

APPENDIX 8

IONISING RADIATION PROTECTION FOR UNDERGRADUATES AND CLINICAL STUDENTS

There is an obvious requirement for the University to train those students who need to use ionising radiations in their studies, in the appropriate safety precautions that need to be taken. It is also necessary to ensure that students' actions do not cause the University to contravene radiation protection and environmental legislation. Whilst the position of students with respect to the Health and Safety at Work Act is often ill defined, the Health and Safety Executive have successfully brought actions against Universities in circumstances involving students and from their test cases certain chains of responsibility can be perceived. The following guidelines cannot be considered definitive, but do provide prudent safe systems of work. If such guidelines are not observed there would be little defence for the University in the event of an untoward incident.

Students involved with practical work using ionising radiations can be considered to fall into two general categories, postgraduate and undergraduate students. The situation with respect to postgraduate students is to some extent taken care of with instruction into radiation protection available at the University's annual safety seminar for newly registered postgraduate students, by attendance at the regular 'suitable and safe uses' session, and hands-on instruction within the groups to which students are attached. Hence the following guidelines have been prepared with the undergraduate or clinical student in mind.

Undergraduate and clinical students use of radioactive substances and machines producing ionising radiation, falls into two categories, class-work and laboratory (project) work, which require separate consideration.

A. Experiments conducted as part of laboratory teaching classes

1. Classes in which radioactive substances or machines producing ionising radiations are involved should be supervised at all times by a Teaching Officer (UTO) or equivalent. Is not satisfactory for a graduate student demonstrator to be left in charge of these classes.
2. The Class Supervisors should be registered as a radiation user within the Department concerned.
3. The Class Supervisors should have a copy of, and be familiar with the contents of, the departments radiation protection Local Rules or sub-sections therefore, which are relevant to the experiments that he or she are supervising.
4. Handouts relating to the class experiments involving ionising radiation should point out the students' obligation to restrict the extent to which they expose themselves and others to the ionising radiations and give clear instructions as to how this is to be achieved within the context of the experiments they are to undertake.
5. The above points should also be emphasised in any preamble given by the class supervisor before practical work commences.
6. If it is anticipated that large numbers of students will be involved in the use of ionising radiations throughout the year, it may be appropriate for departments to organise a separate lecture on radiation protection before classes commence. It would be appropriate for the (senior) departmental Radiation Protection Supervisor to deliver this lecture. It is important to ensure that all students likely to use ionising radiation during the year attend such lectures.
7. The Supervisor of classes in which unsealed radioactive sources are used should be responsible for ensuring that any radioactive waste generated is collected and disposed of in compliance with the departmental EPR Sub-Permit, and the department Local Rules Document.
8. The departmental RPS must be kept advised of the details of all classroom experiments that involve ionising radiations.
9. The advice of the RPS should be sought in the design of class experiments.

B. Part II projects involving experiments carried out in departmental research laboratories as well as teaching laboratories

1. Students are generally attached to specified supervisors for the purpose of Part II projects. Supervisors must be made aware in writing by the Head of Department of their responsibilities, for training students under their supervision in the appropriate and safe use of ionising radiations.
2. Supervisors must formally acknowledge this responsibility.
3. Students must receive copies of departmental Local Rules or appropriate sections thereof that relate to the techniques they are intending to use.
4. Supervisors must ensure that the student receives adequate instruction in the principles of radiation protection and have read and understood the relevant sections of the Local Rules.
5. Supervisors should ensure that the students' techniques are monitored to ensure that the extent to which exposure to themselves and others to ionising radiation is minimised.
6. Where unsealed sources are used, the supervisors must ensure radioactive waste is disposed of in accordance with the instructions issued by the RPS and the provisions of the Local Rules Document.
7. Students must not be allowed to work alone with radioactive substances or machines that generate ionising radiation unless appropriate supervision is immediately available. Particular attention is drawn to avoiding the possibility of unsupervised 'out of hours' working.
8. The departmental RPS must have details of all students using ionising radiation and their planned experiments before Part II projects are started.

C. General Considerations

1. Undergraduates and Clinical students should not conduct experiments with quantities of unsealed radionuclides that would require areas to be defined as 'controlled'
2. It should be remembered that from time to time undergraduates are attached to departments other than those primarily responsible for their teaching, for the purpose of Part II projects. It is important that the Head of Department and the RPS of the department in which they are carrying out their projects are aware of the situation if the project involves the use of ionising radiations.
3. Departmental Risk Assessments and Local Rules should take account for the radiation protection needs of students using ionising radiations in the department.
4. Subject to the findings of a risk assessment, it should not generally be necessary for (class) students to be provided with individual personal dosimetry devices, although the use of shared 'class' badges can be used to for reassurance. Project work may however require individual personal monitoring, and again the risk assessment should be examined in discussion with the senior RPS. If the RPS/supervisors have concerns regarding personal monitoring provision, then the RPO/RPA should be consulted
5. Additional restrictions may apply to many students who are under the age of 18 years. In these circumstances the supervisor and the RPS must consult the University's Radiation Protection Adviser via the Safety Office.