



# **Radiation Protection Organisation Within Glasgow University**



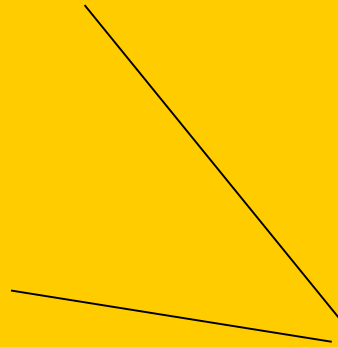
## Organisational Chart :

- Principal – ultimate responsibility
- University Court – ‘Board of Directors’
- Health Safety & Wellbeing Committee
- Radiation Protection Adviser

Radiation Protection Service

Local Radiation Supervisors

Occupational  
Health





# **Radiation Protection Legislation**

## **The Environmental Authorisations (Scotland) Regulations 2018**

## **The Ionising Radiations Regulations (IRR17)**



## **IRR 2017**

**All radiation workers are registered and come within two designations:-**

- **Classified Worker**
- **Unclassified Worker**



## **Classified Radiation Workers**

Annual Dose > 6mSv or chance of internal dose

Radiation Passbooks – not in general use

Periodic Medicals

Registered with HSE



## **Unclassified Radiation Workers**

Apart from radiation medicals, these workers are treated the same as classified workers.



## **Other Categories of Workers**

- Technicians Aged 16-18
- Pregnant Radiation Workers – 1 mSv max
- Visitors to the University – treated as Members of Public



# **Radiation Areas**

Controlled Radiation Area

Supervised Radiation Area





**Controlled Radiation Area**



**NO ENTRY Unauthorised Personnel**



# System of work

## IONISING RADIATIONS REGULATIONS 2017

Regulation 19(3) permits an employee who is not a classified radiation worker to enter and remain in a "controlled" area provided that person abides by the terms of a written system of work which ensures that they cannot be exposed to radiation to an extent exceeding the relevant dose limit.

### SYSTEM OF WORK

This "controlled" radiation area may be used by unclassified radiation workers for dispensing radioisotopes and for other manipulations of radioactive material subject to the following conditions:

- 1 On entry, a preliminary radiation survey must be carried out to verify that the radiation dose rate is less than  $3 \mu\text{Sv h}^{-1}$  (8 cpb on a standard one inch GM minimonitor) and to check that there is no unfixed contamination of the working surfaces.
- 2 All manipulations must be carried out in accordance with the Local Rules.
- 3 For each radioisotope, the maximum activity of stock solution which may be dispensed and the maximum activity of the aliquot which may be manipulated by an unclassified worker is given in the table below.

<b>Radioisotope</b>	<sup>3</sup> H	<sup>14</sup> C	<sup>35</sup> S	<sup>33</sup> P	<sup>32</sup> P	<sup>125</sup> I	<sup>131</sup> I
Stock Solution Maximum Activity ( <u>MBq</u> )	500	250	250	250	50	5	5
Dispensed Aliquot Maximum Activity ( <u>MBq</u> )	500	50	50	50	5	5	5

J M Thompson  
University Radiation Protection Officer

February 2018



**Supervised**



**Radiation Area**



## APPENDIX II: STORAGE AND HANDLING LIMITS FOR SUPERVISED RADIATION AREAS

**Storage Limit:** This is the maximum activity of the radioisotope in question which may be **stored** in the supervised area.

**Handling Limit:** This is the maximum activity of the radioisotope in question which may be **used** in the supervised area.

e.g. When dispensing aliquots from a stock solution of a  $^{14}\text{C}$  radioisotope, the maximum permitted activity of the stock solution for a supervised area is 50 MBq.  $^{14}\text{C}$  solutions of greater activity should be dispensed in a controlled radiation area. It is however, permitted to store up to 250 MBq of  $^{14}\text{C}$  in a supervised radiation area.

Radioisotope	Storage Limit (MBq)	Handling Limit (MBq)
$^3\text{H}$	500	500
$^{14}\text{C}$	250	50
$^{35}\text{S}$	250	50
$^{32}\text{P}$	50	5
$^{36}\text{Cl}$	50	5
$^{45}\text{Ca}$	50	5
$^{51}\text{Cr}$	100	50
$^{59}\text{Fe}$	5	5
$^{64}\text{Zn}$	5	5
$^{75}\text{Se}$	5	5
$^{125}\text{I}$	5	5
$^{131}\text{I}$	5	5

Limits for other radioisotopes may be obtained on request from the RPS



## **Radiation Dose Records**

- Radiation Dosimeters - RPS
- Thermo luminescent Finger Dosimeters - RPS
- Reporting of Radiation Doses – RPS/Local level



# **The Environmental Authorisations (Scotland) Regulations 2018**

## **- Keeping and use of Radioactive Material**

- Ordering of Radioactive Material – Local RS
- Record Keeping – next slide
- Storage – ‘safe and secure’ e.g. Lockable fridge



**University of Glasgow**  
**Environmental Authorisations (Scotland) Regulations 2018 / The Ionising Radiations Regulations 2017**

**Radiochemical Stock Record Card**

Department:

User/Group:

Source no.:

Date of arrival:

Radioisotope:

Activity:

Chemical form:

Catalogue no.:

Storage place:

Date	User initials	Activity used MBq	Activity remaining MBq	To drain MBq	To solid MBq	Scint waste MBq	Other MBq

Cont'd overleaf

Date of final disposal:

Total activity disposed to drain:

**Radiation Record Card**



## **Radiation Surveys**

- RPS Surveys
- Local Surveys
- Self Monitoring
- Thyroid Monitoring – radioiodine's
- Swabs & liquid scintillation counters for Tritium





## **Transport of Radioactive Material By Road**

- Movement of Radioactive Material within the University - Allowed
- Transport of Radioactive Material out with the University – Courier or RPS



# **Emergency Procedures**

**And/Or**

# **Serious Radiation Accidents**

Each College/School has their own procedures – see Local Rules