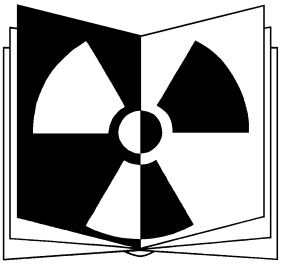

Association of **U**niversity **R**adiation **P**rotection **O**fficers

Dec 2006

AURPO NEWSLETTER

Editor T.J.Moseley

CONTENTS **Page No.**

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EDITOR'S INTRODUCTION

Welcome to the late December/ Christmas edition of the AURPO newsletter. It made me feel better when I found out that HSE were running behind with their RPA News (no November one from them this year). Perhaps it has been a hectic autumn for everyone this year. I think I'd put it down to the last throes of a Government as it seeks action on a host of initiatives, as they all seem to have come at once.

'Stakeholder engagement' is the in thing, although Department for Transport missed the bus initially they are now trying hard to get up to speed. It is to be hoped that they actually listen to their stakeholders and follow through on the Government's 'Better Regulation Initiative' when they produce the 2007 Carriage of Dangerous Goods Regulations.

DEFRA have asked us to get the crystal ball out and imagine a world 'close to zero' in twenty years time. Perhaps they are looking for a decline in economic activity brought about by over burdensome regulation or are just trying to put people off using radioactive materials. Their strategy appears to have worked in the past 10 years but it is hard to forecast what will happen in the future. Thanks to those of you who have tried to estimate future discharges – I will now try and pull together a response to DEFRA from our sector.

A review of Exemption Orders now looks a strong possibility, if this can be presented as reducing the regulatory burden. They will use the previous review, which was shelved in 2002, but wanted to start again with a clean sheet of paper to emphasise that anything is possible and all options are on again – perhaps science can win this time over expediency?

I am escaping to New Zealand for a month in February, so can not promise a full newsletter in March – there might just be a bulletin!

Reminders:

1. Check that you've paid your subs – see page 5
2. Don't forget to renew your Health Physics subscription – page 6
3. Watch out for flyer 'Call for Papers' for Greenwich Meeting. Please circulate it around your institutions to interested parties.
4. Don't forget to use Hasnet-Rad as a discussion forum. If you are not signed up to this contact Gus Zabierek (g.a.zabierek@bham.ac.uk) who will get you started.

Contributions for next issue by 6th March 2007 preferred format Word emailed to -

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PRESIDENT'S REPORT

We had a splendid conference in Oxford in September. The update programme and the scientific programme were excellent. The basics in radiation protection after all are not boring and kept the audiences glued to their seats. The social evening at Lains Barn was well attended and everybody enjoyed themselves, dancing the night away. My thanks go to Gillian Jenkins for organising this fabulous time for us.

It was the first time we had proffered papers presented. Next year we plan to both advertise this sooner and to aim it at students at the post graduate level. For the members who could not attend the conference you will find valuable reports in this Newsletter.

The AGM was very well attended. As I reported to the AGM, the Executive is this year reviewing the Association Constitution to bring it up to date and to provide a clearer definition of what the Association is about and how it operates. There will be revision of the committee structure, its working groups and terms and reference. I hope this will help persuade some of you to come forward with offers of help in running the Association businesses. If we want the Association to continue to be at the forefront of its field, this will require the assistance of all members in the running of Association businesses. Any ideas or kind offers of help in any way will be very much appreciated. After all, the Association belongs to all of its members!

Gillian is fine tuning the next conference in Greenwich to ensure that we have a comfortable and enjoyable stay. Our TCC is also busily working on the theme and planning details of the Scientific Programme.

I am sure you always find the newsletter very useful and it is highly regarded by many outside AURPO. Please help the Editor of the Newsletter by regularly submitting items - it does need the input from you, the members. Please contact Trevor if you wish to help in any way.

Sonia Nuttall
23rd November 2006

Membership Secretary's Report

We are pleased to welcome the following new members in the past year:

Full Members

Mr M Bell	University of Exeter
Mr M Brodie	Aberdeen Radiation Protection Services
Mr A R Butterworth	University of Bristol
Mr R M Cotton	Radiation Protection Services, Rotherham
Mr J Fear	Imperial College London
Dr P Harris	Sheffield University
Mr A Hogan	Private
Ms V Ibbetson	Aurora Health Physics Services Ltd
Mr P J Jewell	University of Bath
Ms A L Jones	Imperial College London
Mr A D Laing	University of Newcastle upon Tyne
Mrs D Tyler	National Physical Laboratory

Affiliate Members

Active Collection Bureau Limited	Mr M Warren
Ionactive Consulting Limited	Mr M Ramsay
Lablogic Systems Limited	Mr E Zahirovic
Suffolk Radiation Technical Services Limited	Mr R M Guest
White Rose Environmental	Mr C Westwood

Tony Richards awarded Life Membership at Oxford Conference

Anthony Roger Richards graduated from Imperial College as an Associate of the Royal College of Science in 1964 having achieved a BSc in (Special) Physics before moving to Guy's Hospital Medical School to undertake a MSc. in Radiation Biology and Radiation Physics.

He then spent two years at Berkeley Nuclear Power Station as a Health Physics Assistant before embarking on a hospital career starting as a basic grade physicist at the Hammersmith Hospital. In 1971 he moved to Wales and took up post as Senior Physicist at the University Hospital of Wales in Cardiff, which was to be the start of a 35 year career in which he has progressed from Principal Physicist, to Consultant Clinical Scientist and to his current role as Head of Radiation Physics and Protection. He is also Radiation Protection Adviser to the University of Wales College of Medicine (which is now part of Cardiff University) and in his spare time he is RPA to three commercial firms.

He was persuaded by John (Peter) Griffiths to join AURPO around about 1988 when his boss retired and at a time when AURPO had relaxed its rule of only allowing one member per institution. Tony has served on the Executive Committee as President, Chairman and Secretary (twice).

He has always been a very active member of the Executive and has represented AURPO on a number of committees. From 1993-2002 he was AURPO representative on the Environment Agency's Small Users Liaison Group and on the HSE Ionising Radiations Forum from 2003-2004. He was also representative on the BSI Technical Committee NCE/2 Health Physics Instrumentation from 1988-2002, SRP International Committee from 1998-2005 and prior to that he was a council member of BRadPA from 1993-1998. He is an RPA Assessor and has been on the on the Board of RPA2000 since 2002, also acting as Treasurer to the Board. In addition he is a Tutor on the AURPO/Strathclyde Radiation Protection Course and since 2004 has been a member of the Environment Agency Steering Group and Government Interdepartmental Committee for the sealed source disposal programme.

As well as AURPO, Tony has also been active in other societies and undertook the role of Honorary Secretary of Institute of Physical Sciences in Medicine (now IPEM) from 1986-1988, has been a member of SRP Council since 2004 and was the chairman of SRP's Practical Radiation Protection Topic Group from 1998-2001.

Tony has served the Association well over many years and fully deserves to receive his Life Membership in respect of this. We wish him all the best.

Christine Edwards
Membership Secretary

Association of
UNIVERSITY
RADIATION
PROTECTION
OFFICERS

AURPO Subscription 2006-2007

To all members

The annual subscription of £20 (£10 for retired members) to the Association was due on the 1st July 2006. Members who attended the Annual Conference in September 2006 may have paid the subscription fee at the time of registration. Many members have still to pay. If you are not sure whether you have paid please check with the treasurer. If you need to pay please return the tear-off slip below, together with your cheque made payable to AURPO, as soon as possible.

Gillian Glazier

Honorary Treasurer

To: Mrs G C Glazier, Honorary Treasurer, AURPO

21 Viewland Road
Plumstead
London SE18 1PE

I enclose a cheque **payable to AURPO** for the sum of **£20 (£10 retired member)** in payment of my subscription to the Association of University Radiation Protection Officers for the **year 2006-2007**
(1st July 2006 to 30th June 2007).

I confirm my membership of IRPA through the Association.

Name: ……
Address: ……
……
……
……
Telephone: ……..
Fax: ……..
Email: ……..

Signed: …… **Date:** …….

HEALTH PHYSICS RENEWAL

Dear AURPO Members

It is time of the year to renew the subscription of Health Physics again. The 2007 subscription will be £50.

If you would like to subscribe the 2007 Health Physics, please let me know of your intention by email to me as soon as possible.

Then please send your name and *address, where the journal will be delivered*, to me together with a cheque for £50, payable to AURPO, by the 15th of January 2007.

Please note that you could pay for the Health Physics subscription by banking transfer BACS.

For payment by BACS: The details of AURPO account are:

Account Name: Association of University Radiation Protection Officers
Bank Name: NATIONAL WESTMINSTER BANK
Bank Address: Leeds City office
8 Park Row
Leeds, LS1 1QS
Bank Sort Code 60-60-05
Bank Account No 98900846

Please send the Remittance advice to:- Mrs S Nuttall, Honorary Treasurer AURPO, Faculty of Health & Life Sciences, De Montfort University, The Gateway, Leicester LE1 9BH

In any case if you have any queries please do not hesitate to contact me at :- snuttall@dmu.ac.uk or give me a call at 0116 250 6153.

Thank you

Sonia

Mrs S. Nuttall
De Montfort University

Scientific Program – Back to Basics

With help from Phil Tattersall, for the morning session, the following is a report on the proceedings from the scientific meeting.

The day began with the keynote presentation providing an **Update on Epidemiological Studies** by Dr Richard Haylock from the Epidemiology Section of the HPA's Radiation Protection Division.

He began, unsurprisingly, by identifying the study of Japanese Atomic-bomb survivors, the lifespan study (LSS) as the most important source of data. Almost 90,000 survivors, for whom doses have been calculated, have been followed since 1950. The large numbers of people within the study and the length of follow-up are its greatest strengths whilst uncertainties over the doses received, the acute nature of the exposure and the fact that half of the study population are still alive are, from an epidemiological viewpoint, weaknesses.

The effects on the study of the most recent dose estimates (referred to as DS02) were discussed prior to an evaluation of recent reports on cancer risk based, principally, on LSS. These reports take account of the continuing follow up period of LSS together with data on cancer incidence rather than mortality – cancer survival rates having increased significantly over the past 25 years.

The US National Research Council advice on the Biological Effects of Ionizing Radiations has recently published BEIR VII as a replacement/update of BEIR V. Richard explained the differences between the two reports e.g. the application of a dose and dose rate effectiveness factor (DDREF) before summarising the reported cancer risk factors.

A slight increase in the incidence of solid cancers to 5.1% per Sievert with a slight decrease for Leukaemia to 0.5% per Sievert.

The use of epidemiological studies by ICRP in developing its new recommendations was discussed before summarising the impact as follows:

- overall cancer risk (Based on incidence) is slightly reduced;
- a new system for genetic/hereditary risks;
- no changes to dose limits.

For non-cancer diseases ICRP concluded that there is no direct evidence of such effects at low doses and that they can therefore be disregarded for protection purposes.

Finally Richard reviewed a number of studies of occupationally exposed populations (Radiation Workers). The UKs National Registry for Radiation Workers (NRRW) is undergoing its third analysis to date. Both NRRW and the International Collaborative Study of Radiation Workers in the Nuclear Industry co-ordinated by the International Agency for Research on Cancer (IARC) will continue to increase statistical "power" and therefore importance over time – NRRW has 3.5 million person years and the IARC study 5.1 million.

Professor Sarah Darby from the hosting University of Oxford dealt with **Radon in Homes and Lung Cancer Risk** by presenting the results of an analysis of data from 13 case control studies across nine countries.

This appeared from the non-statistical viewpoint to be a particularly difficult analysis with the obvious and significant confounding factor of tobacco smoking but the clear conclusions were:

- A clear link between radon exposure and lung cancer with an increased risk of 16% per 100 Bq m^{-3}.
- The absolute risk to smokers and ex-smokers is much greater than to lifelong non-smokers.
- A significant dose response relationship even below currently recommended action levels.

This final point is currently being considered by HPA's Advisory Group on Ionising Radiations and could result in a revision of advice to UK government on radon.

Dr John Harrison (Group Leader, Radionuclide Effects within Radiation Effects Department at HPA's Radiation Protection Division) began his consideration of **Radiation and Tissue Weighting Factors** with a reminder of the work of the Committee Examining Radiation Risks of Internal Emitters (CERRIE) of which he and two other speakers, Sarah Darby and Jack Simmons, were members.

He further reminded us that, for internally deposited radionuclides, the committed dose calculated from the time of exposure until the exposed individual reaches 70 years of age. That the equivalent dose to an organ or tissue is modified from the absorbed dose by a radiation weighting factor and that the equivalent dose is the sum of equivalent doses modified by a tissue weighting factor.

Effective dose calculations using Biokinetic and Dosimetric models were reviewed. Although radiation weighting factors W_R is based on Relative Biological Effectiveness (RBE), RBE values differ for different end points. For example alpha particles have an RBE of 20 for liver and lung cancer but as little as one for leukaemia.

John then drew attention to the changes to Tissue weighting factors (W_T) proposed by ICRP and how they can vary significantly between males and females.

Dr Kevin Prise of the Gray Cancer Institute gave a very erudite but highly understandable presentation dealing with **Bystander Effects and Adaptive Responses**.

The bystander effect is observed when cells respond to the fact that their neighbours have been irradiated. Kevin's experiments in this area have utilised novel microbeam approaches allowing the irradiation of individual cells and then monitoring cell to cell signalling.

The adaptive response is where pre-treatment with a small radiation dose leads to some protection against a subsequent exposure to a higher dose. Evidence for this has been used to claim a hormetic effect.

Adaptive and bystander responses have a common feature in that they are observed at low doses and suggest significant non-linear dose responses at low doses and potentially challenge the LNT approach but much further study is still required.

The final morning paper was on **Microdosimetry** given by Professor Jack Simmons.
Micro dosimetry looks at energy deposition in individual tracks rather than in whole tissues, working on the principle that it is the effect of radiation within a cell, which is important for cancer induction. Wall-less proportional counters utilising 1" diameter cells are used to measure the energy deposited. Only at relatively high doses will most cells in a given volume be hit. It has been estimated that it takes approx. 100 Gy of low LET radiation, or 1Gy of high LET radiation to give at least one hit to all cells in an irradiated tissue. At these levels one can reasonably use our current definition of dose, but at lower radiation levels a large proportion of cells will receive no dose at all. The mean dose per cell, averaged over a tissue or organ does not equal the mean dose per irradiated cell. For the same amount of energy deposited, one can therefore get different "dose" depending on whether you assume the target is the whole organ or individual cells.

Jack indicated that it took 1.2 MeV of alpha energy to inactivate a human lung cell and that this could be delivered by 3 alpha particles depositing 100keV/µm over a distance of 4µm.

The afternoon session started with a presentation from Mike Renouf of BNFL on **Kerma, Ambient Dose etc**. Mike started by looking at ICRP 74, which describes radiation quantities in a very effective way. Kerma is a measure of the kinetic energy released per unit mass and the term was first introduced in 1958. Mike discussed the concept of transfer energy, which included energies that could subsequently be lost and went on to describe absorbed dose and discussed the development of other dose units.

Peter Burgess was welcomed back again to discuss the topic of **Instrument Selection**. As ever Peter gave an enthusiastic and entertaining presentation. To start with Peter reminded people that they need to be clear in their own minds what the purpose of the monitoring is and what they are trying to detect – what type of radiation and whether dose-rate, dose or contamination. You need to make sure you have the right instrument for the job. He then went through a range of scenarios and highlighted things people needed to be aware of e.g. when dealing with pulsed sources, when trying to detect alpha contamination, with self-absorbance in surfaces. Peter looked at the pros and cons of the different types of monitoring equipment available and the exhibitors had been able to provide him with a wide range of props. He finished off by referencing the following useful guides:-

- NPL GPG 30 on practical radiation monitoring which is available as a free download – http://www.npl.co.uk/cgi-bin/guide_info.pl?guide=30
- NRPB R326 Guidance on the choice of instruments – http://www.hpa.org.uk/radiation/publications/archive/reports/2001/nrpb_r326.htm
- Radiation Detection and Measurement 3rd Edition, Glenn F Knoll, John Wiley and Sons Inc, ISBN 0-471-07338-5
- http://www.ukaea.org.uk/news/clearance_and_exemption.htm (Chapter 8 covers measurement)

Next up was Gareth Thomas (HSE) who was endeavouring to improve our **Investigation Techniques and Reporting**. He started by emphasising how important this is with the statement that ‘a good report to the HSE could prevent a prosecution’. He showed how effective investigations that were followed up by improved practices would be very beneficial to employers. The costs of workplace injuries run into billions of pounds/year and it has been estimated that the costs of effective investigations will pay for themselves if only 2% of future accidents/events were prevented. The amount of effort put into an investigation should be determined by the potential consequences/doses received, likelihood of repeat occurrences, potential for remedial measures and whether public affected. Gareth highlighted 6 regulations from IRR99 that required an investigation (Reg 8(7), 22(1), 22(3), 25(1), 30(4) and 32(6)) . Gareth detailed 9 stages to an investigation: planning, preparation, conduct & liaison, establishing circumstances, interviewing, establish physical evidence, gathering intelligence, assessment of evidence, and, recording and reporting. The RPA should be involved in all investigations. When interviewing people and gathering evidence start with the people directly concerned and then move on to supervisors and management as appropriate. There may be a need to notify HSE of certain occurrences and Gareth identified nine such circumstances:-

- classified person’s recorded dose inaccurate or > a dose limit - Reg 22(8)
- suspected acute/chronic overexposure - Reg 25(1)
- unauthorised release, spill or theft - Reg 30(1&3)

- suspected medical exposure mgti - Reg 32(6)
- generator failure to terminate - RIDDOR
- radiography source failure to retract - RIDDOR
- implementation of emergency plan - REPPIR
- review of emergency plans & doses - REPPIR
- unintentional radiation exposure - HASS

Of course when the HSE get involved there is then the possibility of enforcement action and possible prosecution. If an offence has occurred and the evidence is strong then a prosecution is likely if it is deemed to be in the public interest.

The HSE have found that employers investigations can vary from the excellent to very poor and that only 24% of the findings of accident investigations are fed back into risk assessments and that far too often it is the victim that is blamed rather than looking for organisational and underlying influences.

For further information Gareth referred us to two documents:-

- HSE Contract Research Report 344 – Accident investigation – the drivers, methods and outcomes (2001) www.hse.gov.uk/research/crr_pdf/2001/crr01344.pdf
- HSE Guidance:HSG245 - Investigating accidents and incidents – a workbook for employers, unions, safety reps and safety professionals. (available from HSE Books)

Finally Dr Julian Dean from NPL gave us a presentation on **Tritium Standards and measurements and an Update on Standards for Decommissioning**. First of all this looked at the various forms of tritium that needed to be detected and measured, how NPL standardises its counting procedures, the complexities of tritium contamination monitoring and how to deal with different types of sample. The uncertainties involved in wipe testing of surfaces were also discussed.

Then Julian went on to summarise the outcomes of a nuclear decommissioning workshop held at NPL in 2005. the priorities had been to develop reference materials/sources that would assist decommissioners to quantify the activity of the waste materials generated and hopefully distinguish between wastes that were below clearance levels and those that were not. Other needs were identified relating to surface contamination monitoring. A report on the meeting outcomes can be found on NPL website. The first priority has been to develop a standard 200L drum of soft wastes containing gamma emitters with an activity of <0.4Bq/g and an overall density of 300kg/m^3. The ‘standard drum’ should be circulated over the next few months for evaluation.

Tuesday Afternoon- Updates and proffered papers

Peter Marsden gave me these reflections on the opening afternoon.

This year, the Tuesday afternoon session featured both proffered papers and invited presentations, the former being assessed for a £500 award from the Association to the presenter of the best paper.

In the first of these, Hugh Wilkins (Royal Devon and Exeter Hospital) described the setting up of a temporary remote monitoring unit in a Cumbrian school as a collaborative exercise with BNFL Sellafield. Hugh described how over 300 volunteer evacuees were monitored in a 2 - stage process in under 2 hours. Glen Hardcastle (Aurora HP) followed this with a tour of some of the diverse projects he has been involved with relating to radon in the workplace. As

well as radon affected areas, Glenn also covered radium and uranium legacies, oil/gas extraction industries and water bottling plants, where concentrations of several hundred Bg.m-3 in borehole water were noted.

Craig Morrissey (Surrey University) gave the prize-winning presentation comparing deterministic and Monte-Carlo methods for neutron and photon dosimetry at a medical linear accelerator facility. He concluded that, whilst the former is quick, the latter is a more useful for radiation protection as it needs fewer approximations and is more flexible once set up.

After tea, the invited speakers were led out by Colin Partington (RPA2000) who described in remarkable detail, the non-existent HSE Statement on RPAs. For an encore, Colin went on to present the RPA2000 plans to change their procedures in light of the, soon to be still non-existent, HSE statement. RPA hopefuls may in future be required to present evidence of advising employers on those matters IRR99 state employers should seek RPA advice on. They will need to demonstrate the ability to give clear, adequate and appropriate advice. Thankfully existing RPAs will not have to endure such changes to the re-certification ordeal.

Alan Husher (NaCTSO) described the source categorisation and security measures which apply to sealed sources. The police are now involved with specifying the security of sources in categories 1-4, but will also offer advice on cat 5 sources. Alan emphasised the need for such measures by describing how today's terrorist threat has changed from 30 years ago. The use of radioactive materials to generate fear, disruption and widespread contamination is a real threat.

The session closed with Trevor Moseley (Sheffield University) charting the development of the AURPO/Strathclyde course. The original 2 part course comprised a core of knowledge followed by a practical module to help develop an RPA portfolio. The latter part was dropped in 2005 and the current syllabus focuses on delivering the knowledge base required for an RPO and aspiring RPA. Trevor also outlined plans for an on-line RPS course which is hoped will be available in 2007.

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LASER SAFETY NEWS

Note that the 6th edition of 'Laser Safety Matters' has been published and is available on the HPA website at -
http://www.hpa.org.uk/radiation/publications/newsletters/laser_safety_matters/current_issue/laser_safety_matters06.pdf

The CVCP laser safety guidance has been updated and replaced by a new AURPO Guidance Note No.7 – Guidance on the Safe Use of Lasers in Education and Research. UCEA gave their full approval to the document at their last meeting in November. After a few final editorial touch-ups the document will be posted on www.AURPO.org . An announcement will be made when this has been completed.

Gus and I would like to thank all those members who commented on the drafts we developed.

Looking forward to the 2007 Conference at Greenwich

The Science and Technical Committee have put together a very good programme for the meeting the theme of which will be 'The Future of Radiation in UK Education and Research'. Speakers are being lined-up to give presentations on: Radiation in Schools – how to engage future students in physics and radiation matters; Historical Issues in Radiation Protection – how things have changed in the last 40 years; Public Perception – improving awareness; Discharges to the Environment and Waste Management in the next 20 years; Skills needed for the New Nuclear Build; Pressure Group Issues re peaceful uses of ionising radiations; Decommissioning Issues – the how, who, where and what of decommissioning; The future of the Exemption Orders; Effective Regulation – developing the User–Regulator interface; Training requirements for IRMER.

We also are looking to have another series of proffered papers on the Tuesday afternoon (see separately posted flyer) and updates on the Transport Regulations and possibly HASS implementation if time is permitting.

Greenwich

The College is a National Heritage Site and the town is dominated by it, the Maritime Museum and the Royal Park. The latter consists of a flat area on the edge of Blackheath which contains a deer park, formal flower gardens, a cricket pitch and the Planetarium and Observatory. Its sweeping pathways lead down to the Museum and Queen's House at the bottom of the hill. Across the road is the Royal Naval College and, what was, the Devonport Hospital for Sailors.

The latter now houses the Library and Computer Centre for the University. The College was originally built as a hospital and home for old sailors (like the Chelsea Hospital for soldiers) and one of its Commandants was Admiral James Gordon who, along with Thomas Cochrane, provided the basis of the character Horatio Hornblower. It comprises of four Wren designed buildings, one of which is occupied by Trinity College of Music and the others by the University. Within it are the Royal Chapel and famous Painted Hall (the work of Wren's pupil, Nicholas Hawksmore)

Other places of interest in the town are the Greenwich Foot Tunnel, The Cutty Sark, the Greenwich Theatre, The Fan Museum, St Alfege Church (also Hawksmore) and the Market. A craft market also operates on Wednesdays and Thursdays. There are several interesting shop types, restaurants to suit every taste and many and varied pubs.

The Social Programme

On Tuesday evening you will be whisked off by luxury coach to a mystery location. Have no fear, you will be well dined and entertained! The location for the Conference dinner was a really big problem - everyone is refurbishing next Sept. so in the end I thought we will just have to slum it and I booked the Painted Hall. Finally, on Thursday, those of you who can stay and do the tourist bit will be treated to a day on the river - one of the best ways to see London.

Gillian

NOVEMBER 2006 STATEMENT BY RPA 2000

Revision of RPA 2000's practical competencies and operating procedures

Implications for applicants

Background

As many will be aware, following a consultation process, the HSE has recently published its revised 'HSE Statement on Radiation Protection Advisers'. It is also expected that HSE will be revising some guidance for Assessing Bodies. Both these actions have significant implications for the RPA 2000 Certification Scheme for RPAs. The revised HSE Statement can be found at *http://www.hse.gov.uk/radiation/ionising/rpa/statementrpa.htm* .

The RPA 2000 Board is currently:

- Completing the development of a completely new set of practical competencies, in accordance with the 5 DU areas of the basic syllabus of the revised HSE Statement. This work has been undertaken in very close co-operation with our assessors, so as to reflect their collectively huge knowledge base in relation to both radiation protection and the assessment of RPAs.
- Completing a review of our operating procedures and associated documents to reflect:
  - the experience gained since the formation of RPA 2000;
  - any relevant implications of the revised HSE Statement; and
  - any revised HSE guidance for Assessing Bodies.

The resulting package is in the process of being submitted to the HSE Recognition Panel as the basis for the continued operation of RPA 2000 as an Assessing Body under IRR99.

The revised HSE Statement is dated 25 September 2006 but is not expected to come into practical effect on 1 April 2007. This means that RPA 2000's revisions must be in place before that time so that prospective applicants are given as much pre-warning as possible of the changes.

Transition period

Inevitably there will have to be a **transition period** to allow for an orderly introduction of the totally revised practical competencies as well as the rather less radical changes to the operating procedures. ***RPA 2000 application conditions during this transition period are***:

- until 31 March 2007, RPA 2000 will accept both initial applications and applications for renewal of RPA Certification in accordance with the current practical competencies, operating procedures and the current RPA 2000 Re-Certification Scheme (RCS); and
- with effect from 1 April 2007, RPA 2000 intends to only accept initial applications in accordance with the revised practical competencies and operating procedures that should be available from about 1 January 2007. The intention is to replace the current RCS with an essentially similar Renewal of Certification Scheme, hopefully within a similar time-scale.

These conditions are made subject to all revisions being completed by RPA 2000, agreed with HSE and published, ideally, by not later than 31 December 2006. If this timescale is not achieved there may be a need to modify the above application conditions.

Implications for initial applications for RPA Certification

Potential **new applicants** are advised to take the following into account in deciding when to submit an initial application for RPA Certification:

- The current list of Practical Competencies contains 9 Main Categories and a total of 27 sub-categories. It is likely that the revised practical competencies will contain less than the current 27 sub-categories. The intention is that the new practical competencies will be more easily understood than the existing ones.
- Consequently, anyone currently considering an application for RPA Certification might well see advantages in waiting until the new criteria are available – provided of course that such a wait is acceptable to them.
- The revised operating procedures are more a case of tightening up existing procedures on the basis of experience, rather than any radical changes.

Implications for applications for renewal of certification

Potential **applicants for renewal** of certification are not expected to see any great differences in the criteria to gain renewal. What changes are made are likely to be a rationalisation of the points scheme and possibly some simplification of the associated paperwork, based on experience gained to date. Consequently, we see no need for the timing of applications for renewal to be affected by the changes that should be made available from about 1 January 2007.

A P Hudson
Secretary to RPA 2000 14 November 2006

BREWERY PROSECUTED FOR LOSS OF Am-241 LEVEL GUAGE

On 6 October 2006 Aston Manor Brewery Company Limited of Thimblemill Lane, Aston, Birmingham pleaded guilty at Birmingham Magistrates court to two charges relating to failing to securely dispose of a radioactive substance.

The charges were brought by the Environment Agency under Section 32 of the Radioactive Substances Act 1993. The company was fined £ 10,000 and ordered to pay costs of £2,240.

For the Environment Agency Dermot Scully told the court that in December 2004 Aston Manor Brewery Limited contacted the Environment Agency to inform them that they no longer held any radioactive sources on site. The company stated that they would like to revoke their registration permitting them to keep and use two radioactive sources.

On 14 April 2005 Environment Agency officers visited the company and found that whilst one radioactive source was properly accounted for, the whereabouts of the other could not be determined. The missing Americium 241 source, used in a level gauge, had not been seen since 2001/2.

The disposal route of the radioactive substance is unconfirmed, however it is likely to have entered into the scrap chain as stainless steel. The substance could have been melted down for steel making, causing contamination of slags and resulting in possible releases of radioactivity to air and water.

SULG 27th Meeting 6th December 2006

Minutes of previous SULG meetings and EA Policy Update papers can be found at - www.environment-agency.gov.uk/radioactive - and follow links to SULG. The notes below cover the main items discussed at our last meeting.

Qualified Expert

A SNIFFER project is underway to define the competencies required of a Qualified Expert in relation to RSA. Core competencies, applicable to all users, are being developed by the regulators. Users themselves will be invited to take part in developing sector-specific competencies.

Invites from SNIFFER will be sent out in January to take part in stakeholder workshops, the non-nuclear workshops being on 26th March (Epsom), 27th March (Penrith) and 30th March (Edinburgh). SULG members and others will be invited, so make your contribution through Trevor Moseley or Richard Harrison (AURPO), Steve Evans (IPEM) or Peter Marsden (Thames region).

The final report will include proposed competencies. Implementation will not be considered until after the report is completed.

Discharge Strategy Review 2006-2030

The first strategy document in 2002 was based on the OSPAR strategy and was limited to aqueous discharges from nuclear sites. It made reference to substantial and progressive reductions in discharges and resultant public doses being close to zero (whatever that means). The 2006 review will include gaseous discharges and will incorporate non-nuclear discharges. This will give a more complete picture of overall discharges, and will monitor whether gaseous discharges have increased in order to achieve reduction in liquid discharges. The non-nuclear categories are medical, pharmaceutical, university & research, oil & gas, radiochemical manufacture and low level waste disposal (i.e. landfill and incinerators). The total non-nuclear aqueous discharge for 2005 was 54.7TBq, with the major contributors being from the radiochemical industry (76%) and medical uses (19%) – universities contributed only 1% of the total. Discharges from decommissioning will be recorded separately.

The current user consultation (you may have seen the questionnaire) runs to January, followed by 6 months of strategy development (with stakeholder workshops in April), a public consultation at the end of 2007 and publication in summer 2008. Forecasts for future discharges are proving difficult so DEFRA have been looking for 5 year annualised averages and percentage variations on current discharges. AURPO and IPEM are collating responses for universities and hospitals respectively.

DEFRA are also interested in regulatory impact - i.e. if you had to reduce discharges, could you do it, how would you do it, and how costly would it be?

Exemption Order Review

The Better Regulation incentive has re-awakened the EO review. The dust will be blown off previous work in this area, and fresh data and stakeholder involvement (31st Jan in Cardiff) will be poured in. The programme is set to run to 2008. There are no boundaries in this review - anything is possible and everything is being considered. Do we tweak the old or start from scratch? Are new EOs needed? If they are sector-specific (e.g. schools, hospitals) can those sectors contribute?

Could we live with just two EOs - an unconditional one and a conditional one with schedules of conditions? Should we converge with BSS and IAEA clearance/exemption levels? The expectation from DEFRA is that the outcome of the review will be to reduce the overall regulatory burden to users. If that is not achieved the review will be deemed a failure.

On an EO related matter, EA Policy Division are currently working on an EO guidance document which should give definitive advice on the areas where EOs and Hazardous Waste Regs appear to conflict. Look out for this in Spring 2007. Meanwhile, the EA guidance, which was recently given to CLEAPSS in the context of schools disposing of sources under the Sealed Source Disposal Programme, will be verified by the EA. This indicated that uranium and thorium could be sent to landfill in accordance with the EO. **NB** users should note that this guidance should not be taken out of context and was not intended to be a general guide to all sectors.

Contaminated Land

A new regulatory regime for contaminated land came into force in England in August (and came to Wales on 10th December). For guidance see http://www.environment-agency.gov.uk/subjects/landquality/113813/1442829/?version=1&lang=_e

A presentation was made by CIRIA on the Safegrounds Learning Network, which gives advice on contaminated land via their website (www.safegrounds.com). Their work to date has focussed on the nuclear industry, but in the current review of their main framework document "Land Management Guidance" (LMG) they are keen to hear from non-nuclear users. If there is felt to be a need for guidance from non-nuclear users we can go to their website and make a contribution. The current consultation period ends on 8th January.

Transport Regulations

The consultation on the Carriage of Dangerous Goods Regulations (CDG), which will incorporate the Road Transport Regs, has been extended to the beginning of January. Send your comments to dangerousgoods@dft.gsi.gov.uk . Even if you think the regs are too impenetrable to contemplate commenting on - write to DfT and tell them that. Guidance will come out with the regulations (probably July 2007).

This will have separate sections for different UN numbers - i.e. there will be guidance on transporting excepted packages, guidance on transporting Type A packages etc. The suggestion of cross-regulation guidance was warmly received by DfT, HSE and EA, and rejected with heart-rending eloquence.

There were two points of clarification on the existing road transport regs by Jim Stewart:

- A special form certificate has international acceptance, so a US form does not need validation by an ADR country (please see original ADR in German – problems with French translation)
- If a manufacturer extends a special form certificate, this does NOT extend the Recommended Working Life of the source. This has implications for transporting such sources as Type A.

National Dose Assessment Working Group

The National Dose Assessment Working Group (NDAWG) meets twice yearly and works on the methodology of dose assessment to the public and the environment from planned releases. The group is chaired by John Cooper from HPA-RPD (who also provide the secretariat) and currently has 28 members. Membership covers Government Departments and Agencies (e.g. EA, FSA, SEPA), industries discharging radioactive material (including non-nuclear industry), specialists and representatives from NGOs. There are sub groups currently working on: Short term releases, Habit data and critical groups and Communication. The work is wide ranging and papers are produced by the group which can be found on the website. See www.ndawg.org. The web site now has a 'non-nuclear' page. If you have any areas in the NHS/Small user sector which you think need to be addressed by the group, please contact

Mandy Moreton on amanda.moreton@gstt.nhs.uk. Also, please e-mail any links or information which you think would be useful on the non-nuclear page of the website.

EA Policy Matters

The EA are currently composing a Strategy for Radioactive Substances Regulations in line with the "Creating a Better Place" initiative. It seeks to influence the government to come up with solutions to radioactive waste disposal and minimise the regulatory burden on users. The risk-based approach to regulation is still being developed. The strategy will be issued by the end of 2006.

RSA charges for the next year will increase across the board by a mere 2.3%. Bargain!

SSDP - delays delivering to Windscale have been experienced, but the programme is largely progressing well, with 5259 sources removed as of November 2006.

Big Boys Things: all shares in NIREX have been transferred to the NDA. NDA are going to open the LLW repository to competition - expect a new contractor from April 2008. Meanwhile, the Government have backed the CORWM conclusion for a deep geological disposal facility in the UK.

Process Update

HASS - for goodness sake don't leave your application until September. Do it now.

As for financial provision, take-back and lease arrangements are proving popular. EA urge the use of non-financial equivalent measures where possible. EA are moving towards a streamlined process for applications concerning low risk sealed sources.

Application forms in general are being reviewed. Visions of an on-line version have been blurred by the need to ensure security of information. There are hopes that this might become a possibility by April 08.

LLW Policy Review

This is ready to be submitted to the relevant minister. If accepted it will go to Parliament in January. Essentially it says that you can do what you like with your LLW, provided you have a waste management plan that includes a risk-based options appraisal and has been approved by your environmental regulator. Easy.

On VLLW, there is to be a UK-wide adoption of two definitions of VLLW. The low volume definition (for us) will be in terms of activity per unit volume and will not be limited to beta/gamma. The high volume definition (aimed at nuclear decommissioning waste) will be in terms of activity per unit mass.

To help ensure future waste routes there are two developments:

- Waste Strategy 2007 will make explicit reference to radioactive waste. This will oblige Local Authorities to make provision for it in their plans; and
- The NDA will take responsibility for some aspects of non-nuclear sector waste and will have to provide facilities for its disposal. Sadly, SEPA still seem to be against allowing decay storage followed by reclassification of waste as VLLW or SoLA.

Other items

EA carry out a customer survey every year, so you may get a company calling you to ask questions about your RSA matters. In the past this has been carried out by a company called "Test Research", but it may not always be this company in the future. If in doubt, check with the EA to ensure the company is bona-fide.

Fawley's current owners are currently up before the EU Competition Commission. Existing authorisations should now have been updated to withstand any change in ownership which might result. There remains a concern that this might affect this waste route.

Dr Peter Marsden, UCL

DfT CONSULTATION ON CDG REGULATIONS

The Draft Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007 (CGD2007) were issued in September for public comment. The official consultation has now closed but DfT will still take comments up until the beginning of January. Only a limited number of comments have been received and very few detailed comments have been received on the radioactive side of things. (*latest update 18th Dec: 43 responses in total to CDG of which 16 were on RAM provisions*). I think most people were put off by the sheer complexity of the document and the incomprehensible way in which it has been written. There has been little improvement since some of us got to see the 5th draft and however much DfT try to put the blame on Europe, it is them who have decided to implement the ADR in this way and it is them who are responsible for writing the UK derogations. They can write a much more sensible document if they have the will and can be persuaded to do so. It is still not too late for you to make representations to them.

Some of us attended a meeting in Birmingham on 29th November where the DfT looked at the present arrangements for the transport of excepted and Type A packages and at the end touched on the proposed changes to the regulations. The Head of the Dangerous Goods Division held out an olive branch and accepted a lot of the criticisms that had been made of the draft regulations and offered another meeting to myself and GE Healthcare (to be held on Jan 17th) at which hopefully we will be presented with something more palatable. Being a bit cynical I am not too optimistic as I can just imagine them wheeling out one of their lawyers who will stonewall everything. At the end of the meeting I spoke to the Head of Regulation about the possibility of clarifying and simplifying the derogations and was shocked to hear that because of procedural arrangements for getting changes ratified in Europe, that it would not now be possible to change the derogations prior to the issue of the regulations next July. So much for our consultation then!

Clear unambiguous guidance is the best we can probably hope for and this will probably have to be industry driven. This will be fine as long as we can get the DfT seal of approval for what we write. From the discussions at Birmingham guidance is needed on what you can acceptably use for an excepted package and what, if any, documentation is required, over and above the consignment note declaration, to demonstrate that the goods have been suitably packaged. One DfT Compliance Officer seemed to be indicating that Certificates of Conformity and design specifications were required for all non-competent authority approved packages!

There was also some confusion over special form status and working life for sources with Jim Stewart indicating that it was not sufficient just to have a special form certificate renewed if the working life of the source had been exceeded. So some sources shipped as Type A may still need to be shipped as Type B unless a re-evaluation and risk assessment is undertaken, and perhaps the agreement of the manufacturer, to justify extending the working life. Well that was news to me. Later I asked Jim where this was written down – and it isn't, they are still working on it !

We were all given a folder full of handouts and a CD of proceedings together with additional resource material that you should be able to find on the web but some of us now have handy on CD. If anybody wants me to send them any info and they can take large attachments just get in touch. Here is a list of what we were given:-

- Transport regulatory material from IAEA
    - TS-G-1.1 Advisory material for the IAEA Regulations for the Safe Transport of Radioactive Material

- TS-G-1.2 Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material Safety Guide
- TS-R-1 Regulations for the Safe Transport of Radioactive Materials 2005

- NRPB –W66 Survey into the Radiological Impact of the Normal Transport of Radioactive Material in the UK by Road and Rail
- NRPB – UK Guide to Radiation Protection Programmes for the Transport of Radioactive Materials, 2002
- Guidance on Competent Authority Approval application
- Recent Commission Derogation documents
- Presentations and other handouts

NB Published safety standards and advisory material from IAEA can all be freely downloaded from - http://www-ns.iaea.org/standards/documents/default.asp?sub=200

T.J.Moseley RPA University of Sheffield

AURPO member after spending a day studying the dangerous goods transport regulations.

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EFFECTIVE RADIATION REGULATION THROUGH BETTER COMMUNICATION

A meeting, hosted by the Health & Safety Executive Field Operations Directorate Radiation Team [FOD RT], was held on Thursday 5 October 2006 at Rose Court.

The purpose of this meeting was to provide a forum for the discussion of operational ionising and non-ionising radiological protection issues and compliance with associated legislation.

The meeting was organised around an ‘open space’ format that enabled participants to create/develop the agenda and then manage their own parallel work sessions.

Some 20 plus sessions were proposed by the participants, convenors nominated, and some discussion summary reports produced by the HSE facilitators.

Session titles included:

- Local Rules/ACOP/Guidance
- Consistency and Cooperation between Regulators [HSE, MHRA, EA, DfT, CTSA etc]
- RPA accreditation
- Designation of Areas
- Reporting of MGTI's
- Dentists and RPA's
- Additional Guidance on IRR99
- Why is Worker Classification resisted in Medicine?
- When is an RPA required to be appointed under Reg 13 rather than consulted? Should RPA advice be restricted to IRR99 without reference to IRMER?
- Investigation levels for low risk situations when employees are not monitored.
- BPM and ALARP
- Effective dosimetry for internal exposures
- Dose investigations
- Why is action level for IRR99 with respect to Radon so high relative to other occupational levels
- Laser equipment in hospitals and HSE inspections
- Labelling of very low activity samples
- Clearer regulation by better guidance
- Coordination of response to Radiation Incidents
- Proportionate and Cost-Effective Regulation-[reducing the regulatory burden, improving compliance by inspection, what is meant by radiation regulation?]
- Provision of simple guidance for transporters of single sources
- What differentiates special procedures from routine laboratory procedures?
- How can we identify and assess new radiation hazards earlier?

The HSE has issued [on CD] summary notes for each of these topics-some are rather more detailed and active in their proposal of the way forward than others.

General feedback on the event collated by the HSE has been favourable, with many attendees commenting on the frankness and effectiveness of communication with regulators and other RPAs. Most attendees were quite satisfied that they were able to address most of the issues they wished to raise, given the limited time available. Suggestions for improvement of the event were solicited by the HSE: key points raised included improved timekeeping for the various sessions, the\presence of a HSE facilitator in each group and more notice regarding the scheduling and remit of the event. A suggestion was made that any future event should be held at a more geographically central location.

AS Muir, GSK Nov2006

HSE NEWS

The HSE have issued a revised statement on RPAs (see RPA2000 response on page 8).
http://www.hse.gov.uk/radiation/ionising/rpa/statementrpa.htm

The HSE organise the Ionising Radiation Health and Safety Forum (IRHSF). This body replaced IRAC (Ionising Radiations Advisory Committee). Information on the work of the forum and minutes of meetings (last met 22nd March 2006) can be found at –
http://www.hse.gov.uk/aboutus/meetings/irhsf/index.htm

Non-ionising radiation

EMF Directive
This EU Directive issued on 30th April 2004 has to be implemented by 30th April 2008. The HSE is therefore busy drawing up new regulations to cover this and we should see draft regulations out for consultation early in 2007 (see - www.hse.gov.uk/radiation/nonionising/electro.htm). The HSE has involved stakeholders in two working groups to help with implementation. MRI users are particularly concerned that inappropriate implementation could severely restrict interventional MRI - see report in March 2006 newsletter and see HPA information sheet on this topic - http://www.hpa.org.uk/radiation/understand/information_sheets/mri_ec_directive_2004_40_ec.htm

Physical Agents (Optical Radiation) Directive
The Optical Radiation Directive was published on April 26th 2006 (Ref L114) and has to be implemented by April 2010. It will only cover artificial optical radiation – so the sun is excluded – and its provision will only affect workers. Watch out for more information on HSE and HPA websites.

***SRP** are organising a meeting on 30th January 2007 to look at: the implementation of these directives into UK legislation; types of sources that are likely to be affected and how these can be measured. For more information see the meeting brochure at -*

Electromagnetic and Optical Radiation Safety - The EU Directives and what they mean to you

A working group, chaired by Mrs Bines, had been established to handle SRP (as UK IRPA Associate Society)'s input to IRPA Europe for revision of the Euratom BSS Directive (96/29/Euratom). Mr Philip Clewer is the SRP International Committee's representative on this group.

IRPA 12 Argentina, 2008

The next meeting of the scientific programme committee would be held in March 2007, and that the announcement and call for abstracts should be issued in May 2007 (with December 2007 deadline).

Preparations for the 12th International Congress to be held in Buenos Aires in October, 2008, received a big boost when the September meeting of the IAEA General Conference gave IRPA 12 its unanimous endorsement.

During the week of October 9, the Second Asian and Oceanic Congress on Radiological Protection (AOCRP-2) was conducted in Beijing. This highly successful Congress brought together over 400 participants from 35 countries.

The 54th meeting of the IRPA Executive Council was held in Beijing in conjunction with AOCRP-2. The meeting addressed several topics including preparations for IRPA 12, status of the Associate Society membership, IRPA finances, development of the IRPA web site, and training and education, to name a few.

More details about these items, as well as plans for the next two IRPA Regional Congresses - the All African IRPA Regional Radiation Protection Congress, April 23 - 27, 2007 <http://mambo.irpa.net:16080/index.php?option=com_extcalendar&Itemid=142&extmode=view&extid=9>

and the Regional Congress for Central and Eastern Europe, September 24 - 28, 2007 <http://mambo.irpa.net:16080/index.php?option=com_extcalendar&Itemid=142&extmode=view&extid=10>

can be found on the IRPA Web Site: http://www.irpa.net.

We have also added two new links on the Internet Resource Links page:-

http://www.irpa.net/index.php?option=com_bookmarks&Itemid=61&task=view&id=70
Ask the Experts - Radiation Safety Questions" provides a link to the Health Physics Society page that gives the user access to Health Physics Specialists who can provide answers to a wide variety of radiation protection questions.

http://www.irpa.net/index.php?option=com_bookmarks&Itemid=61&task=view&id=71
Radiological Protection of Patients" links to the new IAEA web page which offers Information to help health professionals achieve safer use of radiation in medicine for the benefit of patients.

IRPA 13 Glasgow 2012 bid

Our bid had been presented at Paris in May and again at Brussels in October– the latter endorsed Glasgow as the European bid.

NEWS FROM HPA- Radiation Protection Division

As usual they have been busy writing reports and producing articles to assist in raising awareness to the hazards from ionising and non-ionising radiations and their website is a tremendous resource for all in the radiation protection community. If you find that some of the links below don't work you can look up the documents yourself from the main web site at: http://www.hpa.org.uk/

Publications specifically about radiation can be found at:
http://www.hpa.org.uk/radiation/publications/index.htm

Electronic copies of most documents are now published in full but hard copies can be obtained from the information office: see -
http://www.hpa.org.uk/radiation/contact_us/other_contacts.htm

Since the last newsletter there has been a number of new publication in the HPA-RPD series and these are as follows:-

- **HPA-RPD-019**
  Guidance on the Assessment of Radiation Doses to Members of the Public due to the Operation of Nuclear Installations under Normal Conditions
- **HPA-RPD-018**
  HPA Solar Radiation Measurements in the UK during 2004 and 2005
- **HPA-RPD-017**
  Human Biokinetics of Plutonium: a Compilation of Experimental Data
- **HPA-RPD-016**
  Practical Implications of Neutron Survey Instrument Performance
- **HPA-RPD-015**
  The Health Protection Agency Radiation Protection Division Passive Survey Instrument
- **HPA-RPD-014**
  Review of Events Involving the Transport of Radioactive Materials in the UK, from 1958 to 2004, and their Radiological Consequences

Health Protection Matters

The Summer edition of this magazine is now available at:-
http://www.hpa.org.uk/publications/HPM/summer_2006.pdf

Interesting articles can be found on: radiation exposure and flying, going into quite a bit of detail on the various components of cosmic radiation; and on the legacy of Chernobyl 20 years on. This latter report concentrates mainly on the work of the NRPB in monitoring the fallout and its effects on the UK population.

The autumn edition is now available at:-
http://www.hpa.org.uk/publications/HPM/autumn_2006.pdf

Again there are a couple of items of specific interest. Firstly, there is an article on personal dosimetry that describes the Agency's plans to replace and upgrade its thermoluminescence dosimetry system and secondly, there is an article on a UV hazard that describes how a

normally safe disco ‘black light’ can be come extremely hazardous if the outer wood’s glass envelope gets broken and the inner bulb remains operable.

Radiation Courses

Radio Frequency Safety Awareness Training Course
Preparing you for the Physical Agents (EMF) Regulations

The Leeds section is running the above course on 1st February 2007. The course is designed to introduce health and safety professionals, and those working with or near RF sources, to the hazards associated with RF radiation, the relevant exposure guidelines and forthcoming UK legislation.

Further information and booking sheets are available at :-

www.hpa.org.uk/radiation/training/nir/emf/rf_safety_awareness.htm

Other Courses

We also offer a range of RPS courses (including RPS Refresher) and we can provide tailored courses on site. For more information please visit our web site :

http://www.hpa.org.uk/radiation/training/occupational

or contact us:

Chilton - 01235 822670 Leeds - 0113 267 9041 Glasgow - 0141 440 2201

AURPO Certificate of Professional Development in Radiation Protection

This course has been developed by the Scottish Centre for Occupational Safety and Health (SCOSH, University of Strathclyde) and the Association of University Radiation Protection Officers (AURPO) in collaboration with the Health and Safety Executive (HSE) and RPA 2000.

The aim of the course is to assist those people wishing to attain greater knowledge and understanding of radiation protection matters. The course is benchmarked against the HSE criteria for the 'Core of Knowledge' required for a Radiation Protection Adviser.

- ♦ 9 month programme commencing September 2007
- ♦ study by distance learning with online tutor support
- ♦ available to graduates currently working in radiation protection or related fields.

For further information and an application form:

Tel: 0141 548 4147 Email: **scosh@strath.ac.uk** Web: **www.cll.strath.ac.uk**

GE HEALTHCARE RECYCLING PROJECT SUCCESSFUL

GE Healthcare Ltd (formerly Amersham plc) based at Cardiff have announced that their major recycling initiative, *Project Paragon* has been successful in developing a process to recycle their main radioactive waste, Tritium. Some of you may remember Dr Andy Lashford of GE Healthcare giving a presentation to AURPO at the 2005 conference on this project involving tritium waste recovery and re-use.

The company, however say that *Project Paragon* has been less successful in developing a process for the recycling of liquid and gaseous carbon-14 wastes. They have concluded that the recycling of carbon-14 wastes is technically impractical due to difficulties in scaling-up the process from a small pilot plant. The company intend to continue storing radioactive liquid carbon-14 wastes, previously being accumulated as a feed stock for the recycling plant until another recycling process or an alternative off-site disposal route is developed.

Environment Agency Wales' South East Area Manager, Graham Hillier commented: ' We have been very pleased with the overall progress that GE Healthcare Ltd has made in continuing to reduce their radioactive waste discharges. This has resulted in year on year reductions in emissions which are now at an all time low. We do recognise that the recycling of carbon-14 is difficult and will be seeking an independent assessment of their conclusions.'

Following the outcome of the independent review, planned to be completed by the summer of 2007 the Agency will discuss what the next steps should be with any revised management strategy for liquid and gaseous carbon-14 wastes.

AFFILIATE NEWS - Safeguard

EnergySolutions LLC has purchased Safeguard International Solutions Ltd. EnergySolutions has its headquarters in Salt Lake City in the United States and is the USA's leading provider in the decontamination, decommissioning, treatment and disposal of radioactive waste, serving both the nuclear and non-nuclear markets. Safeguard International will have an important role in supporting EnergySolutions' expansion in the UK market.

Safeguard International has already been working with EnergySolutions companies to offer new recycling solutions to difficult forms of waste. We firmly believe that this change of ownership will enable us to provide our existing clients with even more options for recycling, managing or disposing of radioactive sources and waste.

We will continue to operate from our Harwell base and there have been no changes to our Team. As a company, we will continue to provide the same level of service quality and safety in all our operations and we look forward to working with you in the future.

If you would like further information, please don't hesitate to contact us on 0800 328 3790 or visit our website.

Lasermet Achieve UKAS Accreditation for Laser Testing

At the end of September the United Kingdom Accreditation Service (UKAS) awarded Lasermet accreditation for laser testing at its test facility in Bournemouth.

The accreditation process is extremely rigorous and took over 2 ½ years. The accreditation covers testing to the following standards-

EN / IEC 60825-1 EN / IEC 60825-12 EN / IEC 60601-2-22

While UKAS accreditation is not a legal requirement, most Test Houses and large companies will much prefer to use a UKAS accredited test facility, as the UKAS approval guarantees a high level of expertise, traceability and rigorous practice. Lasermet is the only testing laboratory to achieve UKAS accreditation for laser testing other than the National Physical Laboratories, in Teddington.

Whilst their experience and expertise was never in doubt, they have had to substantially upgrade their procedures and record keeping in order to satisfy the extremely high standards of traceability required by UKAS.

Laser safety specialists Lasermet have been testing and certifying laser and LED products to the laser safety standards (ie EN 60825-1 and associated standards) for over 12 years. This testing activity is just part of a wide range of services they can offer laser users, from training and Laser Protection Adviser work, to manufacture and sale of laser safety products. Paul Tozer, Managing Director of Lasermet said – 'We are expanding our range of products and services on all fronts. We see the current UKAS accreditation as a first step. In the future, we intend to expand the scope of the accreditation to include optical sources other than lasers and LEDs. We see this as a big growth area with the forthcoming implementation of the Physical Agents Directive, which covers all non-laser optical sources.'

Lasermet has recently recruited an extra test engineer / consultant, who is tasked specifically with developing a service product aimed at fulfilling the requirements of the Physical Agents Directive with regards to non-laser optical sources.

Press & Sales Enquiries: Paul Tozer

Tel 44 (0) 1202 770 740
Fax 44 (0) 1202 770 730
Email paul@lasermet.co

An Introduction to Radiation Protection 5th Edition by Martin & Harbison – Review

Introduction

An Introduction to Radiation Protection provides a concise and well-written account of the hazards of ionising radiation and ways in which protection can be achieved. It is now available as a 5th edition having last been revised back in 1996. By and large there have not been too many changes from the previous edition, a few words have been changed here and there and the presentation of the text has also been updated. The exception to this comes in chapters 13 and 14 that deal with medical applications and legislative requirements respectively. Both have been brought up to date to reflect advances in technology and the introduction of new legislation and EU directives. Chapters 16 and 17 have also been modified to take account of changing legislation.

Outline of Contents

The book follows a logical progression and begins with the first two chapters describing the basic physics required to understand radioactivity and radiation. This is followed, in chapter 3, by defining the units that are currently used in radiation protection and in chapters 4 and 5 that look at the biological effects of radiation and discuss how exposure occurs.

Once the basics are out of the way chapter 6 kicks off the issue of radiation protection and where better a place to start than with ICRP and in particular the recommendations of the ICRP as published in Publication 60. The next 3 chapters then proceed to deal with the fundamentals of radiation detection, measurement and hazard (internal and external). Chapter 7 discusses the general principles of detection before proceeding to look at each of the main categories of detection that include ionisation of a gas, solid-state detectors, photographic effect and activation effect. The chapter concludes by briefly considering the electrical component of a detection system. The external radiation hazard is then discussed in chapter 8 that begins by considering the effect of time, distance and shielding on exposure and then looks at the need for survey monitoring and personal monitoring. Chapter 9 then considers the internal hazard by considering routes of entry, control of the contamination hazard and issues of dosimetry.

Radiation hazards are further discussed in chapter 10 entitled “Nuclear reactor health physics”. The chapter begins by describing the fission process and the resultant products before looking at nuclear reactor systems and associated hazards. The chapter concludes with a look at the issues involved in decommissioning of nuclear facilities. The hazard of waste arising whenever radioactive materials are used is then considered in chapter 11, which discusses solid, gaseous and liquid waste and their consequences.

A chapter on x-rays and radiography is then followed in chapter 13 by looking at radiation protection in medicine. This chapter has been fully revised since the 4th edition in order to include new legislation and EU directives and to take into account technological developments including the emergence of digital technology.

The UK legislative position is then discussed in a revised chapter 14 that takes into account IRR99 and also considers the regulatory positions of France, Germany, Japan and the USA.

The final three chapters each cover an important aspect of Health Physics. Chapter 15 looks at health physics laboratory techniques for situations like determining the identification or energy of an unknown sample. Determination of half-life or sample activity is illustrated along with a discussion of counting statistics and, finally, a section on the calibration of radiation monitors. Chapter 16 concerns radiological emergencies and provides a number of

examples. Preplanning for emergencies is discussed and has been updated to include the 1996 Basic Safety Standards (BSS) directive and REPPIR. Chapter 17 concludes the book by outlining the organisation and administration of health physics services and has also been updated to include the 1996 BSS directive and IRR99.

Readership

The strengths of this book are its conciseness, readability and the fact that it is written from a UK perspective. This means that any person with an interest in radiation protection can pick up this book and gain a well rounded, but basic, picture of the field, from basic physics and biology right through to current UK legislation, in a short space of time. In fact, the first time I read this book was on a 4-hour train journey to an interview for a radiation protection technician post and it proved very helpful.

The intended readership is for "persons working in the nuclear power industry, radiographers, nuclear medicine technicians, medical physics technicians in training and in practice, health and safety executives and occupational health professionals working with any industry involving radiation", which sounds like the right level. However, the authors go on to say that the book is "essential reading for all those working in nuclear power, nuclear medicine, medical physics and radiography". Having spent a little time in a medical physics department I would have to disagree with this as it simply has insufficient depth to be anywhere near "essential" for all medical physics jobs.

And now, as somebody who has recently completed the AURPO certificate of core knowledge and aspires to the lofty heights of an RPA I am far more likely to reach for Cember's "Introduction to Health Physics" than I am for this book and from the point of view of actually studying for the certificate I would easily recommend Cember's book over this one.

Summary

In summary, therefore, it's a good book, highly readable, interesting and broadly speaking achieves its aims. It serves as a useful radiation protection primer ideal for Radiation Protection Supervisors and Radiation Protection Officers but perhaps not with the depth required for an RPA.

Dr PA Harris, University of Sheffield

SPECIAL OFFER FOR AURPO MEMBERS

Our thanks go to Paul for this thorough review. I bought the first edition of this book many years ago and got the 4th edition in 1996. It's packed with useful information and very handy and packs a lot into its 200 pages. I think a lot of members would find it useful. The publishers are prepared to offer us a good discount (min 25%) for a bulk order. I am prepared to co-ordinate this if people could give me an indication of how many copies they would like and I'll see what I can do. Ed

NEW PUBLICATIONS

J S Hughes, D Roberts and S J Watson
Review of Events Involving the Transport of Radioactive Materials in the UK, from 1958 to 2004, and their Radiological Consequences
HPA-RPD-014
http://www.hpa.org.uk/radiation/publications/hpa_rpd_reports/2006/hpa_rpd_014.htm

Health Protection Matters – Issue 5
http://www.hpa.org.uk/publications/HPM/HPM.htm
Features – Radiation exposure and flying
The legacy of Chernobyl, twenty years on

Medical Management Of Internally Radiocontaminated Patients
Carol S. Marcus et al
http://ladhs.org/ems/disaster/MMRSManual.pdf

A Personal Experience Reducing Radiation Exposures: Protecting Family in Kiev During the First Two Weeks after Chernobyl.
V A. Eremenko; J G. Droppo Jr
Health Physics, Vol. 91, No. 2, Supplement

Medical Exposure of the Population from Diagnostic Use of Ionising Radiation in Luxembourg between 1994 and 2002.
F.Shannoun, H Zeeb, C Back, and M Blettner
Health Physics, Vol. 91, No. 2, p154-162

The EPRI EDE Calculator – A Software Package for Assessing Effective Dose Equivalent from Hot Particles on the Skin.
X George Xu, H Su, and S Bushart
Health Physics, Vol. 91, No. 4, p373 – 378

Improving the Regulation and Management of Low Activity Radioactivity Wastes
DH Leroy, MT Ryan, JR Wiley
Health Physics, Vol. 91, No. 5, p439-448

-See rest of November issue for a series of other papers on managing radioactive waste and dealing with radioactive waste in scrap metal from NCRP meeting on 'Managing the Disposition of Low-Activity Radioactive Materials'.

Radiation Protection at an Aviation Museum
RJ Barish
Health Physics, Vol. 91, No. 5, Supplement, s74-77

50 Years of Health Physics on DVD

An archive of Health Physics from 1958 to 2005 is now available on DVD and was issued free to Health Physics Society members in September. HPS members can also access content online. Content can be searched by author, title and abstract.