

## University of Dundee

### RADIATION SAFETY SUB-COMMITTEE

A meeting of the Radiation Safety Sub-Committee was held at 10am on 6<sup>th</sup> December 2005 in River Room 3, Floor 9, Tower Building.

Present: Dr David Hewick (DH) [University Radiation Protection Adviser & Convener]  
Mrs Lesley Hewitt (LH) [Minutes]  
Mr Damian Leddy  
Miss Aileen McLaren (AM)  
Mr Martin Rollo (MR)  
Ms Julie Smyth (JS)  
Mr Ewan Starke  
Dr David Sutton (DS)  
Dr Peter Taylor

Apologies were received from Sandy Chudek (SC), Brian Eddy (BE), Bob MacKintosh (BM), Lisa Grayson (LG), Sheila Sharp (SS)

### MINUTES

1. Minutes of the meeting on 8<sup>th</sup> December 2004/Matters Arising

The Minutes were approved.

**Matters Arising:**

All matters arising from the previous minutes were covered under the agenda. DH thanked LH for acting as minutes secretary in the absence of LG.

2. New Items for the Agenda

There were no new items for the agenda.

3. Composition of the Committee

DH welcomed Damian Leddy (DL), Trainee Radiation Protection Adviser who, it is anticipated, will replace DH when he retires in 2008. SC resigned from the Committee since he is no longer involved with work using ionising radiation.

4. MRC Unit

There was no-one present at the meeting from the MRC Unit.

5. Medical School

The report prepared by JS (Appendix A) was distributed to the group at the meeting. There were no matters arising from this report. DS said that the Sterile Technologies Group (STG) will be taking over from Safeguard as the contractor responsible for the disposal of radioactive waste.

## 6. Main Campus

### a) Single-Site Licence

The Scottish Environment Protection Agency (SEPA) indicated that it would soon start processing Single Site Licence applications. However, as the University application had been already submitted (for almost two years) it was being treated as an approved Single Site Licence thus saving some £7,000 in annual subsistence fees which would have been incurred if the old multiple-licence charging regime were still operative.

### b) CIR, New Stores, MSI/BSI Decommissioning,

The Centre for Inter-disciplinary Research (CIR) which has been built as an extension to the Wellcome Trust Biocentre (WTB) building, is essentially complete. The transfer of staff and equipment seems to have proceeded successfully. Prior to the move, there was a SEPA inspection. Final approval was given subject to a number of minor suggestions, which were implemented.

Safety Services have, in the WTB basement, a solid waste store which will be moving to the CIR basement. DH stated that the CIR store will have to be finished to a satisfactory standard before the existing store can be vacated. To facilitate the anticipated move, some two-thirds of the stored solid waste was removed by contractor on 1 December.

It is unclear what departments will occupy the vacated space in the Medical Sciences Institute (MSI), although it is likely that Biological Sciences will be prime contender. It is important that all vacated spaces/buildings are adequately decontaminated/decommissioned.

### c) Laser Inspection

Lindsey Cairns, Health and Safety Executive specialist radiation inspector is visiting on Monday 12<sup>th</sup> December to inspect potentially hazardous laser apparatus on the main campus. There are four units using Class 3b/4 lasers on the main campus; Civil Engineering, Physics and two units in the School of Life Sciences. DH has given Mrs Cairns copies of the University of Dundee's codes of practice relating to lasers. These indicate that there are also Class 3b/4 lasers located in the Medical School at Ninewells Hospital. It is therefore conceivable that this location could be targeted for a future inspection.

## 7. Waste Disposal

### a) Sealed Source Disposal Programme

Central government funding is available to pay 50% of the disposal costs of redundant sealed sources. On 1 December two Nickel-63 sources, from redundant gas chromatographs, were removed under this scheme. There are still four Radium-226 sources (from disused scintillation counters) to be removed at a subsidised (but as yet unknown) cost. An additional radium source has recently been discovered at the Medical School. It is planned to remove this with the other four sources if the total cost is not prohibitive.

### b) Costs

The annual comparative waste disposal costs for the Main Campus and the Medical School are shown in the table in Appendix B.

### c) High-activity Sealed Radioactive Sources and Orphan Sources (HASS) Regulations 2005

These regulations become applicable to new and existing HASS in January 2006 and 2008 respectively. However, if a new HASS is installed prior to 2008, all existing HASS become subject to the regulations. The University has existing high activity sources in its two caesium irradiators located on the Main Campus and Medical School. A significant feature of the new regulations is '...make provision by way of a financial security or any other equivalent means for

the safe management of sources when they become disused sources.’ The mechanism of such funding for the disposal of disused HASS in the universities and the NHS has yet to be decided.

8. RPS Matters

New RPS for second floor of the CIR building is Nancy Kirk. A new floor manager for the mezzanine floor of the CIR will be appointed on 9<sup>th</sup> January 2006. The appointee will also be an RPS.

9. Date of Next Meeting

The next meeting of this Committee will be held in the same venue (if possible) on Tuesday 16<sup>th</sup> May at 10am.

## APPENDIX A

### UNIVERSITY OF DUNDEE RADIATION SAFETY SUBCOMMITTEE DECEMBER 2005 UPDATE ON RADIATION PROTECTION IN MEDICAL SCHOOL

#### UNSEALED SOURCES

##### SEPA Inspections

No SEPA inspections have been carried out since last meeting (December 2004).

##### Internal Audits

University departments were audited in February 2005 by Radiation Physics under Ionising Radiation Regulations 1999 and Radioactive Substances Act 1993. Summary reports and recommendations were made. Audit highlighted need for better record keeping where radioactive stock is stored in individual vials rather than original stockpot.

##### Conditions for Maternal & Child Health Sciences

There have been problems with the management of radioisotopes in MaCHS over the last 3 years. Follow up visit made in August 2005 showed that RPS had not acted upon any of the recommendations in February audit report and the same examples of poor practice were observed 6 months later. Immediate action was required and the RPS was given a one month period to rectify the situation during which time improvements were made. Retention of department limits is now under the condition that RPS conducts routine visits to Hot Lab & submits a monthly summary report to ensure that standards are being maintained on regular basis.

##### Staff Training

Since last meeting in December 2004:

- (i) Radioisotope Users Course has been held twice in Medical School with a total of 17 attendees.
- (ii) Induction talk has been given on 8 occasions to 26 staff.
- (iii) Radiation safety tutorial has been given to 2 staff who have not had adequate training or experience. This allows them to work under supervision prior to attending RIUC.

##### Routine Duties

Includes monthly waste returns, RPS monthly meetings, contamination monitor calibrations and monitoring of staff.

##### Registration of Staff Using Unsealed Sources

There are currently 120 staff on Medical School RADPER database.

##### Staff Doses

During 2004 there were a total of 9 staff issued with whole body monitors and 19 staff issued with extremity monitors. Recorded doses are below the dose constraints of 6 mSv (whole body) and 150 mSv (extremity) for radiation (non-classified) workers. There were no reported cases of overexposure. Summary of 2005 doses will be available at next meeting.

### Extremity Monitors for Biomedical Research Centre

Review of RADPER & finger stall issue against monitoring criteria showed many discrepancies. A practical solution was sought with RPS to ensure that staff are monitored appropriately without the need for constant RADPER review or issuing excess finger stalls. 20 generic BRC finger stalls are issued each month along with log sheet. Users who require a finger stall that month are issued one of the 20 and their name put against that stall on the log sheet. Radiation Physics have a list of users who should be issued a finger stall when required based upon their RADPER form & monitoring criteria. This is compared to monthly log sheet and discrepancies highlighted to RPS. Dose records are still maintained for each individual user. System started in October 2005 & will be formally reviewed after 3 month period.

### Unauthorised Disposal of Radioactive Waste

In May 2005, a blue sack containing 0.25 MBq of P-32 was removed from radioactive waste bin in Supervised Area and disposed of to domestic waste stream (black). The domestic had been seconded from ward area and was not familiar with laboratory block waste. Details were forwarded to SEPA who stated that the disposal was not in violation of the Authorisation Certificate and no further action would be taken. RPA is satisfied that the labelling of the waste bin is appropriate and the incident was down to procedural deficiencies with domestic services. As result of this incident, designation of the lab has been changed to Low Level Area for routine bench work with Supervised Area status evoked for dispensing or high activity work, in agreement with Risk Assessment. Local Rules and Access Arrangements have been amended accordingly.

## **SEALED SOURCES**

### Surplus Radioactive Sources

Government has provided funding for a UK wide program for disposal of surplus radioactive sources. The program is being managed through Environment Agency in association with SEPA. University of Dundee application is being co-ordinated through Safety Services and includes two sources registered at Medical School- Nickel-63 HPLC instrument source and Radium-226 LSC instrument source. Funding was secured for Nickel-63 source and it was disposed of to Safeguard International on 30/11/05.

### Instrument Source

A liquid scintillation counter was discovered in a lab formerly registered to Obsterics & Gynaecology (pre 2000). The label on the side indicated that a Radium-226 source was contained within the instrument- this was confirmed by Radiation Physics. Long term storage for the instrument has been agreed with Prof Ann Burchell, MaCHS and steps are being taken to move the instrument from its present location. As the source falls under the Radioactive Substances (Testing Instruments) Exemption Order 1985, the inventory will be updated and sent to SEPA.

## **NON-IONISING RADIATION**

### Inventory for Non-Ionising Sources

Inventory of non-ionising sources was first made in 2001 and is currently being updated.

### Risk Assessments for Non-Ionising Sources

Program will be reviewed when inventory has been updated.

## **X-RAY SOURCES**

### X-ray Irradiator in Medical School Resource Centre

Commissioning of the unit by Radiotherapy Physics is almost complete. It is expected that x-ray irradiator will be put into routine use from January 2006. RADNUC[X] and RADPER[X] forms will be used to register the unit & staff. Radiation Protection review took place 22/11/05. No problems or issues to report.

Julie Smyth  
Radiation Physicist  
01/12/05

## APPENDIX B

### Annual Campus/Ninewells Radioactive Waste Disposal Costs

| Campus [calendar year] |          | Ninewells [financial year] |          |
|------------------------|----------|----------------------------|----------|
| Year                   | Cost [£] | Year                       | Cost [£] |
| 2002                   | 20,508   |                            |          |
| 2003                   | 12,684   | 2002/3                     | 20,961   |
| 2004                   | 12,122   | 2003/4                     | 22,547   |
| 2005                   |          | 2004/5                     | 20,250   |