation areas are designated because of either a risk of external irradiation or of contamination by radioactive substances (or sometimes both). In the case of areas designated as Supervised because of an external radiation risk, then the cleaning staff may clean without any special precautions. In the case of areas designated as Supervised because of a contamination risk, then the cleaning staff must not undertake any cleaning unless advised by the laboratory staff that they can do so. This is achieved by the use of a notice placed on the door. An example is shown in Part II. Cleaning staff must only clean the laboratory floor unsupervised. Any other part of the laboratory must only be cleaned at the specific request and in the presence of laboratory staff.

For Biological Containment Level 3 and Radiation Controlled Area laboratories: - Routine cleaning of biological Containment Level 3 and radiation Controlled Area laboratories is to be undertaken only by authorised users (laboratory staff) of the facility. However, arrangements may be made for cleaning staff to clean these areas during periods of temporary shutdown when the areas are to be made safe by the researchers prior to access being made available to cleaners under a permit-to-work system. This arrangement is considered satisfactory as long as appropriate control and supervision arrangements are in place to ensure the safety of the cleaning staff concerned.

Responsibilities of laboratory personnel

Laboratory workers have responsibilities to ensure they take account of cleaners gaining access to the facilities and that the areas are safe for the cleaners to carry out their work. They must ensure that communication is adequate so that cleaners are not put in a position where they have to make a decision as to whether the laboratory is safe to clean or not.

School laboratory staff should check, each day before they finish work, that no hazardous items have been left in areas where there is the potential for cleaners to disturb them and compromise their health or safety. In particular:

Where cleaners are expected to clean laboratory sinks, both the draining board area and the sink itself should be free of glassware or other items of equipment.

Attention should be given to floor areas. Bad laboratory practices and poor housekeeping have led to occasions where large bottles of chemicals have been noted stored on laboratory floors and it is not uncommon to find large glass flasks containing culture supernatant on floors adjacent to safety cabinets. Bottles containing chemicals should never be stored on the floor but always stored in suitable chemical store cupboards, of construction appropriate to the hazard(s) that they present. Liquids should always be stored on drip trays. Flasks containing culture supernatant should be placed in some type of secondary containment to prevent them from being knocked and damaged during floor cleaning (and routine laboratory work). Proprietary plastic storage boxes, buckets, or bottle carriers with solid sides are available.

Large size sharps bins often stand on the floor and when over-filled are potentially hazardous to cleaners if items protrude from the top. The cleaner might move the bin during cleaning and when doing so there is a significant risk of sharps injury. To prevent sharps injuries arising in this way, sharps bins must not be overfilled.

Any small, working amounts (up to 500mls), of chemicals that may be within the open laboratory should be securely closed and labelled with the name of the chemical and, where appropriate, hazard warning pictogram(s). Such chemicals should be placed to the rear of the bench each evening. Corrosive chemicals should never be left on the open bench overnight.

Where experiments are left running overnight the cleaners should be excluded from the laboratory by way of the laboratory being locked and signed to that effect. An exception to this may be, subject to risk assessment, if the experiment is wholly confined within a fume cupboard with the sash fully closed.

All apparatus left running overnight must be clearly marked with the standard University notice, obtainable from the Works Division, informing of action to be taken and the person(s) to be contacted in the event of an accident involving the equipment.

Cleaners should not be expected to clean laboratory benches. An exception to this may be where the benches have been completely cleared of all hazardous materials/items for periodical deep cleaning of the laboratory, but this would be subject to special arrangement with cleaning supervisors.

Hazard warning signs should be used judiciously. For chemical hazards these should be affixed to bins, bottles, etc. that contain the relevant hazardous material, and directly to, or adjacent to any equipment that presents the particular hazard that the signage applies to. For these types of hazards, warning signs should, generally, not be affixed to the exterior of laboratory doors as this may confuse both cleaners and members of the emergency services. However, in the case of biological and radioactive hazards there are requirements to display the appropriate hazard warning signs at the point of entry to the laboratory or area, further information is provided in section 5.7 of Part 6 of the University Health and Safety Policy and Radiation Protection Guidance Note GN011. Examples of the warning signs are also shown in Part II of this Guidance Note.

The other exception to the above is where a hazard has the potential to immediately adversely affect the health or safety of a person entering the laboratory (e.g. strong electro-magnetic field/person with pacemaker fitted), when again signage should be affixed to the point of entry. As individual cleaning staff may change without the prior knowledge of the laboratory manager it is suggested that cleaning staff are excluded from such areas and that cleaning is either undertaken by laboratory staff, or by cleaning staff only under the express direction of the laboratory manager after he/she has discussed and assessed the particular risks with the individual concerned.

All pressurised gas cylinders must be securely fastened, in an upright position, by the use of purpose made brackets and chains/belts.

Provision of information and instruction

All cleaning staff should be given instructions on the things they should and shouldn't do whilst working in laboratories with a brief explanation of why it is important to follow these simple basic rules. It is recommended this be discussed with them when they first start work in the laboratories and then be re-enforced and supported by provision of appropriate written or verbal information and instruction. Due regard should be given to ensuring the information is understood by cleaners who are not fluent in English. It should be made clear that after the cleaner has had the chance to think about what they have been told and read, they should feel free to ask questions or express any concerns they may have about working in the laboratories. An example of the type of material that could be provided to cleaning staff is provided in Part II of this Guidance Note. A safety induction talk could be structured around this document.

Support Services provides a verbal induction programme for cleaners that covers the relevant basic information. However, Schools should consider the need to provide any additional information to cleaners who may be working

where there are specific hazards, or where the need for the cleaning of a particular area is uncommon.

Where laboratories are cleaned by School staff other than laboratory personnel, Schools should provide those members of staff with relevant information and instruction in order they can carry out their work safely.

Where contract cleaners are working in laboratories, again they should be provided with information on the nature of the hazards in the area, supplemented with adequate instruction to ensure they work safely. However, in this case it is the responsibility of Schools to provide the information to the contractor, rather than to the individual cleaners. The contractor, having been notified of the risk and control measures to be taken to work safely, is then under an obligation to pass the information on to their employees. Schools could use the information provided in Part II for this purpose. The contractual arrangements should also include the School's local health and safety requirements.

Supervision and monitoring

Schools have responsibilities for persons working on their premises and should monitor and review the arrangements in place to ensure that these are working effectively. Schools should therefore satisfy themselves that cleaners are working safely in the laboratories irrespective of who employs them. Within Schools it should be decided who (a named person) is responsible for ensuring the safety of cleaners whilst cleaning laboratories. The School Safety Adviser should provide support and assistance as appropriate, and the Radiation Protection Supervisor should do likewise for radiation laboratories.

Cleaners provided by Support Services staff will have a supervisor whose role is not limited just to whether the laboratories are being cleaned satisfactorily but also to give due regard to health and safety matters. The named School person should monitor the cleaners' activities to ensure the requirements are being met. Any problems that may be identified should be taken up with the cleaners' supervisor rather than the individual cleaners.

For School staff and contract cleaners, the named School person should provide the information and instruction discussed above and they should monitor the cleaners' activities to ensure the requirements are being met. In the case of contract cleaning staff, any problems that may be identified should be taken up with the contractor rather than the individual cleaner.

PART II - GUIDANCE FOR CLEANERS WORKING IN LABORATORIES

This guidance is designed to help the provision of safety instruction to cleaners whose job involves them entering and working in a laboratory. It is important that everybody who carries out such work is fully aware of and understands the information, by whatever means it is communicated. This part can also be provided to the relevant staff as a support to the instruction.

HAZARDS

As well as any normal WORKPLACE risk such as slips and trips, electricity etc, laboratories will always use CHEMICALS, and might use MICRO-ORGANISMS and RADIATION. By using basic hygiene precautions, allied to common sense, and following some simple rules, cleaners can be safe whilst carrying out their work in laboratories where chemicals, micro-organisms and radiation are used.

CHEMICALS

Not all chemicals are harmful, but many are, with vastly differing effects, such as simple irritation of the skin or lungs, to serious skin burns, or illnesses such as asthma.

MICRO-ORGANISMS

Micro-organisms are more commonly referred to as germs or bugs. Many of them are quite harmless, but it is possible that in some cases if people come into close contact with these germs they may be infected and in some instances become ill. Researchers often work with micro-organisms or use samples or materials that may contain them (for example blood and tissues). This type of work has to be carried out in containment laboratories and there are three different levels depending on the type of materials present:

Containment Level 1 - the germs are unlikely to cause any harm

Containment level 2 - 

Containment level 3 - the germs may cause serious illness

You can tell the type of lab by the number shown on the sign at the door. The signs look like this:

You may clean Containment Level 1 and 2 laboratories once you have been given instructions on how to work safely. In some cases, additional information and instruction may need to be given before working in Containment Level 2 laboratories. You are not allowed in Containment Level 3 laboratories unless special arrangements have been made. Such facilities will display a Containment Level 3 sign at the entrance and will be locked when not in use.

RADIATION

There are also three different categories of laboratories where radiation or radioactive material is used.

Non-designated - Risk from Radiation very small

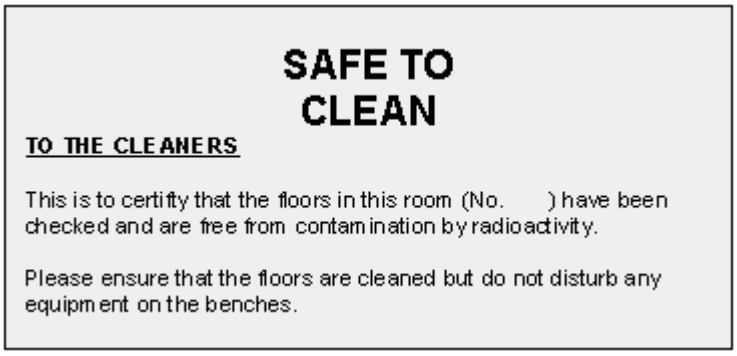
Supervised Area - 

Controlled Area - Risk from Radiation is high

You can tell the type of lab by the sign at the door. There is no sign for Non-designated areas. The signs for Supervised and Controlled areas look like this:

Non-designated areas - you can enter without any special controls to clean the floors.

Supervised Areas - laboratory staff have to put all radioactive material away and check that there is no residues before you may enter to clean the floors in these. You will know that it is OK to enter because there will be a notice on the door which looks like this:



SAFE TO CLEAN

TO THE CLEANERS

This is to certify that the floors in this room (No.) have been checked and are free from contamination by radioactivity.

Please ensure that the floors are cleaned but do not disturb any equipment on the benches.

Normally, you should only clean the floor. If laboratory staff would like you to clean other parts of the laboratory, they must be in the lab with you, and provide specific instructions.

Controlled Areas - You must not go into Controlled Areas.

RULES FOR CLEANERS IN LABORATORIES

DOs -

- Always wear the overall that has been provided and see that it is properly fastened. Keep your overall apart from your outdoor clothing and do not take your overalls home to wash. Do not wear your overall in the staff room or canteen; take it off when you go for your break.
- Wash your hands regularly and always when you have finished work or stop for a break. Always cover cuts and grazes (however small) with a waterproof dressing until they are fully healed.
- When cleaning sink areas always wear gloves.
- Immediately report any accidents or incidents (including if anything is leaking or knocked over) to the person in the laboratory or your supervisor.

DO NOTs -

- Do not attempt to clear up after an accident unless a member of the laboratory staff has told you it is safe to do so. Never pick up broken glass with you fingers, use a dustpan and brush. If there is no-one around to tell you whether or not it is safe to clear up a spillage then you should put out some hazard warning signs and leave it for the laboratory staff to deal with.
- Do not eat, drink, smoke, chew or apply cosmetics in the laboratory. Never put ANYTHING in your mouth whilst you in the laboratory. This includes pens, pencils, tools, cables, fingers etc. Do not take food, drink, cigarettes, overcoats etc into the laboratory. These must be left outside the laboratory.
- Do not touch anything whilst in the laboratory unless required to do so to carry out your work and you have been told it is safe to do so by your supervisor. In particular do not touch anything on the benches and only move things on the floor if you have been told it is safe for you to do so. Do not touch, empty or move things in the laboratory sinks unless you have been told exactly what you can or cannot do.
- Never attempt to clean up a spillage of unknown material, no matter how harmless it may seem (e.g. many hazardous chemicals may look

like water, but can damage your eyes, skin or lungs); always get advice from laboratory staff if there is a spill.

RULES FOR CLEANERS IN LABORATORIES

IF -

- If you have an accident and injure yourself, especially if you break the skin or get something in your eye or mouth, you must report it to your supervisor at once and see that it is recorded in the Accident Book. If you become ill you should tell your doctor where you work so, if necessary, they can talk to someone in the University about what you do.
- If you accidentally spill a chemical on your skin immediately place the affected area under running water for approximately 15 minutes, or until a colleague has obtained knowledgeable assistance. If you have to go to hospital take the name of the substance, as shown on the label from the bottle/carton, with you.
- If you have any doubts that it is safe to start, or continue, work then you should you should not start, or continue, until the matter is sorted out. You should report any such problems to your supervisor.

Note: The information contained within these pages is for use by University of Edinburgh personnel only.