

Designation and Dedesignation of Laboratory Areas

Designated Areas

Designated Sinks

Review and Dedesignation of Areas

Designated Areas

Laboratory areas in which radioactive materials are handled or stored are generally designated as "Controlled" or "Supervised", depending upon criteria laid down in IRR99. These criteria relate to likely radiation dose rates, air concentration, likelihood of incidents/accidents, need for containment, etc.

Controlled Areas

As an employer of Radiation Workers, the University must designate as a **Controlled Area** any area in which a Radiation Worker is likely to receive more than three-tenths of any annual dose limit (e.g. a whole body dose > 6 mSv per year). Details of all Controlled Areas should be included within School Local Rules. In many cases, a Controlled Area may simply be a fume cupboard. However, all Controlled Areas must be physically demarcated, or, if this is not reasonably practicable, delineated by some other suitable means, and access points to Controlled Areas must be suitably labelled (see Figure 1). In the case of a mobile sealed source a temporary Controlled Area may be described in terms of distance (e.g. radius) from the source.

Under IRR99, less Controlled Areas are needed at the university than was the case under IRR85. At the time of laboratory surveys therefore, or on individual request, the Radiation Safety Unit will formally inspect areas and carry out an area classification. If a laboratory is being refurbished, or a new laboratory is being designed the RPA **MUST** be informed and consulted at the planning stage, both to satisfy the legal requirements of IRR99, and to avoid costly mistakes. Sinks for disposals of radioactive materials **must** be designated by the Radiation Safety Unit, who will provide any necessary warning signs.

Figure 1: Example of appropriate signage for Controlled Areas

Access to Controlled Areas by Radiation Workers

Unlimited access to Controlled Areas is restricted to Classified persons. However, other persons (nonclassified persons, contractors or visitors) may enter such areas under the conditions of an approved written **System of Work** (see below). Except for the RPS, RPA or Inspectors exercising a statutory power, or in cases of fire or other serious emergency, no-one else may enter a Controlled Area without a written System of Work.

In the event that a visitor who is a Classified Worker at another establishment requires access to a Controlled Area, the RPA should be consulted in order to ensure that the requirements of the ***Ionising Radiations (Outside Workers) Regulations 1993*** may be met.

Systems of Work

If a non-classified Radiation Worker is required to enter a Controlled Area, a **System of Work** should be drawn up by the RPS, with advice from the RPA, if necessary. This will ensure that such individuals are most unlikely to receive more than three-tenths of any dose limit. Entry into a Controlled Area must be solely for the purpose of carrying out approved duties or procedures (as specified in the System of Work) and all involved must have received adequate training. The System of Work should be clear and concise but must include information on any time restrictions, requirements for safety clothing, handling devices, shielding etc. that are necessary to ensure that the radiation dose does not exceed 1/10 of the annual limit. Personal monitoring of all, or a representative sample of, the persons to whom the System of Work applies is required to demonstrate its effectiveness, and such monitoring records must be kept for two years.

Access to Controlled Areas by Maintenance and Cleaning Staff

Maintenance, domestic and cleaning staff are not allowed to enter any room with a "Controlled Area" status, unless explicit permission has been obtained from the RPS.

Where laboratory or equipment maintenance work involves a potential radiation hazard, entry to that area can only be made in accordance with a **Permit to Work** issued by the University Safety Officer. It is the responsibility of the RPS to check that the area/equipment is free from any significant radiation or contamination before signing the permit and giving permission for work to commence; this may involve monitoring the area and the temporary removal of radiation sources. The RPS must also satisfy him/herself that any activities within the School which could introduce a fresh radiation hazard have been suspended for the duration of the work.

Supervised Areas

Any area in which an employee is likely to receive more than one-tenth but less than three-tenths of any dose limit. (e.g. a whole body dose > 2 mSv per year but < 6 mSv per year) has to be designated as a **Supervised Area**. In practice this requirement is often extended to cover all areas used for handling radioactive materials which are not designated as Controlled Areas. Note, however, that it is permissible for areas in which radioactivity is present solely in the form of samples prepared for liquid scintillation counting not be defined as Supervised Areas.

Supervised Areas need not involve an entire laboratory, but may, for example include only those specific work-stations or storage locations where radioactive materials are present. All such areas must be clearly and unambiguously demarcated by means of suitable and appropriate radiation warning signs.

Access to Supervised Areas

There are no specific restrictions on access to Supervised Areas, but equipment or materials in such areas should only be handled by registered Radiation Workers and used for work involving radioactive materials.

[back to top](#)

Designated Sinks

Aqueous radioactive waste may only be disposed of via sinks specifically designated for this purpose. No radioactivity may be put into non-designated sinks. A label (Figure 2) must be clearly displayed above all Designated Sinks. Other, aqueous liquids may be discharged via such sinks but they must

not be used for hand-washing or drawing water, and they must be kept clean and uncluttered at all times. Drainage pipes below Designated Sinks must be labelled to warn maintenance staff of the potential radiation hazard. The Radiation Safety Unit will undertake to do this when designating a sink for radioactive waste disposal. Due to the risk of accidental contamination, any cupboard space below a Designated Sink **should not** be used for storage.

Designated Sinks and associated pipe-work must be identified on building plans. In addition to the labelling described above, the pipe-work from these systems must be marked with a trefoil symbol at 2m intervals.

Maintenance work on Designated Sinks and associated pipe-work may only be carried out with the approval of the Radiation Safety Unit. The RPS should advise the Radiation Safety Unit of any intended changes in designated category so that, if necessary, appropriate monitoring and decommissioning can be carried out by the Radiation Safety Unit, in conjunction with the university Estates Office.

Figure 2: Designated Sink Signage

[back to top](#)

Review and Dedesignation of Areas

The status of all Controlled and Supervised Areas, and Designated Sinks, should be regularly reviewed to ensure that they are correctly classified and labelled. The Radiation Safety Unit must be consulted about any proposed changes in area designation. Any area in which an employee is unlikely to receive more than one-tenth of any dose limit need not be designated.

If radiation work is discontinued in an area which was previously designated as a Controlled or Supervised Area, or if a Designated Sink is no longer required for disposal of aqueous radioactive waste, a thorough check must be made by the RPS to ensure that no significant activity remains as contamination. The Radiation Safety Unit must then be informed to formally de-designate the area, and issue an appropriate certificate. If no contamination is detected, the area will be allowed back into normal unrestricted use, and a report will be issued by the Radiation Safety Unit to this effect.

Equipment such as fridges, freezers, etc. should not be returned to normal use or disposed of until it has been monitored by the School or the Radiation Safety Unit, declared uncontaminated and the radioactive symbols removed