LOCAL RULES

GOVERNING THE USE OF ULTRAVIOLET RADIATION
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There is at present no legislation or national UK Code of Practice governing the use of Ultraviolet (UV) radiation within universities. Therefore it is recommended that all UV sources should be used in accordance with the recommendations of the Health Protection Agency (formerly the National Radiological Protection Board) ¹.

A copy of this booklet is provided to all departments working with UV radiation. Further copies may be obtained from the Radiation Protection Office (RPO).

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**Limits**

For all UV sources the effective radiant exposure on unprotected skin should not exceed $30 \text{Jm}^{-2}$ within an 8 hour period. For UVB and UVC wavelengths (<315nm), the effective radiant exposure on unprotected eyes should not exceed $30 \text{Jm}^{-2}$ within an 8 hour period. For UVA wavelengths (400-315nm), the total radiant exposure incident on unprotected eyes should not exceed $10^4 \text{Jm}^{-2}$ within an 8 hour period.  

**Administration**

1. The responsibility for UV safety rests with the Head of Department who should appoint a Departmental Non-Ionising Radiation Protection Supervisor (DNIRPS) to assist in ensuring the day to day compliance with these Local Rules. The Head of Department may appoint the Departmental Safety Coordinator, the Departmental Radiation Protection Supervisor or another individual as he/she considers appropriate. This responsibility extends to ensuring that all members of his/her staff are aware of the hazards of UV radiation, and also of their responsibilities to both themselves and others within the laboratory. The DNIRPS for this department is [name, phone number]

2. All UV workers within the University are subject to these Local Rules regarding UV sources. Any University worker undertaking UV work in any establishment other than the University must also conform to the Local Rules in force at that establishment.

3. Any person, not being a member of staff or a student of the University, who wishes to undertake work with UV sources on University premises must at all times conform to these Local Rules.

4. The URPO must be notified of all new UV sources within a department so that a risk assessment may be made, and advice
given on maximum permissible exposure in an eight hour period. Any recommended signs, systems of work, protective screens, interlocks etc. must be obtained and in position prior to the equipment being put into use.

5 Equipment emitting UV radiation must only be used by personnel who are adequately trained.

6 Where practicable, access to an area where equipment emits UV radiation should be limited to those persons directly concerned with its use.

7 All cases of erythema (redness of the skin) and any inflammation of the eyes must be reported to the Radiation Protection Office immediately, and to the University Safety Adviser on the standard University Accident Report Form. Both of these effects are caused mainly by radiation of wavelengths shorter than 315nm. (UVB and UVC).

8 The DNIRPS must maintain an inventory list of all UV equipment in their department and ensure that this is periodically reviewed, updated and appended to these Rules.

General Protective Measures

9 Hazard warning signs should be used to indicate the presence of ultra-violet radiation which may pose a risk to health. Where necessary warning lights may be used to show when equipment is energised. The URPO will advise departments on this matter.

10 All U.V. sources should be operated in sealed housings or behind screens. Sealed housings may contain windows of suitably absorbent material e.g. acrylics, PVC, window glass.

11 If the removal of a housing cover may result in high exposure the URPO may recommend that interlocks should be fitted to the source housing in order to prevent excessive exposure.
The intensity of reflected radiation should be kept to a minimum, e.g. by avoiding light glossy surfaces and shiny metal objects in the vicinity of U.V. sources.

**Personal Protection**

13 All exposure times should be kept to a minimum. Distance is also a safety factor.

14 Some U.V. radiation is accompanied by visible (blue) light, so avoiding such light avoids UV exposure. However, the intensity (or brightness) of the visible component is no guide to the U.V. hazard. Note: Some UV sources DO NOT show a blue visible light component. These are particularly very hazardous. If in any doubt as to control measures for such sources the URPO should be consulted.

15 Portable U.V. sources, which are not mounted on a stand during use, should always be used in such a way that the radiation is directed away from the eyes.

16 Protective goggles, spectacles or face masks must always be worn if there is a potential eye hazard. Skin on the hands and arms which may be exposed must be protected by wearing gloves and long sleeved clothing.

17 High pressure lamps are a potential explosive hazard. Eyes should be protected against flying glass when removing or replacing lamps.

18 Where sources are used which emit U.V. radiation with wavelengths of less than 242nm there must be adequate ventilation because of the hazard of ozone production. An extractor system may be required in some cases.
References


University of Liverpool
Radiation Protection Office

Issued – July 2003
Revised – September 2003
2\textsuperscript{nd} Revision – October 2004
3\textsuperscript{rd} Revision – November 2008