YES—however bear in mind that the maximum time-averaged power output from a mobile phone is 0.25 Watts compared with 750 Watts from a microwave oven. So it will take something in the order of 3 weeks minimum to have produced sufficient power needed to cook a ready meal—and that doesn’t take into account heat loss during cooking.

Another factor to consider is that the mobile phone transmits its power radially so a small proportion of the power is directed in any one direction, unlike a microwave oven in which the power is guided towards the centre of the oven. In fact the mobile phone does not output that maximum power at all times and it would probably be quicker cooking over a candle.

It has been calculated that the average increase in temperature in the head due to use of mobile phone is 0.1°C and this has not been shown to produce any adverse effects. International Standards set a maximum figure of 2 W kg⁻¹ as the Specific Absorption Rates (SAR) for radio waves. All mobile phones currently on sale have an SAR well below that permitted maximum and are therefore not considered dangerous.

Further details on mobile phones and their safety can be found on the Health Protection Agency website at http://www.hpa.org.uk/.

**CONTROL OF ARTIFICIAL OPTICAL RADIATION AT WORK REGULATIONS**

These Regulations will be implemented in April 2010 in order to protect workers from hazardous sources of light in the workplace.

Whilst most sources of artificial light in the workplace are not hazardous there are several work practices which have light sources that will come into these regulations. These include:

- Metal working (welding and plasma cutting)
- UV curing of inks and paints
- Pharmaceutical (UV fluorescence and sterilisation)
- Medical and cosmetic treatments (laser surgery, blue light and UV therapies)
- Research (all use of Class 3B and Class 4 lasers)

These processes can cause severe injury to eyes and skin unless suitable (and ample) precautions are taken. Preferably these will take the form of engineering controls to prevent illumination of skin or eyes. But suitable goggles or face shields together with adequate coats and gloves may be sufficient for the purpose.

**HOWEVER** all risks must be assessed and documented, and an inventory of all hazardous sources of Artificial Optical Radiation **MUST** be compiled.

It is essential that such documentation is revised and available for inspection by Regulators.

These Regulations will not just affect departments with scientific laboratories, they will also affect any department with intense light sources including spotlights or theatre lighting.

Further information and advice may be obtained from Radiation Protection Office.
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 action that can arise from non-compliance and/or poor practice

Next Seminars

Basic Radiation Seminar
April 2010.
Laser Safety Seminar
April 2010.
Details may be found on the website nearer the date

“I want a nuclear free zone, is this possible?

Find out in the next issue due online early March

URANUS

What are these and for what were they used?

The photograph shows SpaRadium bulbs. These are lead cylinders which screw onto a Sparklet siphon like the conventional Sparklet bulb. However these SpaRadium bulbs contain Radium salts.

They were found in a church hall together with an electric blanket (labelled as House of Commons approved!) which also contained Radium.

They date from around the 1930s and both items were advertised as having therapeutic powers.

Lying on the electric blanket supposedly eased the pain from lumbago, sciatica, etc. It was claimed that drinking the ‘radium water’ similarly eased stomach problems.

Both were claimed to solve many ailments— we have no doubt that they did—permanently!

Health and Safety has come a long way from the 1930s.

WHITEBOARDS AND PROJECTORS

Most computer projectors used in presentations and in interactive whiteboards applications, have projection distances that are large enough to allow people to stand in front of them and look at the very intense light that they produce. Anyone who does this may run the risk of exposing their eyes to light intensities that could exceed one of the exposure limits that will appear in the new Control of Artificial Optical Radiation at Work Regulations 2010. The following is good practice guidance with respect to the use of this type of projector equipment:

1. Staring directly into the projector beam should be avoided at all times.
2. Standing in the beam, whilst facing the projector, should be minimized. Employers should try to ensure that projectors are located so that they are not in a presenter’s line-of-sight when they stand in front of the screen to address an audience. This ensures that, when presenters look at the audience, they do not also have to stare directly at the projector lamp. The best way to achieve this is by ceiling-mounting rather than floor or table-mounting the projectors.
3. Users and students should try to keep their backs to the beam as much as possible.
4. The use of a stick or laser pointer to avoid the need for the user to enter the projector beam is recommended.
5. Students are adequately supervised when they are asked to point out something on the screen.
6. In order to minimize the lamp power needed to project a visible presentation, room blinds should be used whenever possible to reduce ambient light levels.

Inherently safer "ultra-short throw" devices have recently been developed and are available on the market. These employ sophisticated optics to enable the projector to be mounted above the display screen and so close to it that it becomes impossible for a user to directly expose their eyes to the beam. As such residual eye exposure risks are wholly removed by this type of equipment’s design and construction. Departments should actively consider them as an option when they purchase new or replacement equipment.

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