

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

March 2007

**AURPO NEWSLETTER**

Editor T.J.Moseley

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## EDITOR'S INTRODUCTION

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Just a short edition this time as I get back up to speed after my month in New Zealand!

I know I said I might not publish a newsletter in March this year but there are so many things happening that have to be reported on. I have never known a more intense period for consultations and so much activity emanating from DEFRA. Perhaps the Governments Better Regulations Initiative is more than just spin!? Are we going to get more sensible and realistic exemption orders? Changes to CDG2007 that at one time did not seem possible are now being made.

Review bodies are inviting us to take part and we have the opportunity to make our voice heard. Let's make sure we participate in this process and then there is more chance of a favourable outcome. Look at the example of the LLW review. Our concerns re the definition of VLLW were heard and accepted and the old dustbin disposal definition was not only retained but enhanced. There is just one concern here though and that is that joined up Government still has a long way to go as the implications of transport regulations restrictions may make the relaxations in the VLLW volume definition impossible to use in practice.

Thanks go to Global Dosimetry Solutions this month for supporting us with an advert and to Perkin Elmer for their special product offers.

### Reminders:

1. Keep 4<sup>th</sup> and 5<sup>th</sup> of September free for Greenwich Meeting.
2. 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](mailto:g.a.zabierek@bham.ac.uk) ) who will get you started.
3. Affiliates – See affiliates section at end of newsletter and don't forget to make use of the Newsletter.

**Contributions for next issue by 15<sup>th</sup> June 2007 preferred format Word emailed to -**

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# Scientific Programme – AURPO Greenwich Sept 2007

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## FUTURE OF RADIATION IN UK EDUCATION & RESEARCH

Outline of expected presentations on the scientific meeting day (Sept 5<sup>th</sup>) are as follows. Details of expected speakers are currently being arranged. Full details will be in next newsletter.

1. Keynote presentation on Public Perception - Improving Awareness  
( speaker tba)
2. Pressure Group Perspective – ( speaker tba)
3. New nuclear build debate – skills required –  
(Nuclear Skills Group speaker)
4. Radiation in Schools – encouraging future interest  
(Institute of Physics speaker)
5. Historical Perspective on Radiation Protection  
(Robin Thomas)
6. Discharge Strategy Review  
(DEFRA speaker)
7. Future of the Exemption Orders  
( DEFRA speaker)
8. Decommissioning – Future Plans and Expertise Required  
(NDA speaker)
9. Training requirements for IRMER  
( speaker tba)
10. Effective Regulation – Developing the User-Regulator Interface  
(HSE speaker)

We also are looking to have another series of proffered papers on the Tuesday afternoon (4<sup>th</sup> Sept) and updates on the Transport Regulations and possibly HASS implementation if time is permitting.

## NEW POLICY FOR LOW LEVEL WASTE MANAGEMENT

On 26<sup>th</sup> March 2007 the Government issued a new policy document for the 'Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom'.

Two documents have been issued - a policy document and then a summary of comments on the consultation document together with Government responses. The latter proved very important in understanding the full meaning of the new policy.

LLW itself is defined as :

'radioactive waste having a radioactive content not exceeding 4 GBq/tonne of alpha or 12 GBq/tonne of beta/gamma activity.'

Within the UK VLLW is a sub-category of LLW that can contain both beta/gamma and alpha activity. To meet the requirements of both the nuclear and non-nuclear (small user) sectors there are now 2 definitions of VLLW one for low volumes of waste and one for high volumes of waste. The quantity limitation for low volumes of waste has still to be determined and is the subject of a SNIFFER research project.

People will no doubt be relieved to see the dustbin disposal limits retained and although on the face of it the numbers look familiar there have been some significant changes. The new 'low volume- dustbin disposal' definition of VLLW is as follows:

Radioactive waste that can be safely disposed of to an **unspecified** destination with municipal, commercial or industrial waste, each 0.1m<sup>3</sup> of waste containing less than 400kBq of total activity or single items containing less than 40kBq of total activity. For H-3 and C-14 wastes up to 4MBq in 0.1m<sup>3</sup> is permitted with a single item limit of 400kBq.

*Controls on disposal of this material, after removal from the premises where the wastes arose, are not necessary.*

On first reading I thought – there is something missing here – no exclusions, no restrictions on method of disposal? However, the Government Response document (11.2, p22) is very enlightening. They have drawn on a review of VLLW practices carried out by SNIFFER<sup>1</sup> and concluded the following:-

- 20uSv or less can be regarded as trivial,
- disposals of low-volume VLLW from non-nuclear industry remain acceptable,
- definition of VLLW (low volume) to remain largely as it is with the amendment that alpha emitters are included and that a ten-fold relaxation for H-3 and C-14 be allowed by regulators across the UK.

So in future VLLW can be disposed of to landfill or incineration or be subjected to sorting after it has left the user's premises prior to disposal. The inclusion of alpha emitters will facilitate the disposal of low-level reference sources, that could previously not be disposed of under the Testing Instruments EO, together with possible contaminated items from any leaking source. There could be major cost savings here for users. We may have to consider encasing the items (e.g. in concrete) prior to disposal to make them safe for handling, to cover

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<sup>1</sup> Galson Sciences Ltd 'Dose Implications of Very Low Level Radioactive Waste Disposal Draft Final Report', SNIFFER Project UKRSR09, Jan 2007

all eventualities, and guidance on best practice use of VLLW will need to be developed. As you have to have an authorisation under RSA93 to use the VLLW limits we will not have to worry about the Hazardous Waste Regs.

Before you get too excited though, the Transport Regs may throw a spanner in the works as the Policy Document states that the waste may be subject to transport regulations. As I see it this means that unless the waste leaving the premises is an exempt shipment under the Transport Regs it will need to be declared to the carrier and require a consignment certificate, this may then preclude the use of VLLW to an unspecified destination and mean that some carriers will not take the waste. There will be no problem with H-3, C-14, S-35, P-33 or I-125 but some other radionuclides particularly alpha emitters will cause difficulties. A quick search revealed the following limits on a consignment:-

➤ Am-241	10kBq
➤ Cf-252	10kBq
➤ Co-60	100kBq
➤ Cs-137	10kBq
➤ Ir-192	10kBq
➤ P-32	100kBq
➤ Po-210	10kBq
➤ Pu-238/239	10kBq
➤ Pu-240	1kBq
➤ Sr-90	10kBq
➤ Th-232	10kBq
➤ Tl-204	10kBq
➤ Dep-U	1kBq
➤ Nat U	1kBq
➤ Xe-133	10kBq

The treatment of VLLW by the Transport Regulations will therefore have a major impact on how the low volume definition can actually be used in practice and the relaxation for alpha emitters may not be what it at first seemed.

For further details and access to the full policy document see -  
<http://www.defra.gov.uk/environment/radioactivity/waste/index.htm>

**T.J.Moseley**  
**RPA University of Sheffield**  
**27/03/2007**

## **CARRIAGE OF DANGEROUS GOODS REGULATIONS 2007 – further developments**

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Following on from the 29<sup>th</sup> November meeting with DfT in Birmingham an additional meeting was held in London on 17<sup>th</sup> January when further representations were made to Dangerous Goods Division officials and lawyers. The outcome of this meeting has been additional amendments to the draft CDG2007 Regulations. Some of these with particular interest to members have been detailed below:-

- Efforts have been made to simplify some of the text and to start with all definitions referring directly to ADR/RID have been deleted.
- With regards to applicability of the regulations, Reg 11 has been clarified such that the regulations apply to all motor vehicles irrespective of the number of wheels.
- The orange plate derogation has been reworded so that it is in line with the previous one i.e. up to 10 Type A packages permitted and not 9 as in the previous draft.
- The fire extinguisher derogation has been extended to cover Type A packages so that now a small load of up to 10 packages (excepted or Type A) with a combined TI <3 can be carried without reference to the FX requirements. NB if carrying more than 10 excepted packages 1 x 2kg FX will be required and if more than 10 including Type A packages the 2 FXs will be required and the size of the FXs will depend on the size of the vehicle (see ADR 8.1.4)

Steve Whittingham (DfT) should be working on guidance for small users and I will be working with him on this.

Because of the amalgamation of the CDG Regulations with the old Transport Regulations there are some requirements of ADR that we previously had not been asked to comply with (they were overlooked) that we will now have to address. There will be additional training requirements for all those involved in transport operations i.e. over and above the existing driver training requirements. The miscellaneous equipment requirements (ADR 8.1.5) will have to be observed if shipping any number of Type A packages. These essentially require a vehicle to have an emergency kit comprising of : warning triangle, wheel chocks, hi-vis vests, and torches.

We may however be able to use another derogation that relates to local transport situations – ‘The Crossing of Public Roads’ – this states that if you are crossing between one part of a private premise and another part situated in the immediate vicinity of the first where both parts are occupied by the same concern, then in relation to Class 7 goods some of the requirements of the regulations need not be applied. I hope we can use this for local deliveries /waste collections within ‘University Precincts’. These very local operations would not need a DGSA, special packaging requirements, transport documents, placarding and marking, FXs and miscellaneous equipment or driver training (general staff training relating to CDG2007 would still be required).

Watch this space for further news. I hope to be able to issue revised guidance in the summer to coincide with the issue of the new regulations.

## DEFRA & EA NEWS

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DEFRA seem to be taking the lead on a number of issues at the moment and this is making a lot of demand on peoples time. Of particular concern to members will be the Exemption Order Review, the Waste Strategy Review, the consultation on Standardised Reporting of Radioactive Discharges and the SNIFFER review on Qualified Experts for RSA93.

### **Exemption Order Review**

A first workshop was held in Cardiff on 31/01/2007 to report on the feedback from Stakeholders on various approaches to the review of Exemption Orders. People were reassured that the previous work undertaken in 2002 would not be forgotten and it was also heartening to hear that all options were open – we could even start from scratch. Perhaps EOs could be replaced by a list of exempt activities, possibly linked to a dose of 1uSv/y for which there would be no conditions applied, together with a set of generic authorisations for low risk activities (potential dose <10uSv/y or perhaps <100uSv/y for NORM). For generic authorisations you would probably have to register use of them and pay a small licence fee but these would be much simpler and cheaper than a full authorisation. These were just a few of the ideas that were discussed. Other options were to update the existing EOs with modern easily understood language, but I think this would be missing an opportunity to be much more radical and produce something more future proof. Further consultations and workshops will be held later in the year as ideas are developed into proposals for stakeholder consideration. NB stakeholders not only include users and regulators but also interested pressure groups.

### **Waste Strategy Review**

You will have seen from the last newsletter that Dr Martin Hum (DEFRA) gave a presentation on this to the Small Users Group in December and that I badgered members for an input on projected future disposals. The next stage of this review is a stakeholder workshop meeting in Reading on 19<sup>th</sup> April that some of you may be attending. At this meeting we are likely to hear how it is intended that the strategy be extended to the non-nuclear sector. (NB I have already noted that in the Governments response to the LLW Policy review that 20uSv/y was considered trivial and I trust this opinion is carried through to this review.)

### **Standardised Reporting of Radioactive Discharges**

I was asked by DEFRA to respond to a consultation on standardised reporting and this was discussed at TCC on 22<sup>nd</sup> March. This is linked to Pollution Inventory (PI) reporting and also I think to the discharge strategy as DEFRA try and bring all reporting from nuclear and non-nuclear sectors into the same format. They are looking essentially at extending the reporting requirements for the nuclear sector as described in Euratom document 2004/2 to the non-nuclear sector. However this essentially requires monitoring of waste streams (which we do not do) or describes an acceptable method for recording estimates in activities/ unit volume. The new methodology may be beneficial to the nuclear industry in producing more realistic data where discharges are uncertain or below the limits of detection but for us it could lead to exaggerated interpretations of our maximum possible discharges. The reporting system also covers a list of radionuclides which are largely irrelevant to us and some of our key radionuclides are not listed. A suitable response has been made to DEFRA essentially that we can see little value in this additional reporting requirement.

### **SNIFFER Review on Qualified Experts**

Stakeholder meetings on this topic have just been held in Epsom, Edinburgh and Penrith. AURPO has been represented at these meetings by Penny Giorgio and Brian Heaton. A report on developments will be given in next issue.

## News from EA Process

Chris Englefield (Non-nuclear Process Manager) has sent the following information on changes to the Registration of low risk radioactive sources under RSA93 in England and Wales.

In its consultation on proposals for the 07/08 RSR Charging Scheme, the Environment Agency said it intended to introduce a new fixed condition registration process for lower risk sealed sources. The Agency will publish the details of this initiative at its Radioactive Substance Users web pages by 1 April. (See below). It will make available a new application form and the registration conditions together with guidance to applicants and to registration holders. The revised Charging Scheme will also be published.

The Agency is grateful for the help of members in shaping this work and hopes that it will represent a useful development in its regulatory approach.

See:

[www.environment-agency.gov.uk/business/444304/945840/](http://www.environment-agency.gov.uk/business/444304/945840/)

Chris Englefield, Environment Agency Radioactive Substances Regulation  
Richard Fairclough House, PO Box 12, Warrington, WA4 1HG

## IRPA NEWS

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Can I draw your attention to the IRPA website (<http://www.irpa.net/>) where they describe the new radiation warning symbol to be used on source housings for IAEA Cat 1,2 or 3 sources. Now of course as a sign it would not conform with the UK Safety Signs Regs and there were a number of disparaging comments on the mailbases about it that showed that the commentators had not taken the trouble to read IRPA's reasoning behind this symbol. The symbol is not for display on any door or on the outside of any equipment containing a dangerous source. It is only intended for an inner housing that would only become visible if someone was to start dismantling a piece of equipment containing a dangerous source. It was thought that the message the symbol conveyed could be understood by anyone and is really intended to avoid some of the unfortunate accidents and incidents that have occurred in third world countries in the past.



ISO Standard 21482: Ionizing-Radiation Warning –Supplementary symbol.

## ICRP NEWS

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At its meeting in Essen in Germany 19-21 March 2007 ICRP approved a new set of fundamental Recommendations on the protection of man and the environment against ionising radiations. These recommendations will replace the 1990 Recommendations published in ICRP60.

The new Recommendations will be published shortly in the Annals of the ICRP.



The Main Commission of ICRP in Essen. Left to right, Prof. Jaiki Lee, South Korea, Prof. Yasuhito Sasaki, Japan, Dr Hans Menzel (observer), Switzerland, Prof. Christian Streffer, Germany, Dr Nataliya Shandala, Russian Federation, Dr Julian Preston, USA, Dr Annie Sugier, France, Dr Abel González, Argentina, Prof. Jan Pentreath, UK, Dr Jack Valentin (Scientific Secretary), Sweden, Dr Lars-Erik Holm (Chairman), Sweden, Dr Claire Cousins, UK, Dr Roger Cox, UK.

Professor Ziqiang Pan, China, and Dr John Boice, USA, also participated in the decision to approve the Recommendations.

## ASSESSMENT OF NORM IN ENGLAND AND WALES

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Scientists, industry regulators and environmentalists involved in the monitoring and management of ionising radiation in wildlife and the environment now have access to the latest research into naturally-occurring radioactive materials in terrestrial and freshwater ecosystems in England and Wales.

The Environment Agency report, entitled 'Assessment of naturally-occurring radionuclides in England and Wales', reveals the levels of natural radionuclides in the environment to which plants and animals may be exposed, primarily the Uranium 238 and Thorium 232 series and Potassium 40. The report covers soils, stream and river sediments, saltmarsh, wild animals and plants and freshwater ecosystems.

"Many natural materials contain low levels of radionuclides. However, their impact on plants and animals had not been comprehensively assessed, before. The aim of the study was to establish the activity concentrations of these radionuclides, and to estimate background radiation levels in terrestrial and freshwater ecosystems," explained Environment Agency Principal Scientist David Coplestone.

"We first collated and reviewed available data from existing scientific literature and in-house collections, such as the annual Radioactivity in Food and the Environment report, and the Centre for Ecology and Hydrology's wildlife sample archive. We then identified gaps in the existing data and put together a field and archive sampling and analysis strategy to fill the gaps.

"Particular emphasis was placed on finding and collating data suitable for use by the International Commission on Radiation Protection, which suggested using standard adult stage animals and plants as reference points when assessing radiation effects."

Field surveys were carried out from December 2005 to February 2006. Samples collected included flying insects, predominantly moths, from each of the eight terrestrial Environmental Change Network sites in England and Wales, lodgepole pine, grey heron liver, earthworms, rabbits, pike, toads, mallards, trout and grass snakes. Some data for natural radionuclides in marine organisms were also obtained.

Estimates of radionuclides in soil, sediments and stream waters were derived using concentrations taken mainly from the British Geological Survey's on-going geochemical survey of the UK, and Imperial College's Wolfson Geochemical Atlas data. Additional data was collated by geological extrapolation using relationships between soil/sediments and bedrock/superficial geology.

"Not only will the datasets compiled be invaluable to UK scientists and regulators, but they will also be used in other collaborative research projects such as the European Commission's ERICA project looking at the environmental risk from ionising radiation and contaminants on wildlife and ecosystems," concluded Coplestone.

The full report is available from the Environment Agency publications catalogue on [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk) or via the National Customer Contact Centre on 08708 506506 (quote science report reference SC030283).

## NEWS FROM HPA- Radiation Protection Division

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Not so many reports published in the last few months - I think everything has been on hold whilst the Po-210 is being cleared up. 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](http://www.hpa.org.uk/radiation/contact_us/other_contacts.htm)

Since the last newsletter there have been no new publications in the HPA-RPD series.

### Health Protection Matters

The Spring edition of this magazine is now available at:-

<http://www.hpa.org.uk/publications/PublicationDisplay.asp?PublicationID=47>

The main item of interest is of course the Litvinenko Po-210 poisoning incident from last November and there are three articles on this; comment from Sir William Stewart (Chairman of HPA); details of the contamination incident and assessment of health consequences; and a day at the National Emergency Co-ordination Centre. Another article that may be of interest to readers is on medical ultrasound and its safety.

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## AURPO Certificate of Professional Development in Radiation Protection

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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](mailto:scosh@strath.ac.uk)

Web: [www.cll.strath.ac.uk](http://www.cll.strath.ac.uk)

## IAEA PUBLICATIONS NEWS

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### [Organization of a Radioisotope Based Molecular Biology Laboratory](#)

Molecular techniques applied to human health have been revolutionized by the polymerase chain reaction (PCR) during the past 15 years. The identification of prognostic markers of cancer, drug resistant profiles of micro-organisms, the development of diagnostic tests and genotyping systems and the follow-up after treatment of human diseases have been major tasks for biomedical laboratory workers. The use of radioisotopes in molecular techniques, as a step in the detection process or for increased sensitivity and specificity, is well established, making it ideally suitable for technology transfer. The technology has specific requirements in the way the laboratory is organized, in quality assurance and in radiation safety. The current publication provides guidance for the establishment of radioisotope based molecular biology laboratories and thus aims to increase the dissemination of these molecular advances.

[IAEA-TECDOC-1528, 2006, ISBN 92-0-114406-7, English. 15.00 Euro. Date of Issue: 20 Feb 2007.](#)

### [Safety of Radiation Generators and Sealed Radioactive Sources](#)

*Safety Standards Series No. RS-G-1.10*

The objective of this Safety Guide is to assist Member States to implement regulatory requirements for radiation sources that will ensure their safety. To that end, this publication provides guidance on infrastructure responsibilities for safety, on methodologies for performing safety assessments and on specific design and operational measures that should be taken to ensure safety throughout the life cycle of radiation generators and sealed radioactive sources. The safety measures recommended are also applicable to radioactive sources in nuclear facilities or radioactive waste disposal facilities, while recognizing that these facilities should in any case provide a high standard of source safety.

Contents: 1. Introduction; 2. Regulatory infrastructure and responsibilities; 3. Safety assessment; 4. Design, manufacture and use of radiation sources and facilities; 5. Decommissioning of facilities and management of disused sources.

[STI/PUB/1258, 59 pp.; 5 figures; 2006, ISBN 92-0-107506-5, English. 25.00 Euro. Issue: 21 Feb 2007.](#)

### [Assessing the Need for Radiation Protection Measures in Work Involving Minerals and Raw Materials](#)

*Safety Reports Series No. 49*

Any mining or minerals processing operation has the potential to increase the radiation dose received by individuals, due to the fact that all minerals and raw materials contain radionuclides of natural, terrestrial origin. However, only in a limited number of cases does the situation warrant the introduction of radiation protection measures. This Safety Report provides information on the relevant industrial activities, materials and expected exposure levels in order to assist in identifying the activities for which regulatory controls are most likely to be needed and, for such activities, determining the most appropriate regulatory approach. The report will be of interest to regulatory bodies and other national authorities involved in the application of the Standards to work activities involving enhanced exposure to natural sources, and to operators, workers and their representatives, and health and safety professionals engaged in such work activities.

[STI/PUB/1257, 56 pp.; 1 figures; 2006, ISBN 92-0-107406-9, English. 32.00 Euro. Date of Issue: 1 March 2007](#)

### [Nuclear Medicine Resources Manual](#)

This resources manual provides comprehensive guidance at an international level in many aspects of nuclear medicine practice, including education, training, facilities and equipment, quality systems, and radiopharmacy and clinical practice. The manual has been written with routine clinical practice in mind and therefore provides advice on many practical points that should help both new and also more developed nuclear medicine centres. The new centres will find specific information essential for setting up the provision of the service, and the more developed centres will find numerous updated protocols and suggestions on improving operational performance. The manual will be of interest to nuclear medicine physicians, radiologists, medical educationalists, diagnostic centre managers, medical physicists, medical technologists, radiopharmacists, specialist nurses, clinical scientists, laboratory scientists, and those engaged in high quality systems in public health.

[STI/PUB/1198, 532 pp.; 55 figures; 2006, ISBN 92-0-107504-9, English. 65.00 Euro. Date of Issue: 27 February 2006.](#) [Full Text](#), (File Size: 4116 KB).

For additional information, or to order the book\*, please contact:

[sales.publications@iaea.org](mailto:sales.publications@iaea.org) fax: +43 1 2600 29302 / tel.: +43 1 2600 22529 /

<http://www.iaea.org/books>

## **TRANSFER OF THE UNITED KINGDOM SAFEGUARDS OFFICE (UKSO) FROM THE DEPARTMENT OF TRADE AND INDUSTRY (DTI) TO THE HEALTH AND SAFETY EXECUTIVE (HSE)**

1. As of 1 April 2007, operational aspects of the work of the United Kingdom Safeguards Office (UKSO) at the Department of Trade and Industry (DTI) will be transferred to the Health and Safety Executive (HSE). HSE(UKSO) will then be the first point of contact on matters concerned with implementing safeguards in the UK. This includes:

- acting as UK government point of contact and source of advice for all holders of nuclear material on safeguards and Nuclear Materials Accountancy (NMA) issues and for all persons covered by the requirements of the UK Additional Protocol (AP). This will include working with Nuclear Decommissioning Authority (NDA) and other site owners on safeguards and NMA issues at their sites;

- monitoring provision to the European Commission by UK operators of safeguards reports as required by the Euratom Treaty (including Basic Technical Characteristics, Inventory Change Reports, Material Balance Reports, Physical Inventory Listings and Advance Notifications);

- ensuring notifications of safeguards inspections as provided to HSE (UKSO) are forwarded to the sites concerned;

- acting as UK government point of contact for the implementation of IAEA and Euratom safeguards within the UK, including leading the UK side in negotiations with the European Commission and the IAEA on facility specific safeguards approaches and any other safeguards-implementation-related issues in the UK;

- preparing and providing to the IAEA AP returns to the required format and timescales;

- leading on the implementation of any directives concerned with UK breaches of Euratom Safeguards;

- providing reporting direct to the IAEA as required by the UK/IAEA/Euratom Safeguards Agreement (INFCIRC/263) and the UK/IAEA Safeguards Agreement (INFCIRC/175) and the UK's commitments in respect of the monitoring of separated neptunium and americium;

- providing annual safeguards-related reporting as required by the Agreement of 25 February 1998 between the United Kingdom of Great Britain and Northern Ireland and the Government of Japan for Co-operation in the Peaceful Use of Nuclear Energy;

- providing twice-yearly safeguards-related reports as required by the Agreement of 24 July 1979 between the United Kingdom of Great Britain and Northern Ireland and the Government of Australia concerning Nuclear Transfers between the United Kingdom and Australia;

- overseeing withdrawals of nuclear material from safeguards, ensuring such withdrawals are consistent with UK commitments under the Strategic Defence Review (SDR), compiling and publishing an annual report on such withdrawals and responding to any queries from the European Commission or the IAEA;

- co-ordinating with OCNs and FCO to obtain clearance on behalf of the UK Government for safeguards inspector designation requests from the IAEA and the European Commission;

- chairing the Special Materials Accounts Committee (SMAC) in its role of collating and approving the information made public in the form of the annual Nuclear Materials Balance figures, and publishing the figures on the HSE (UKSO) website;

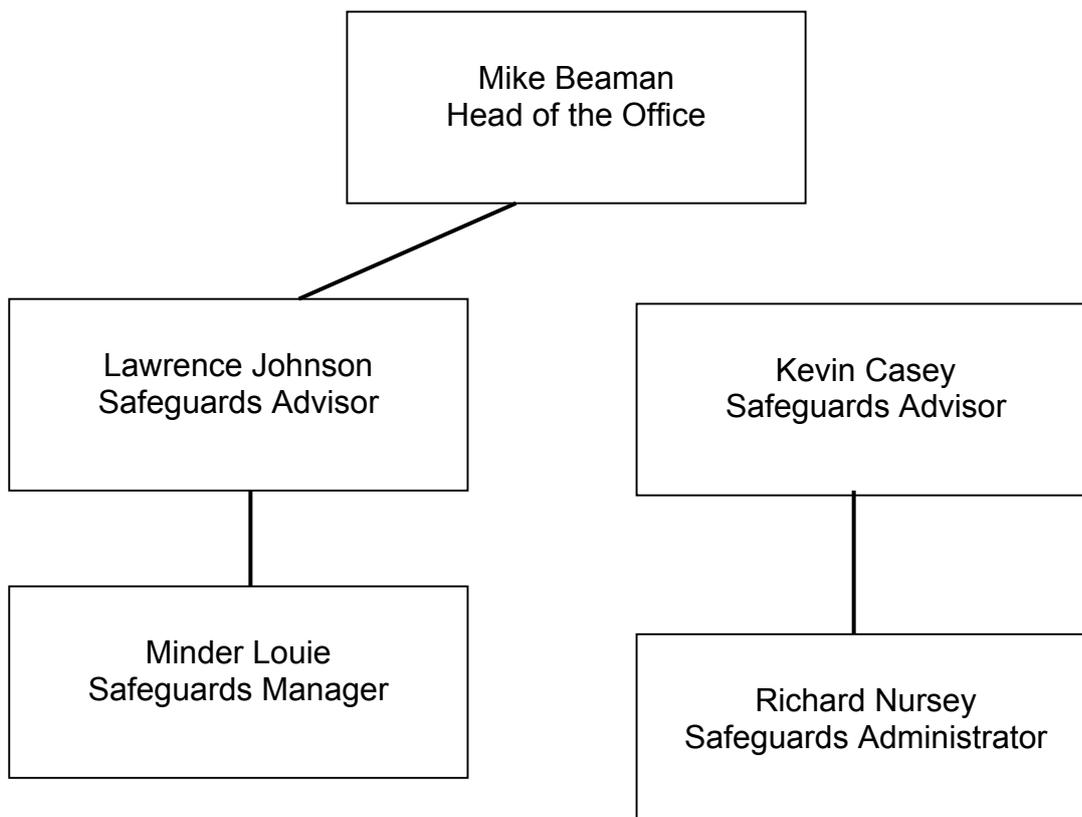
-reconciling operators' accountancy reports and European Commission records in compiling the annual publication of figures for inventories of civil plutonium and high enriched uranium, and working with DTI Safeguards officials to obtain DTI Ministerial approval for their release and publication on the HSE (UKSO) website.

2. All reporting required by Commission Regulation (Euratom) 302/2005 (e.g. Basic Technical Characteristics, Inventory Change Reports, Material Balance Reports, Physical Inventory Listings and Advance Notifications) should therefore be transmitted to the European Commission (Directorate for Transport and Energy, TREN) via HSE (UKSO) at:

7 <sup>th</sup> Floor	Tel: 020 7717 6000
Rose Court	fax: 020 7717 6363
2 Southwark Bridge	email: <a href="mailto:UKSO@hse.gsi.gov.uk">UKSO@hse.gsi.gov.uk</a>
London SE1 9HS	

3. HSE (UKSO) personnel and their general areas of responsibility are summarised below. But each of us will do our best to try to answer your question, or find someone who can.

4. Bill McCarthy and Neil Tuley will remain with the DTI, and have responsibility for policy issues arising from the operational safeguards activities described above, as well as other nuclear safeguards-related aspects of international and non-proliferation policy (e.g. including the UK Safeguards Support Programme to the IAEA). Contact details for Bill and Neil are unchanged (telephone/email 020 7215 4590 / [Bill.McCarthy@dti.gsi.gov.uk](mailto:Bill.McCarthy@dti.gsi.gov.uk) and 020 7215 8001 / [Neil.Tuley@dti.gsi.gov.uk](mailto:Neil.Tuley@dti.gsi.gov.uk) respectively) and they would be very happy to provide further details on the safeguards policy-related issues which will continue to be the direct responsibility of DTI.



**HSE (UK Safeguards Office), 1 April 2007**

Mike Beaman (email [mike.beaman@hse.gsi.gov.uk](mailto:mike.beaman@hse.gsi.gov.uk), telephone 020 7717 6521): Head of the Office, and first point of contact on safeguards implementation by the European Commission and the IAEA at Sellafield and Urenco Capenhurst.

Lawrence Johnson (email [lawrence.johnson@hse.gsi.gov.uk](mailto:lawrence.johnson@hse.gsi.gov.uk), telephone 020 7717 6753): first point of contact on reporting under the UK Additional Protocol to the UK/IAEA/Euratom Safeguards Agreement, safeguards implementation by the European Commission at reactors sites, Winfrith and Harwell, and figures for publication on holdings plutonium and high enriched uranium and on withdrawals of nuclear material from safeguards.

Kevin Casey (email [kevin.casey@hse.gsi.gov.uk](mailto:kevin.casey@hse.gsi.gov.uk), telephone 020 7717 6726): first point of contact on safeguards implementation by the European Commission at Dounreay and Springfields, safeguards-related reporting under the UK/Japan Agreement for Co-operation in the Peaceful Use of Nuclear Energy and the UK/Australia Agreement on Nuclear Transfers, and also reporting to the IAEA on separated neptunium and americium.

Minder Louie (email [minder.louie@hse.gsi.gov.uk](mailto:minder.louie@hse.gsi.gov.uk), telephone 020 7717 6817): first point of contact on safeguards implementation by the European Commission for small holders of nuclear material.

Richard Nursey (email [richard.nursey@hse.gsi.gov.uk](mailto:richard.nursey@hse.gsi.gov.uk), telephone 020 7717 6850): ensures the flow of safeguards reporting and notifications from HSE(UKSO) to the European Commission and the IAEA.

## **Sunbed Users Skin Cancer Risk - Doubles or Triples in Ten Years**

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Regular users of sunbeds now face an increased risk of developing skin cancer, according to Dr Harry Moseley of Ninewells Hospital and Medical School, Dundee.

Dr Moseley presented a paper to SRP on Tuesday 30th January 2007 at their meeting on the EU Optical Radiation Safety Directive. He presented results from a survey in two local authority areas in Scotland; Perth and Kinross and the City of Dundee.

The survey tested 133 sunbeds in 50 different premises, ranging from tanning studios, beauty salons, sports centres, hotel leisure complexes, through to hairdressers and video shops. 83% of the sunbeds had Ultra-Violet (UV) light outputs that exceeded the limit laid down in the British and European standard.

The results were compared with a previous survey in Perth and Kinross from 1997. The new data, he asserts, shows that the risk of developing skin cancer from sunbed use is now on average between 2 and 3 times that estimated in 1997.

Since that time, there has been a 30% rise in the number of unregulated privately-operated sunbeds. There are now more sunbeds with new high power lamps. Compared to 1997, the highest power sunbed found in the recent survey emitted more than twice the amount of the more harmful UV(B) radiation.

Dr Moseley found that many sunbeds were unsupervised coin-operated, with no limit on age or number of sessions. He is calling for the regulation of commercial sunbeds, coupled with much better public education in the potential risks of regular sunbed use.

## AFFILIATES NEWS

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### **News from Radman**

Members may be interested in a vacancy at our small firm, either for an experienced RPA or for a trainee who wishes to gain accreditation. (*from Robert Collins*)

Please see [www.radman.co.uk/rpa-jobs](http://www.radman.co.uk/rpa-jobs)

### **News from Ionactive Consulting**

Mark Ramsey has been very busy creating a slick website and a rival newsletter! Visit his website and sign up to receive his newsletter which should be topical and full of useful information. See for yourself at – [www.ionactive.co.uk](http://www.ionactive.co.uk)

### **News from NPL**

NMS Liquid Scintillation Users' Forum had its 5<sup>th</sup> meeting at NPL last November and minutes of this meeting with summaries of presentations can be found at – [www.ppl.co.uk/lusuf/minutes/28Nov06.html](http://www.ppl.co.uk/lusuf/minutes/28Nov06.html)

### **News from Perkin Elmer**

Please see below (p17) a special offer for AURPO members from Perkin Elmer. Steve Hastwell has promised to make more use of our publication in the future.

### **News from Global Dosimetry**

Last but not least Ron Dearden has been hard at work producing an article for me on their 'FAST System' for automated film scanning and transport (p18). He has also put an ad in detailing the service and product line up that Global Dosimetry can provide. I also note that Global are now part of Mirion Technologies.



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# Global Dosimetry Solutions Film Automated Scanning and Transport (FAST) System

Global Dosimetry Solutions (GDS), a division of Mirion Technologies, provides quality radiation monitoring solutions and services to an ever-changing global marketplace. We offer the broadest array of dosimetry products in the marketplace for measuring ionizing radiation and we are fully accredited through several well-known organizations such as HSE, NVLAP in the US, and Canada's CNSC.

At GDS, we are constantly looking for ways to enhance our processing capabilities. From our purpose-built facility, to adhering to Lean Manufacturing principles, the efficiencies achieved in badge processing enable us to provide our customers with precision reports in record time.

To that end we have developed and built the first Film Automated Scanning and Transport (FAST) System.

Since the discovery of ionizing radiation, it has been known that ionizing radiation causes the darkening of photographic films. Since the first half of the 20<sup>th</sup> century, film has been used to monitor personnel radiation dose.

Filters made of different materials allow different amounts of ionizing radiation to pass through to the film. By measuring the optical density (OD) of the film, the radiation can be characterized and the total radiation exposure quantified.

To measure the optical density at each filter location, a manual densitometer is used. This is a time consuming and labor-intensive process. Some companies have built what they call "automated" readers to read films. These readers typically require films to be glued together into long strips like movie films (a labor-intensive process in itself), and the

"automated" readers themselves are nothing more than manual densitometers in which the strips of film are read through.

The FAST System at GDS is a truly automated system for reading film. The FAST system accepts films without any additional preparation upstream of the reading process (i.e., without gluing films into long strips). Films are placed into cassettes and "picked up" by robots for scanning. Scanned images are analyzed by a proprietary software program.



The software automatically searches for lowest OD within each filter region for angular exposure.

The FAST system can read thousands of films per

day with improved accuracy and precision over the manual process.

What this means to GDS customers who use film in their radiation monitoring programs is their badges are processed rapidly, accurately, precisely and provides for enhanced diagnostic capabilities.

At the core of GDS, we believe in building relationships to meet the needs of our customers today and in the future. By providing advanced online capabilities, superior customer and technical support, you will find our commitment level to customer satisfaction is unparalleled in the industry.



**Global Dosimetry  
Solutions**

a division of Mirion Technologies

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# GLOBAL DOSIMETRY SOLUTIONS

## The Confident Choice In Radiation Monitoring Services



Rely on the experience and expertise of Global Dosimetry Solutions (GDS) to provide the right dosimeter monitoring products, reliable data collection and permanent compliance documentation.

GDS has been creating custom solutions to meet the needs of its customers for the past 30 years. At our core, we believe in building relationships to meet your account needs today and in the future. With advanced online account management capabilities, superior customer and technical support, you will have piece of mind that your radiation program is built upon the best practices.

GDS is fully accredited through the Health and Safety Executive (HSE), NVLAP in the United States and Canada's CNSC.

Global Dosimetry Solutions... your trusted partner in radiation monitoring services.

## Superior Service

### Customer Support

GDS customers are assigned dedicated customer support representatives. By assigning an individual to an account, our customers are confident in the knowledge the person they are dealing with is aware of their special requirements. Our support staff receives ongoing education to keep them up-to-date on monitoring services.

### Online Account Maintenance

As a customer of GDS you will have access to GDS-Online, our ever-expanding online account management solution. Every aspect of your account can be handled efficiently and accurately.

With GDS-Online you can:

- Manage individual wearers and badge assignments
- Reassign badges
- Transfer individuals between locations
- Generate various reports and review dose histories
- Edit and update account information
- View audit trails

### My Dose Record (MDR)

MDR is a secure, easy and convenient way for your employees to access their dose history online. With MDR, employees can view their dose history at any time, in real-time and print their dose history records. Whether one badge or several are worn, the history for each badge is listed separately. An email notification is sent when a new dose history is available.

### Expert Radiation Safety and Technical Assistance

Our Technical Group is staffed with highly qualified health physics and radiation dosimetry experts, and are available to our customers to provide assistance. With over 100 years of combined experience of our technical staff is on the cutting edge of radiation monitoring technology.

### Accurate Reporting and Solid Data Integrity

All processing and service is performed at GDS headquarters. Each report provides the information needed to meet government regulations, and confirms that proper steps are being taken to ensure that you are in compliance with regulatory requirements.

Exposure data is stored in archival data retention vaults and is accessible anytime.

# Array of Dosimetry Products

## Film

Film Dosimeters provide accurate personnel detection of radiation exposure from the use of diagnostic X-ray equipment. Badges are slim and lightweight and can be worn on the body or used for monitoring an area.

The film packet is sealed to shield the sensitive material from light-induced exposure. Radiation penetrates five different filter areas before reaching the film to simulate different tissue depths. Processed film is archived by GDS and is accessible anytime for reevaluation or to document the radiological safety of your office. Dosimeters using Kodak film offer a superior archival quality and have a developed exposure image.



## TLD

Global Dosimetry Solution's TLD dosimeters are based on state-of-the-art technology. These small, lightweight dosimeters offer long wear periods due to their resistance to environmental factors.

All processing is fully automated. Proprietary algorithms provide for exceptionally accurate dosimetry. Reports are computer generated with exposure histories automatically updated. Dosimeters come pre-loaded, eliminating the need for badge loading.

TLD's respond accurately to beta, gamma, X-ray and neutron radiations and allow for the reporting of deep, lens of eye and shallow doses.



## MeasuRing

Global Dosimetry Solution's Ring Dosimeters provide technicians with a convenient, attractive way to monitor radiation exposure to the hands and fingers. Rings are optimized for monitoring beta, X-ray or gamma radiation.

GDS rings can be worn under surgical gloves or in wet environments. With immersible single-piece construction, wear periods can range from 1 week to 1 quarter. Various sizes and colors are available to choose from.



## Measurements of Extreme Doses

The GDS High Dose Dosimeter reliably measures exposure for non-personnel working environments such as radiation therapy, research applications, equipment calibrations, or sterilization applications.

The High Dose is the perfect measurement device in environments where radiation dose levels exist between 2 and 50,000 rads. A reliable LiF TLD chip offers excellent response, and is energy and dose independent for most levels up to 1,000 rads. Above that level, GDS employs optical density filters, which reduce the excessive amount of light TLDs emit, so the PM tube does not become saturated and assessment accuracy is assured.



## CR39 Neutron

In facilities where employees work with neutron generators or Linear Accelerator Cyclotrons, the CR39 provides accurate exposure determinations. The CR39 may be used separately for neutron detection, or in conjunction with other dosimeters such as the GDS Film and TLD whole body dosimeters.

Exposure to neutrons cannot be detected by film and requires a specific calibration for TLD dosimeters. The GDS CR39 neutron dosimeter is energy independent and a practical and convenient way to accurately monitor exposure to intermediate and fast neutron radiation.



**Global Dosimetry**  
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