

Model Local Rules: laboratory work involving radioactive substances

Notes on the use of this example document:

*These are model Local Rules prepared by the University Radiation Protection Adviser, as an example for those University groups who are using open radioactive material in research laboratories. However, the document needs amending and expanding to meet local conditions and requirements, and does not meet the requirement for 'special arrangements' or a 'system of work', as outlined in the relevant radiation risk assessment, and the Ionising Radiations Regulations 1999 (and taking note of the requirements of the Environmental Permitting Regulations 2016). The document must be expanded to ensure that it applies to the relevant radiation application and facilities in the relevant location and for the relevant staff. Departments should add to the rules any additional matters that are relevant to the **specific location**, and they may wish to integrate the rules into larger departmental safety instructions or operating procedures, although care is needed if this course of action is followed to ensure that the rules are not "lost" in the other documentation. Remember that local rules are likely to be effective if they are reasonably brief, concentrate on the activities of greatest risk, are clear and 'local' to the specific area of work, and focus on the working instructions to be followed by everyone in order to keep doses ALARP. There are certain items that the Regulations, and the University, specifically require in local rules. Therefore, although the wording can be modified, any set of local rules must include all of the matters that are contained in 'Section 1' of these model local rules.*

Once the local rules are completed, they must be communicated to the persons who will use radioactive substances, and also to those who may be affected by the rules. It is important that all relevant persons understand the rules and know why and how to apply them. Merely sending them a copy is not sufficient.

If this document is used to complete a new set of local rules for a department, then the draft document should be forwarded to the University Safety Office (SO) for the attention of the University RPA/RPO.

SECTION 1 – Mandatory

This document should be used in conjunction with the University of Cambridge Safety Manual, ['Working Safely with Unsealed Radioactive Sources'](#) and/or with supplementary departmental guidance on the safe use of radioactive substances.

LOCAL RULES FOR:

Department of:..... **Building/Section:**.....**Room:**.....

Prepared by:.....

Date:.....**Review Date:**.....

Scope: These local rules concern the safe use of open radioactive material for research studies in (Research group/s). They apply to the normal day-to-day work, and to contingency arrangements in case of a reasonably foreseeable accident. Working in line with these rules will ensure safe working with this material and compliance with the Ionising Radiation Regulations.

These local rules, when and where so additionally identified, incorporate the written arrangements to allow non-classified, authorised persons to work in Controlled Areas.

1.1 Description (*refer to risk assessment and amend as needed*)

The type of radioactive material used is (*Detail the radionuclides, either by name or generically, such as “medium-energy beta emitters”*). The activities used are low. There is a low risk from external radiation, but since they may be used without containment, there is a significant risk of the radioactive material getting onto or inside the body, by ingestion, inhalation or absorption. These local rules are intended to restrict the extent of exposure to external radiation and the likelihood of internal contamination.

1.2 Designated Areas

The Controlled Area(s) is/are (Describe location)

The Supervised Area(s) is/are (Describe location)

1.3 Dose Investigation Level

The SO will conduct a formal investigation if any person accumulates a dose of the specified level in any calendar year. The investigation will be carried out at the first instance of an accumulated dose of this level being recorded. The SO regularly reviews dosimetry reports and follows up unusual doses (with the local RPS) to help keep doses ALARP. These arrangements would normally provide an early warning before a formal investigation becomes necessary.

In view of the fact that the activities being used are low, and classified workers will not be required, the dose investigation level is set at: 2mSv ‘whole body’/film badge and/or 50mSv/extremity dose - TLD. Consult the RPS (and if necessary the RPA) on the application of these values to the specific work. (*A higher dose investigation level may be specified for particular work but this must be done in consultation with the RPA.*)

1.4 Appointments

The Radiation Protection Officer (Radiation Protection Adviser and Radioactive Waste Adviser) is Lisabeth Yates, Safety Office, Tel 33330, email ly215@admin.cam.ac.uk

The Radiation Protection Supervisor is (Name and contact details)

The Appointed Person for the EPR Permit is (Name and contact details)

1.5 Example Emergency Contingency Plan

THIS PLAN MUST BE MODIFIED/MADE SPECIFIC TO THE PARTICULAR LOCATION/STAFF COVERED BY THE RULES.

SPILLS

- Avoid skin coming into contact with contaminated materials. If, after monitoring, you are sure contamination is minor and restricted to gloves, shoes or lab coat, remove these and leave the lab after thoroughly monitoring yourself.
- If you are contaminated more extensively than just your immediate clothing, keep out of the immediate spillage area, but if uninjured remain in the laboratory or laboratory area. Avoid spreading contamination via shoes etc. Call for help and ask your helper to clearly mark off the contaminated area, to prevent others from entering the area. Endeavour to contact an RPS – from your Department or another nearby. If you or another person is injured try to contact a departmental first aider and only allow an injured person to leave the laboratory if this is essential to permit urgent treatment – in such cases restrict movement to a defined area immediately outside the laboratory where assessment and monitoring can take place.
- Carefully remove any contaminated clothing and wash any affected areas of skin very thoroughly. Pay particular attention to washing eyes or cuts, rinsing with plenty of clean tap water. Avoid spreading contamination to other areas of skin. Wear protective gloves to put contaminated clothing in a marked bag. If you have to leave the laboratory to get to a suitable washing facility, wear overshoes to prevent contaminating anything else.
- Any contaminated wound, however trivial, should be irrigated with clean water or saline solution, taking care to limit any spread of contamination to or from other parts of the skin.
- Eyes - ***add details of preferred treatment methods here – consult first-aiders for details***
- The emergency treatment of serious injuries must take priority over decontamination – *the amount of radioactive material being handled in this laboratory does not warrant any delay in dealing with the injury.* If it is not reasonable to decontaminate after emergency treatment, but before transferring to the hospital, the ambulance personnel must be informed of the nature of the accident and of any potential contamination risk. A responsible person who is aware of the details of the incident should always accompany the casualty to the hospital and arrange for the hospital to be forewarned of the contamination. The RPS and RPA must also be informed. First-aiders should be aware of this emergency procedure in order to deal with any case of personal injury relating to an accident involving radioactivity.
- The local/lead RPS and the RPA must be informed of any spillages. All incidents involving contamination of the person must be reported to the RPA via the RPS.
- All persons who may be involved or affected by this contingency plan must be informed of it and be aware how it affects them. Rehearsals of the procedures to be adopted in the Department in the event of incidents involving radioactive substances will be held on/at.....

FIRE and Other Emergency Situations:.....

1.6 Training and Authorisation

Only authorised staff may work with ionising radiations unsupervised. To become authorised workers must meet the following requirements:

1. Have received basic information and instruction, either by attendance at the University's half-day Basic Radiation Protection Course, or a similar training course. Where they have had alternative training, they must still attend the University's Radiation Protection Course as this deals specifically with the University's arrangements for radiation protection and current legislative requirements.
2. Have received instruction from the Radiation Protection Supervisor in the control measures and recording requirements in their areas, and of the specific details for their proposed procedures.
3. Have received, and this has been documented, appropriate PRACTICAL training within the research groups in which they work.
4. Have completed and had countersigned a Registration/Proposed Scheme of Work form, and seen and agreed the risk assessment for the work and the resultant control measures. Registration/Proposed Schemes of Work forms cover specific procedures using defined radionuclides and amounts of activity, and therefore radiation workers are authorised to carry out only those procedures for which they have an authorised Registration or SoW, signed by the PI and the RPS. If an appropriate risk assessment does not exist in the Department for the proposed work, then one must be prepared, involving the user, PI and the RPS. Further advice on the process can be obtained from the University's RPO/RPA.

The Registration form (point 4 above) and a suggested induction checklist (covering points 2 and 3 above) are available on the Safety Office website.

Other staff can only carry out work involving radioactive substances in the presence of a member of staff who holds the appropriate full authorisation.

1.7 A Summary of the Working Instructions (General Good Laboratory Practice). Also referring to: (*departmental guidance/protocols*)

This section should be restricted to the KEY items – not many pages of detailed procedures.

Include, if appropriate, the specific written instructions (arrangements) for non-classified persons entering a controlled area.

SECTION 2 - Include some or all of this, and other as necessary (as appendices if appropriate or cross reference to other documents), but only IF these items are relevant to the specific location!

Requirements of the Environmental Permitting Regulations, and Issued Permits

Details of arrangements to meet 'BAT'

Ordering radioactive substances

Recording the Use of radioactive substances

Storing the radioactive substances

Moving and transporting radioactive substances

Waste disposal

Fire (additional info to contingency plan?)

Loss of radioactive substances

Etc