WHAT IS A CONTROLLED AREA?

By definition, Controlled Areas are areas in which persons may receive an effective dose of more than 6 milliSieverts in a calendar year. So in theory any area in proximity to a source of ionising radiation exceeding 3 microSieverts an hour (based on a 40 hour working week and 50 week year) is effectively a Controlled Area. However, fortunately for all staff working at the university, this is mitigated by the fact that no work is conducted for such a prolonged time in proximity to such sources. By judicious use of Local Rules and Systems of Work, staff and students may be enabled to work with such sources for the relatively short periods of exposure. Controlled Areas should be defined in the Local Rules and suitable demarcated by means of tape and signs. Frequently it may be sufficient to define a fume cupboard or similar containment as the Controlled Area when handling radioactive sources. The enclosable area around an x-ray generator may be conveniently defined as Controlled Area for radiography or therapy units. In accordance with the principles of ALARP (As Low As Reasonably Practicable), it is essential that all staff and students not involved in the work are forbidden to enter the Controlled Area.

It is permissible to have other areas within laboratories demarcated as Supervised Areas in which lower activities of radioactive sources are handled and in which the doses are below that of a Controlled Area. Staff and students not involved in the radiation work may enter and use these areas, although they should be made aware of the hazards of any radioactive material. This again may be done by use of Local Rules, Systems of Work and by clearly demarcating the area in which the radioactive material is contained. RPO staff can assist schools with the assessment of radiation areas, both Controlled and Supervised. Draft Local Rules can be downloaded from the ROP website documentation page. A selection of signs can also be downloaded from the signs page.

To summarise: A Controlled Area means what is says—an area into which access is strictly controlled. It is not an area of significant hazard provided the Local Rules and Systems of Work are followed.

MOBILE PHONES – REPORT ON RECENT STUDY

Interphone has recently published the results of a study on brain tumour risk in relation to mobile phone use. The study concluded “This is the largest study of the risk of brain tumours in relation to mobile phone use conducted to date and it included substantial numbers of subjects who had used mobile phones for years. Overall, no increase in risk of either glioma or meningioma was observed in association with use of mobile phones. There were suggestions of an increased risk of glioma, and much less so meningioma, at the highest exposure levels, for ipsilateral exposures and, for glioma, for tumours in the temporal lobe. However, biases and errors limit the strength of the conclusions we can draw from these analyses and prevent a causal interpretation.” Full report can be found at http://tinyurl.com/33ytdrs
**DUTIES OF THE RADIATION PROTECTION OFFICE:**

The duties of the RPO are generally four-fold.

1. To protect the staff and students from the hazards of radiation.
2. To protect the general public from work at the University of Liverpool.
3. To protect the environment from the discharges of radioactive waste that arise at the University of Liverpool.
4. To protect the University of Liverpool from legal actions that can arise from non-compliance and/or poor practice.

**NEXT SEMINARS**

- UV Safety Seminar
  - 28th July 2010
- Basic Radiation Seminar
  - 20th October 2010.
- Laser Safety Seminar
  - 27th October 2010.

Details may be found on the website: [http://www.liv.ac.uk/radiation/pdf/uvnotice.pdf](http://www.liv.ac.uk/radiation/pdf/uvnotice.pdf)

Prior registration can be made by sending an email with subject ‘UV Seminar’ to rad.pro@liv.ac.uk giving name and department.

**URANUS**

**UV SAFETY SEMINAR**

The majority of incidents with radiation within the University involve the use of UV lamps. Whilst the lamps in tanning salons and home sunbeds may be relatively harmless for short occasional exposures, the UVC radiation produced by germicidal lamps is extremely potent and can cause serious injury in a few seconds.

There will be a **UV Safety Seminar** on Wednesday 28th July to explain the hazards associated with injudicious use of UV lamps and the precautions that should be taken.

Details may be found on the website:
- [http://www.liv.ac.uk/radiation/pdf/uvnotice.pdf](http://www.liv.ac.uk/radiation/pdf/uvnotice.pdf)

**DICK IS LEAVING THE ASYLUM !**

Dick Beckley will be leaving the University of Liverpool Radiation Protection Office at the end of July after nearly 44 years service providing technical assistance and advice. He has worked for four Radiation Protection Officers/Advisors during those years.

It was in August 1966 that Dick started working with Ivan Birchall in the Radiation Protection Office. It was then based in Mechanical Engineering Department and occupied the site of the former Asylum hence the title of this section. In 1982, when Ivan retired and Graham Jones took on the mantle of Radiation Protection Officer, the Radiation Protection Office moved to Physics Oliver Lodge Laboratory. Peter Mason succeeded Graham Jones in 1987 and was, in turn, succeeded by Peter Cole in 2000.

During his time at the University Dick has gradually assumed a greater responsibility for the management of Radiation Protection and has provided valuable assistance and advice to many members of staff at all levels from Undergraduate to Pro-Vice Chancellors.

**REMINISCENCES (by Dick Beckley)**

When I started at the University in 1966 most of the work of Radiation Protection was concerned with radioisotopes, although the most potent items which we monitored were the 156inch Synchrocyclotron, located roughly where the Metropolitan Cathedral steps are now, and the Van De Graaf Accelerator in the building now occupied by Surface Science. In addition, we had liaison with the Universities Research Reactor at Risley near Warrington. At that time Lasers, microwaves and Ultra-Violet lamps were things of the future.

Dose rates received by University staff and students have steadily decreased during the years.

Back in 1966 staff maintaining the Synchrocyclotron regularly received annual doses of 50mSv which was then the permitted annual limit of dose. Now we get twitchy is someone approaches 2mSv in a year. Personally the highest monthly doses I have received are 11mSv when demolishing the Synchrocyclotron and 8mSv whilst monitoring the dose contours within the machine room of the Van De Graaf Accelerator. As an indication of activity within the Synchrocyclotron during demolition one target was removed with a dose rate of around 30 mSv per hour at 1 metre. Not an item to linger around.

We had the odd excitement such as the radioactive chicken wandering around Pembroke Place, or discovering radioactive sources for TA training in a bomb shelter behind the former Edge Lane bus sheds. Nobody can say that the work is routine!

Now the range of activities in which Radiation Protection Office is involved has increased considerably. There are few incidents in which radioisotopes are involved and most radiation incidents at the University involve the use of Ultra-Violet lamps in their various forms. However, the greatest risk of serious permanent injury is from improper use of lasers.

The type of work has also changed. In my early years much of the work was practical and involved counting systems and analysing results. Now, as with so much in the Health and Safety field, the work is very administratively based involving the recording and documenting of information from departments (or schools as they are to become known!). It is mainly to provide evidence of compliance to the various Regulatory Bodies.

In my time at the University I have considered that the work of the Radiation Protection Office is to encourage staff and students to work with ionising and non-ionising radiation in the safest manner possible whilst maintaining compliance with associated Regulations. It has been an enjoyable task and I have experienced a friendly working relationship with a great many staff of all levels from research assistants to Pro-Vice Chancellors.

Please send any comments on the work of Radiation Protection Office to rad.pro@liv.ac.uk