

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

December 2007

**AURPO NEWSLETTER**

Editor T.J.Moseley

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# Radiological Clean Up and Decommissioning

## Small user group support business



AMEC has many years experience of radiological decommissioning having completed a variety of clean up solutions for a range of customers and facilities across the UK. We help our customers by confirming the extent of the contamination, determining what options are most suited to deal with the problem, and then we deliver a decommissioning programme to clean up sites ready for reuse and or refurbishment. We not only utilise our own specialist teams across AMEC's Nuclear business, but also draw in expertise on other contaminants, for example asbestos and chemical.

Our dedicated in house experts include:

- Radiological Protection Advisors
- Radiological Protection Supervisors
- Decommissioning Engineers
- Decommissioning Operatives

Our services include:

- Radiological surveying/monitoring and land remediation
- Laboratory soft strip and decontamination
- Equipment and building decontamination
- Radiological Waste support, waste characterisation, segregation and consignment
- Design (any required temporary systems e.g. vent, tenting, MCS etc)

### Demonstrable Specialist Skills

In addition AMEC's dedicated "hands on" team specialise in:

- Waste materials analysis using our independent 'In-house' UKAS accredited laboratory analysis for active radiochemistry, environmental radiochemistry and chemistry samples.
- Offering practical and safe hands-on Radiological, Nuclear Decontamination, and Decommissioning capability anywhere in the UK or Europe.
- The provision of dedicated services to the small user groups, such as Universities and Hospitals. Small and large projects undertaken, with the same professional attitudes.
- Radiological protection with a 'RPA 2000' Accredited Corporate Body, with Accredited 'In-house' Radiological Protection Advisors (RPA's), Radiological Protection Supervisors (RPS's) and Health Physics Monitors (HPM's) available to support the customer during office or site based projects.
- Facilitation of discussions on behalf of customers with regulatory agencies to arrange authorisations to accumulate and dispose of their radioactive waste materials.

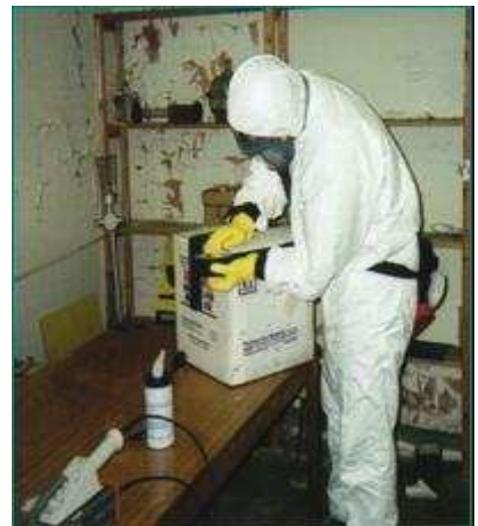


*To request further information, an appointment or for advice and assistance please contact:*

#### **Nuclear Clean Up Non-Licensed Decommissioning**

AMEC  
The Renaissance Centre,  
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## EDITOR'S INTRODUCTION

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This has turned out to be the Christmas edition as time just seems to fly by. I hope everybody has got their financial provisions organised for HASS, or has an understanding inspector, and is not too troubled by all the threatening letters that EA seem to take delight in sending out these days.

STC are working on updating guidance on: RSA93/BPM (and soon to be BAT!); updated guidance on monitor testing; updating training guidance; and updating the transport guidance. I had hoped to have the transport guidance completed by now but we are getting no feedback from DfT – we may end up proceeding without it. Plans are well advanced for Liverpool 2008 (see articles) and you will get a further update in the next newsletter.

For laser users you should note that the long awaited revised and consolidated BS EN 60825 has now been published on BSi Online.

Note that the EMF Directive that was due to be implemented next April has now been kicked into the long grass and will not reappear before 2012. Revised recommended limit values are to be expected in the next couple of years.

AMEC are supporting this newsletter with an advert on page 2 and affiliates were very supportive at the Greenwich Conference and I am pleased to see so many of them providing me with updates for inclusion in the 'Affiliates News' on pages 23-25.

### Reminders:

1. Plan ahead for 2<sup>nd</sup>-3<sup>rd</sup> September 2008 for the Liverpool Conference.
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 towards end of newsletter and don't forget to make use of the Newsletter.

**Contributions for next issue by 29<sup>th</sup> February 2008 preferred format Word emailed to -**

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## PRESIDENT'S REPORT

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I am sure you would all agree that once again we had another splendid conference in Greenwich in September. Who would believe that inside the beautiful building which was the former Naval College there was once a nuclear reactor named Jason! Our thanks to Sir Christopher Wren therefore for designing a building so well suited for whatever its' use by future generations. It will be hard to beat the magnificent venue of the Painted Hall in which we hosted our Conference Dinner as it was a night to remember for all who attended. My thanks go to Gillian Glazier for organising this for us.

My special thanks go to Richard Harrison, who not only takes charge of the Exhibition each year but also assists in the general organisation of the conference. Richard always works very hard to make sure that everything in the lecture theatre runs smoothly, down to the last minute detail and that the well being of all the exhibitors is taken care of. We had the highest numbers of exhibitors this year. Also, to Christine Edwards who once again produced our membership list on CD and also provided each member with a copy of the AURPO Handbook for Laboratory Workers on CD. Christine also made sure this year that at long last we had colour coded name badges.

I would like to convey my thanks to all of our members who attended the conference and also convey my appreciation to the group of members' partners who attended and contributed their support to the Conference. Thank you also to those members who 'volunteered' to do the valuable conference reports in this Newsletter.

This was the second year that we have included proffered papers presentations and I hope you will agree that each year the presentations are getting better. The scientific programme was again full of many interesting issues and I am certain that all delegates took home with them some useful information and knowledge.

The AGM was very well attended and the revised Constitution was well accepted. The main changes are that the former TCC will be now called the Scientific and Technical Committee - STC. The STC is now a permanent support committee to the Executive Committee with formal terms of reference, reporting to the EC on scientific and technical issues. The Chairman of the STC is a full member of the Executive Committee and will be elected at the AGM each year. The New Constitution provides a clearer definition of what the Association is about and how it operates. I hope this will help persuade some of you to come forward with offers of help in running the Association businesses – if the Association is to continue to be at the forefront of its field, this will require the assistance of all members in the running of Association business. Any ideas or kind offers of help in any way will be very much appreciated. Please remember, after all, the Association belongs to all of its members.

And so looking forward to 2008, Peter Cole is finalising the next conference in Liverpool to ensure that we have a comfortable and enjoyable stay. Our STC is also busily working on the final details of the Scientific Programme.

I am sure you always find the newsletter very useful and agree that 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**  
**12<sup>th</sup> November 2007**

# GREENWICH CONFERENCE REPORT

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## Tuesday 4<sup>th</sup> September PM

The conference began with two high standard, proffered papers from University of Surrey postgraduate students. Arthur Koteng, from Nairobi, who is on the Surrey MSc in Radiation &-Environmental Protection and is an IAEA Fellow working on NORM, titled his talk provocatively “Polonium-210 as Weapon for Mass Destruction”. He reviewed the physical properties and availability, the health effects and commented on aspects of security including some IAEA statistics on incidents involving nuclear materials. The talk elicited some interesting questions. One RPA polled the room to see how many delegate’s establishments had Po-210 sources – about a quarter of the audience admitted their establishments did. Peter Marsden (UCL) questioned whether the science showed that Po-210 was indeed a WMD. The speaker suggested that doctors should be trained to recognise the symptoms of radiation poisoning. One questioner felt that some of the effects on Alexander Litvinenko were possibly caused by chemical toxicity.

The second speaker was Nasser Alkhomashi, a Surrey PhD student. His talk was titled “Long-Term Assessment of Contaminated Articles from the Chernobyl Reactor Accident”. He began by reviewing the 1986 Chernobyl accident, including the design weaknesses and the “lack of co-ordination and awareness, resulting from an insufficient safety culture.” He reported studies of British students who had been in the Ukraine at the time. The NRPB had monitored them on return at Heathrow and had calculated thyroid c.e.d.e. doses of up to 18mSv. The Surrey University study had concentrated on analysing the students’ clothing which had been in storage for the past 20 years. HPGe spectral analysis and monitoring with Mini Type E and BP4 was performed. One sports sock still recorded 3440 Bq, mainly Cs-137. Interestingly Am-241 was detected in 2006 but had not been identified in 1986. Cs-134 was not detected in 2006. The talk drew out many questions on the methodology and the results.

The AURPO committee decided to award the prize for best proffered paper to Dr Alkhomashi – see below with Penny Giorgio (Univ of Surrey RPA) presenting the award on behalf of AURPO.



The interesting afternoon continued with Bob Major from NNC (ex-Amec) talking with affection for how the 17<sup>th</sup> Century Royal Naval College's Grade 1 listed buildings, a UN Heritage Site, had housed an operational 10kW potential, Argonaut series nuclear reactor between 1959 and 1986. Number 48 buses passed within 10yards displaying messages that Greenwich was a Nuclear-Free Zone. Bob showed in some detail how the reactor was decommissioned and dismantled. The public consultation meetings seemed to consider traffic problems more than any radiological ones (quite right too!). The reactor had never worked at a power level of more than 10W and the site is now a lecture theatre. It is arguable that with each person in a lecture containing about 80kBq, a well-filled lecture hall might contain more radioactivity than the former reactor!

The afternoon finished with Jim Stewart of the Dangerous Goods Division, Department of Transport talking about "Changes in Transport Regulations". He explained, inter alia, why the RamRoad Regulations we had come to cherish had transformed into the Carriage of Dangerous Goods 2007 (CDG2007). Transport is of course an international matter and our domestic regulatory structure is now more closely modelled on ADR and combines road and rail regulations. Trevor Moseley was able to point out some of the quirks of the new law, particularly as regards consignment certificates. Jim Stewart stated he welcomed input from small users into commenting on future changes. One important point is that all training of those involved in transport operations must now be documented and there is a new requirement for provision of miscellaneous equipment, including Hi-Vis jackets. We await Trevor's updated AURPO Guidance on this important subject.

**Reporter: Monty Guest, SRTS Ltd**

## **Wednesday September 5<sup>th</sup> Morning Session**

### **Keynote Presentation on Public Perception – Mick Clarke HPA**

The opening paper of the scientific programme on "The Future of Radiation in UK Education and Research" was given by Mike Clarke from the HPA Centre for Chemical and Environmental Hazards. He chose three examples of radiation risks, namely nuclear power, mobile phones and the polonium 210 incident to illustrate the public perception of radiation. In the first of these he explained how scientific evidence could easily be misrepresented. Michael Meacher MP stated on the BBC News that "there are cancer and leukaemia clusters round all our power stations", which was based on the COMARE Tenth Report 2005. However what this report actually showed was clusters near some nuclear installations in Southern England. These installations could not be associated with the release of any radiation so there was no more evidence that these clusters were related to radiation than to, for instance, a geographical link such as the Heathrow flight path. He pointed out that for the scientific community to have evidence of health effects they needed to see effects in humans and animals, biological effects and anecdotal evidence. The media however were far more influenced by anecdotal evidence (as I'm all too aware due to the recent high profile of IAH in the media!) and did not need to establish or prove a link.

The example of public concern over mobile phones and masts was used to show how the media can dominate peoples' perception of risk. People want to use their phones, but fear the proliferation of masts, regardless of the actual exposure to radiation involved. At present there are no proven adverse effects, but there is uncertainty in this area. Uncertainty allows mavericks to influence attitudes, as happened with MMR and autism, and scientists need to be open with their knowledge to help counteract misinformation. Mike suggested that the use of personal exposure meters may help to put things into perspective more.

The HPA was closely involved in dealing with the discovery that Alexander Litvinenko had been poisoned with Po-210, which obviously caused great concern amongst NHS staff and others that had been in contact with him. An HPA press conference emphasised that Po-210 was an internal hazard and later research by King's College found that the people involved wanted plenty of information to help them make their own minds up and they did not just want re-assurance. This research also looked at "ordinary" Londoners who had generally understood the risks associated with the incident and trusted the advice from scientists, which is reassuring for the scientists!

### **Pressure Group Perspective - Jean McSorley, Greenpeace**

The next talk came from the “other side”, not via a séance, but from a Senior Adviser to the Greenpeace Nuclear Campaign Jean McSorley. She laid out the case against building new nuclear power stations. This was not just based on concerns about radiation exposure, terrorism, weapons programmes and the disposal of radioactive waste, but included the cost of building the facilities and the risk that subsidising the nuclear industry diverted funding from other ways of supplying energy and may make people complacent about energy efficiency programmes. A question from the floor at the end of the session did point out that this last point could also be levelled at renewable energy sources, as windpower, which were also receiving a considerable level of subsidy. Jean concluded by running through the 2004 study on radioactive discharges to the Thames to assure us that Greenpeace’s concerns lay with the nuclear industry rather than the use of isotopes in research and medical activities.

### **New Nuclear Build Debate – the skills shortage – Jon Bellows, Dalton Nuclear Institute**

Jon Bellows raised another problem associated with investing in new nuclear installations- is there anyone left to help build them? The decline in the current UK nuclear energy programme has been paralleled by a reduction in research and education in this area. Not only is there no undergraduate course with significant nuclear content, but the research base has been vanishing from universities as well. A DTI study in 2002 estimated that 1000 physics/engineering graduates a year would be needed by, and had to be attracted to, the industry. In addition a 2007 review of Health Physics Resources found supply/demand to be in a delicate balance.

Building a new nuclear facility is mainly a civil engineering task, but there is a 3 year design and technology schedule that would need critical skills in areas such as core design and water chemistry. Fortunately this skills shortage has been recognised and there are several postgraduate and research programmes now receiving funding, which will hopefully go some way towards plugging the gap. Jon concluded by saying that R&D plays a crucial role as innovative research projects will help draw young people into the industry.

### **Radiation in Schools - Peter Campbell, Nuffield Curriculum Centre**

Peter Campbell took us a step back down the nuclear skills supply chain by considering the interest in science at schools. Physics and chemistry have shown a greater decline than any other subjects, particularly failing to attract girls, and the government has now laid out ambitious plans to increase the number of A-level students taking physics, chemistry and maths. Peter took us through the radiation topics taught at Key Stage 4 and the frankly baffling array of different science GCSEs offered by the examination boards. Some of the problems facing the teaching of science in schools are a lack of qualified teachers, cutbacks in practical science sessions and children deciding against continuing in science as young as 12 years old. Of course these points are linked because a good teacher will enthuse their students and non-specialist teachers of subjects such as physics need plenty of support to help them present their subject at its best. New methods of teaching and good teaching resources were being used to help overcome misconceptions about science and encourage students to stay in science.

### **Historical Perspective on radiation Protection – Robin Thomas**

The morning session finished with an enjoyable journey through the history of radiation and the development of protection measures. Early use of radiation caused some horrific injuries and loss of life before the hazards were more fully understood. Then of course the next major change in radiation protection came after the use of the nuclear bombs in Japan in 1945 and radiation dose limits and legislation has been steadily refined since then. Radiation was used in many quack remedies in the 1920s and just to show nothing really changes you can still pay money to sit in a “therapeutic” radon mine in Montana today.

**Reporter: Vivienne Spackman, IAH, Pirbright Laboratory**

## Wednesday September 5<sup>th</sup> Afternoon Session

We were welcomed back to an afternoon scientific session chaired by Libby Yates of the University of Cambridge.

Chris Englefield from the Environment Agency gave an update on the SNIFFER Research Project UKRSR 10 in the presentation '**Qualified Experts for RSA93**'.

The aim of this project is to formalise the core competences and suitability required to become certificated as a Qualified Expert. Chris discussed the reasoning behind this project and the methodology that has been used by SNIFFER.

The report of this project has recently been published, and if the regulators decide to pursue the recommendations a consultation exercise should begin in early 2008.

The **Future of Exemption Orders** was discussed by Allan Ashworth who has been working with DEFRA on their Exemption Order Review Programme.

This programme has been long overdue, however there have been reservations expressed about changes. Allan emphasised that there is a clear understanding that the use of Radioactive Material is essential in research, teaching and industry and that in future nothing is to be more restricted than it already is. The proposed changes to the architecture of Exemption Orders will be formalised in draft legislation that is due to come out in September 2008

John Roberts of the Immobilisation Science Laboratory based at the University of Sheffield discussed the issues surrounding the safe, accelerated clean-up of the UK's civil nuclear legacy in the presentation **Decommissioning - future plans & expertise required**.

There are 20 sites in the UK that are part of a programme to be decommissioned that will extend into the late 21<sup>st</sup> Century. The methodology of interim and long-term disposal of waste were outlined. The practicalities of the preferred method of geological disposal were discussed as well as the university courses available to provide expertise for the future.

After a tea-break Steve Ebdon-Jackson from the Health Protection Agency spoke about the **Training Requirements for IR(ME)R - The Ionising Radiation (Medical Exposure) Regulations**.

IR(ME)R identifies employer, referrer, practitioner and operator as duty holders. The responsibilities of these roles were discussed in terms of entitlement and training requirements, and how competency is established for individuals engaged in training programmes. It was also emphasised that training records for medical staff should document both theoretical and practical training.

The final session of the day was led by Gareth Thomas from the HSE on the subject **Effective Regulation - developing the User-Regulator interface**.

There are a number of changes to the HSE that are being implemented for 'Better Regulation'. This is in response to recommendations from both the Hampton Report and the Government Select Committee on PAD as well Government Financial Constraints. The Hampton vision is to reduce the administrative burdens on compliant businesses while maintaining/improving regulatory outcomes. Gareth outlined how changes are being made within the HSE Radiation Team and how this will affect their liaising with employers, provision of information and guidance, and Inspection and Enforcement. The implications on future legislation and practical compliance were also considered.

**Reporter: Clare Stace, Institute of Cancer Research**

*Many thanks to our reporters – Monty Guest, Vivienne Spackman and Clare Stace for producing the above reports.*

## **Greenwich Conference Postscript - from the organiser (*Gillian Glazier*)**

Most of the feedback I have had has been very positive. The scientific programme was good, the social events well received, the exhibition the biggest yet and the overall experience enjoyable. Unfortunately I only managed to listen to one speaker – I understand that this is not unusual for the organiser!

The setting of the Royal Naval College and Greenwich is something special and the weather was very kind to us as it can be pretty bleak on the river when it's grim. We even had added entertainment of being in the centre of a film set for *Young Victoria*!

The Events team of the University were very helpful and prompt with any troubleshooting and the catering staff magnificent. After a hiccup in the provision of the first breakfast, the food went from strength to strength. The bus service was welcome and efficiently run.

The Mystery Evening was great fun, everyone joined in with the spirit and the noise on my coach as we set off could have been mistaken for a group of excited children! The venue, Morris dancers, food & drink all went down well. The Conference Dinner in the Painted Hall was something else! It was well worth the expense and I am grateful to the Exec for deciding that the funding was available. The social programme rounded off with a trip on the river. Though not the most luxurious boat on the river, the crew looked after us well and transported us downstream to the Barrier and then up as far as Hammersmith, treating us to a running commentary as we passed through the centre of London. I know that other commitments prevent a lot of delegates from staying for the Field Trip, but those who chose not to come missed a treat.

There were problems as well. From my point of view the admin back up promised was not forthcoming and my Conference Secretary informed me at a late date that she wasn't available on the day and she has since disappeared from the scene. I did, however, get excellent help from Kim Wood who did what she could in the office beforehand and was absolutely brilliant during the Conference itself. I am aware, though, that the admin was not as efficient as it should have been. There were problems with the accommodation and, unfortunately, because I am now a one man band, the promised follow up has not yet happened.

My special thanks go to all the sponsors whose contributions allowed us to stage such a good Conference, but I couldn't have managed at all without the help and support of the Exec, particularly Richard, who did a magnificent job with the exhibitors, Christine who did the badges and Sonia who chivvied speakers and generally kept me on track. This wouldn't be complete without thanking my line manager, Stuart McNaughton, whose support was crucial, both as a friend when needed and in giving me the space to work.

### **Treasurer's Notes**

Just about all activities have been to do with the Greenwich Conference, but good news - Lombard has finally been sorted! The £20024.71 from that has been transferred to our Nat West Capital Reserve Account. - Many thanks go to Sonia for dealing with this marathon.

The post conference work is still going on. Non-payers and those who either misinterpreted the form or added it up wrong have been invoiced and the payments are still coming in.

I haven't yet produced a final balance sheet for the conference, but have set up an "Ins & Outs" worksheet which I am keeping the up to date which is showing a current surplus of £6328. There is an outstanding item of printing done by the University, so this will reduce. The final bill will be settled with the University shortly. **Gillian**

## Peter Cole and the Three Graces welcome you to Liverpool - Capital City of Culture 2008

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University of Liverpool is proud to host the Annual Conference of the Association of University Radiation Protection Officers in Capital of Culture Year 2008. Steeped in maritime history, Liverpool is home to two of the greatest teams in football history (Liverpool and Liverpool Reserves!!). Birthplace of the Beatles and home of comic legend Ken Dodd.

You will be accommodated in Halls of Residence set in picturesque grounds in close proximity to the famous Sefton Park and Penny Lane (“beneath the blue suburban skies”).



Peter Cole and his colleagues will be pulling out all the stops to make Liverpool 2008 an AURPO Conference to remember. Get the dates in your diary now 2<sup>nd</sup>-3<sup>rd</sup> September and if you are planning on bringing a partner give Peter advanced notice as hotel rooms will be at a premium and need early booking – if you could give him an indication now it would be a great help and save disappointment nearer the time.

Contact – [pcole@liverpool.ac.uk](mailto:pcole@liverpool.ac.uk)



# Association of University Radiation Protection Officers

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## Scientific Meeting Liverpool 2<sup>nd</sup> – 3<sup>rd</sup> Sept 2008 CALL FOR PAPERS

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This call is to scientists working in the life, earth and physical sciences (in particular, to M.Sc, Ph.D and post-doctoral students) to bring their ideas, research and scientific developments to the attention of the radiation community on the opening day of this annual conference. There are no restrictions on the subject area, although there should be some relevance to future developments in radiological protection and the future uses of ionising and non-ionising radiations.

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- Awards covering conference fees, travelling & subsistence will be available to successful candidates together with a prize of £250 awarded to the best student presentation.
  - Authors should submit their abstract, details of their status and the name of their institution by the 31<sup>st</sup> March 2008 at the latest. Send submissions to Penny Giorgio – [p.giorgio@surrey.ac.uk](mailto:p.giorgio@surrey.ac.uk)
  - The abstracts will be judged by the AURPO Scientific and Technical Committee, and selected speakers notified by the 30<sup>th</sup> April.
  - Although a full written paper will not be required, authors must make a handout covering the salient points of the presentation available to the organisers by 31<sup>st</sup> July.
- 

*AURPO facilitates work with sources of ionising and non-ionising radiations in Universities and research institutions through the provision of scientific support and advice on radiation protection matters. See [www.aurpo.org](http://www.aurpo.org)*

## Scientific Program – AURPO Liverpool Sept 2<sup>nd</sup>-3<sup>rd</sup> 2008

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### **Non-ionising radiation update and radiation emergency response**

Proceedings will start on the Tuesday afternoon when once again we are looking for proffered papers (*see flyer above*). Please try and encourage people to put something forward. After the proffered papers we hope to find time for some presentations on subjects requested by members. These will include :

- Appropriate security for radioactive materials – CTSA speaker
- Safeguards Regulations – nuclear fuel cycle research activities and use of uranium and thorium – Safeguards Office speaker

And if there is time we hope to give an update on the Exemption Order Review.

Expected presentations for the main scientific meeting day are as follows:

#### **Morning session on non-ionising radiations.**

- Keynote presentation on a review of ICNIRP activities
- Developments in laser standards
- UV hazard awareness, detection and measurement
- NMR safe exposure levels and risk assessments
- Detection and measurement of EMF/ELF

With the session summed up by Peter Cole of the University of Liverpool

#### **Afternoon session on emergency response to radiation incidents.**

- NAIR response
- RADSAFE response
- Fire Service response to radiation incidents
- Reports from fire incidents
- Emergency planning

We hope to have things firmed up by the time of the next newsletter when further information will be provided.

**T J Moseley**  
**Chairman of STC**

# HSE NEWS

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The HSE has altered its arrangements for making ALL notifications under IRR99. Employers should no longer be notifying their local HSE office but instead they should be using the HSE's new central notification point at East Grinstead:

[Notificationfor.IonisingRadiation@hse.gsi.gov.uk](mailto:Notificationfor.IonisingRadiation@hse.gsi.gov.uk)

(or by post to Phoenix House, 23-25 Cantelupe Road, East Grinstead, West Sussex, RH19 3BE)

## NEW NUCLEAR BUILD

Four companies have submitted a Safety, Security and Environment Report to the UK Nuclear Regulators for Generic Design Assessment (GDA). These are AECL, GE-Hitachi, EDF/Areva and Westinghouse.

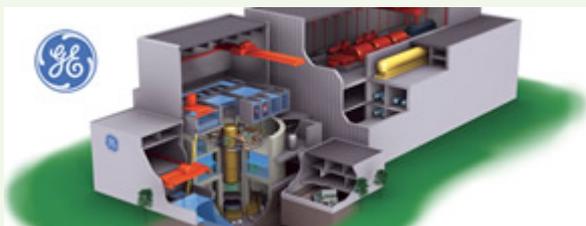
We are keen to ensure that the GDA process is carried out in an open and transparent manner, which will allow public involvement. The public have therefore been given access to the Safety, Security and Environmental Report (with the exception of parts which contain Sensitive Nuclear Information or Commercially Confidential Information) published by the companies. If you wish to view the Safety, Security and Environment Report for any of the designs being assessed by us, you can do so on the companies' websites by clicking on the relevant picture below.



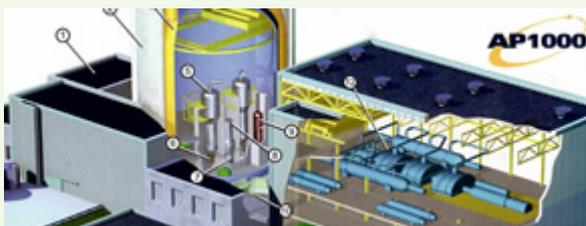
AECL - ACR-1000



EDF/Areva - UK EPR



GE-Hitachi - GE ESBWR



Westinghouse - AP1000

# SULG MEETING REPORT 27-11-2007

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## 1. HASS – Financial Provision

There was considerable discussion on the acceptance of Financial Provision and on the clarity and stability of EA guidance. Currently the greatest issue is with universities and research institutes. The EA are now advising that FRS12, an accounting provision which does not physically set aside funds for disposal, which has been accepted by some EA regulators, cannot be accepted any more. Those universities with a HASS registration with FRS12 provision are likely to have to find other means in the near future. EA approach can be flexible within the DEFRA guidance but they are constrained by advice from lawyers.

Small users were reminded of the large amount of money which was spent to fund the Surplus Source Disposal Programme and EA are determined not to allow a legacy to build up again. *(Ed – the EA are missing the point here, people took advantage of SSDP to get rid of large sources at the end of their useful life that they would normally have fully funded themselves, in my experience most of the ‘legacy’ was bits and pieces that were not HASS that had built up over a period of years. HASS provisioning will do nothing to deal with the likelihood of this legacy building up again.)*

Some universities have used third party guarantees from banks, but there has been a wide range of charges quoted for this. Concerns were expressed that the need for a bank guarantee in this context might force universities and hospitals to use similar provision in other non-environmental financial arrangements, resulting in escalating costs.

On the subject of third party guarantees, the EA guidance is about to change, making the EA the beneficiary not the disposal contractor. The AURPO representative will be approaching the Higher Education Funding Council for England (HEFCE) to explore the possibility of arranging collective financial provision for universities.

Some research institutes have tried to use their funding charity as the third party guarantor. EA thought that this may be acceptable provided the institute can demonstrate the charity is a totally separate entity.

New HASS guidance has been issued to EA regulators and will appear on their website imminently.

## 2. HASS – Reporting

EA have indicated that they hope to be able to offer flexibility in annual HASS reporting – to be on a fixed date OR on a specified date, such as the anniversary of acquisition of the source.

## 3. HASS – Sources of a Similar Potential Hazard

A letter has been sent out in some EA regions to holders of category 1-4 sealed sources, which are not HASS, reminding them that they have duties regarding security of sources of a “similar potential hazard”. The letter refers to the need to make an application for a revised registration. EA reported that this could not have been dealt with as a variation letter (cf BPM conditions) as the additional security arrangements needed to be inspected and revised charges would be required for Band 4s registrations. There was some discussion regarding the meaning of the phrase “source of a similar potential hazard”. Small users should be aware that the security threat regarding radioactive sources is real and that the hazard referred to in this context is of disruption to society rather than purely radiological hazard. *(ED – this is EA logic. Using the same logic why don’t unsealed sources have similar security provisions? They have effectively stretched the EU regulations on HASS much further than was originally intended. The increased security provisions are inspected by the CTSA not the EA and most people will have already introduced them. There is no justification for the EA asking people to apply for a new registration for non-HASS with all the additional costs that this will entail.)*

## 4. LASS

Holders of only cat 5 sources have the flexibility to hold any number of sources provided the combined A/D does not take them out of cat 5. Small users requested that the same flexibility be

applied to the cat 5 sources held by users who also happened to have cat 1-4 sources. The EA intend to roll out these conditions to other permits when a suitable opportunity presents.

### **5. UK Radioactive Discharges Strategy**

First drafts of the revised strategy have been produced. The Industry Liaison Group will have a further opportunity to comment before being submitted to the project board for approval early 2008. Public consultation is expected to start in May 2008 with final publication in January 2009.

### **6. LLW and VLLW Disposal Strategy**

EA and SEPA are contributing to the DEFRA programme to develop a strategy for the disposal of LLW (including VLLW) from the non-nuclear industry sector. Current arrangements for disposal via landfill and incineration are expected to continue but the aim is to feed disposal requirements into local planning policies/provisions with the intention of stemming the decline in disposal options for small users.

The first phase of the project is to collate data on waste. To that end, most small users in possession of an RSA 3 authorisation will be contacted by WS Atkins (on behalf of DEFRA) to provide information on solid waste arisings (*see letter from Atkins at end of SULG report*).

Meanwhile the EA/SEPA affair progresses with a combined look at the regulatory impact of the new LLW policy. This will ultimately lead to changes in authorisations and guidance. A draft implementation plan will be shared with SULG "in the fourth quarter of 2008/9" (sic).

### **7. 2008-2009 Source Disposal Routes**

At present the routes available for sealed source disposal are long term storage (the miscellaneous beta/gamma store B13 at Sellafield or Harwell B462) or recycling via Gamma Services, Reviss and others. Of the stores, B13 is ageing and has reliability/safety issues which have necessitated a shut-down until October 2009 for refurbishment. This route is therefore temporarily unavailable and has the added difficulty of trapping some transport containers in B13 for the moment, which may hamper disposals via other routes. The safety case for B462 limits what can be taken to 4.6GBq Am-241, 15MBq Co-60, 60MBq Cs-137 and no radium (limits based on surface dose rates). Discussion regarding acceptance of higher activities with shielding to limit surface dose rates are ongoing. The Harwell site is part of an NDA decommissioning/cleanup programme and there is therefore a reluctance to build up a legacy. These limits are very much less than the thresholds for the recycling options and therefore there is a potential problem disposing of sources above the B462 limit but below the recycling threshold. This will continue at least until B13 is sorted. The EA and NDA have reached agreement to keep B462 available until June 2008 as a contingency and will have to review this if the facility is still needed beyond that time. The EA are therefore asking small users to predict their sealed source disposal needs over the next two years so that the EA and NDA can develop contingencies to cope with those needs. The EA will shortly provide a guide to the range of sources/activities they want to know about, following which there will be a survey of small users. Please respond to this, as it is in our interests to ensure that disposal contingencies are in place. Communication is likely to be via professional bodies, so if you are lucky enough to belong to more than one, make sure you only reply once. The small user reps have already expressed concern that holders may not be able to comply with the 12 week limit defined in the Waste Closed Sources EO if there is no route available, and the EA recognise that they will have to take this into account.

### **8. Charges for Controlled Burial**

In the future the EA will authorise landfill operators for Controlled Burial and will charge those operators on the basis of time and materials. This is likely to escalate the costs, which the landfill operators will pass on in charges to the users. For sites receiving wastes from nuclear decommissioning, the costs are likely to be high but will mostly be borne by the nuclear industry. If small users have controlled burial on their authorisations, be comforted that the EA will not be charging extra for this, but expect to have to pay the landfill operator more for the privilege.

### **9. Qualified Experts**

For those of you not already aware, the SNIFFER report on Qualified Experts under RSA93 is available from [www.sniffer.org.uk](http://www.sniffer.org.uk). The report details a set of core competencies which are proposed for QEs and discusses implementation options. It was originally intended to develop sector-specific

competencies but it has been decided that this is a matter of “suitability”, ie mirroring the IRR99 approach to RPAs. The approach to certification of QEs is similar to that currently in operation for RPAs, and whilst there is considerable overlap in competencies, there are some key differences. One difference in implementation is that, once the regulators define the minimum competency set, the certification scheme will be “owned” by the professional bodies, who will be at liberty to set higher standards if they so wish. The environment agencies in the UK expect their regulators to be QEs, but will be certificated through their own scheme, not the one owned by the professions. Shame.

The agencies are now producing a consultation document based on the SNIFFER report and, assuming they get corporate support from their govt departments, will go to consultation “early” in 2008. Full implementation will not be before April 2010. Grandfather rights will apply. Questions were raised regarding the QE equivalent of an RPA body or corporate RPA. This is one outstanding issue which has yet to be resolved.

### **10. Authorised Discharges – the future**

2008 will see the publication of 3 documents which are currently working drafts. The UK National Discharges Strategy (see item 5 above) sets out the Government’s vision. In March, consultation will appear on the Statutory Guidance to the EA which is the Government’s instruction to the EA on how to implement strategy. In February there will be consultation on Radioactive Substances Environmental Principles, describing how the EA processes an application and detailing what needs to be taken into account. The latter two are EA specific and apply only to England and Wales.

The Statutory Guidance to the EA has only ever applied to the nuclear industry, but no-one knows why. There is therefore a possibility that it will be revised to cover all authorized premises. It is expected that this would have minimal impact on the non-nuclear industry sectors. If it were to be applied, one of the minimal impacts it would have would be the removal of BPM requirements from our authorisations. This is because BPM is being replaced by BAT (best available techniques) – different name but essentially BPM compliance will equate to BAT compliance. It would mean that we would have a threshold for optimisation. Atkins will be looking at the impact of introducing these documents.

### **11. Exemption Order Review**

The current status is that a proposal is going forward which offers six options for a new exemptions regime architecture plus a methodology for selecting the preferred option. If the programme board approves this the options assessment will take place in January 2008.

The assessment team will comprise approximately 15 Govt/regulators, 10 representatives from the nuclear industry and 15 representatives from the non-nuclear sectors. If all can agree a best option a consultation paper will be prepared. Some options may be removed if the Environmental Permitting Programme incorporates radioactive substances regulations, as has been suggested before.

The regulators are keen to move to radionuclide-specific quantities/levels in future EOs, NDA and Nexia Solutions are looking at the consequences of replacing SoLA with IAEA or EU clearance levels. Also there is another working group looking at whether Schedule 1 of RSA93 is fit for purpose as there may be a mechanism available for having it revised. The EA are looking at changes afoot in the research/medical fields to see if future developments might impact on the proposed changes. Support from the relevant professional bodies is sought.

### **12. Miscellaneous**

- The **contaminated land regulations** came in April 2006. A revision appears on 10/12/07 to take into account contamination of land arising from activities carried out on nuclear licensed sites. The regs don’t apply to nuclear licensed sites themselves (Nuclear Installations Act applies) or to land where REPPIR applies.
- SEPA are currently looking into the **dustbin disposal report** but it should be on the SNIFFER website in a few weeks.
- Should you find yourself in receipt of a radioactive source which was beneath regulatory control in the country of origin but is subject to our glorious RSA93, the EA will be happy to hear from you and negotiate informally with the regulators in the shipping country.

- The DfT website will have a questionnaire available in December to allow you to give feedback on the **Carriage of Dangerous Goods Regulations**. The CDG Regs get reviewed every 2 years so this is your chance to contribute. DfT are still aiming to produce guidance specific to transport of radioactive materials.
- **Smoke detectors** disposals via Exemption Order could be in conflict with the WEEE regulations. EA would prefer to see smoke detectors returned to suppliers for disposal but also want the EO route to remain. Note that ACB will take smoke detectors. The EA is working with the Fire Industries Association to sort out a way forward that meets EO and WEEE requirements. The WEEE Directive is to be reviewed, and the EA may ask for the position of smoke detectors to be reconsidered.
- EA and DEFRA are developing a National Response Plan for dealing with **orphan sources** (to comply with Article 9 of HASS Directive). DEFRA will consult later in the project.
- **SULG dates for 2008: 11<sup>th</sup> June and 2<sup>nd</sup> December.**

**Reported by Peter Marsden (UCL) for the Thames Group.**

### **Open Info to AURPO members from WS Atkins**

WS Atkins are involved in the data collection for DEFRA for the LLW strategy. The following brief from Atkins may be useful to any of us who may be approached by WS Atkins regarding this issue.

'In the light of the 2007 policy statement on LLW management, DEFRA and the devolved administrations have embarked on a number of implementation actions. One such action is to develop a strategy for the long-term management of LLW (including VLLW) in the non-nuclear sector. In order to inform this strategy development, a data collection exercise throughout the non-nuclear sector has been commissioned with Atkins, and Allan Ashworth is the Atkins project manager responsible to Defra's programme board. The client (Defra) representative for the work is Katherine Mondon, whose main responsibility is to manage the Defra/DA programme board for the programme. The environmental regulators (EA and SEPA) have seats on the programme board. Subject to programme board approval, data collection will be, so far as possible, by way of electronic information exchange, with the establishment of a dedicated website for access by authorised parties.

The Environment Agency and SEPA are helping with this work via the delivery of some information but, more importantly, advice on certain aspects. The Environment Agency and SEPA officers at the field level may be contacted for help in identifying major LLW producers from the IPCIS and other records where this information is not apparent from the records themselves.'

A final note to avoid any confusion. The LLW policy statement defines VLLW as a sub-set of LLW. The current data collection project therefore concerns LLW and VLLW.

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## **SAFEGUARDS REGULATIONS SEMINAR –22<sup>nd</sup> November, London**

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John Makepeace and myself attended a HSE workshop seminar on the derogation process and electronic reporting relating to those registered under Euratom 302/2005 as being holders and users of nuclear material (depleted uranium and uranium and thorium compounds for us).

I got caught up in this process when we needed to replenish our stocks of uranium oxide for our waste immobilisation research. Unfortunately the only person who could supply me with a reasonable amount were themselves registered with Euratom and therefore had to report their transfer to the University of Sheffield and so we too had to register.

Fortunately the rules are getting a little more relaxed and if you hold less than 1kg of U-235 equivalent you can apply for a derogation. We were fortunately in that position and holding a derogation you only need to report annually on any changes in your stockholdings. To make things even easier you can now do this reporting electronically. The EU documentation made this look incredibly complicated as it went through the xml software, so it was a relief to find that they actually provide you with a free little database in which you can record your inventory updates. Minder Louie of the Safeguards Office took us through the process of making our annual returns. It turned out that you did not have to make entries in all the fields, that some would be automatically generated, that you could include quite a few items in a 'batch' and that you were allowed to record 'GA' – 'accidental gains' – might need a few of those!

So we are now looking forward to our first stab at electronic reporting with less trepidation than before and the staff at the Safeguards Office seem very helpful and are there to help us through this process.

**Trevor Moseley, University of Sheffield**

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## **Transport of Radioactive Materials Birmingham, England, 1 November 2007**

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Held at the Birmingham & Midlands Institute, this seminar and workshop was organised by The Society for Radiological Protection and was attended by 135 participants from a wide range of stakeholder sectors. The aim was to review the recent and forthcoming changes in legislation for the transport of radioactive materials in the UK and overseas. The presentations in the morning seminar covered the practical implications of these changes, whereas in the afternoon five parallel workshop sessions covered: quality assurance and monitoring, packaging, documentation, training, and security.

Caroline Billingham from The Department for Transport began the seminar with a presentation entitled "UK Transport Legislation for Dangerous Goods". The modal structure of international and domestic transport legislation was reviewed before Caroline focused on the new Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007. She emphasised that these represented a simplification of the legislation which has been achieved to a large extent by heavily referencing the relevant sections of the ADR. The practical effects of these new regulations are minimal for the road transport of radioactive material. There are no changes in design requirements or responsibilities, allowable contents, marking, labeling and placarding. The requirements for training remain largely unaltered, but consignment notes and certificates of conformity must reference the latest regulations. QA programmes must provide evidence that a review against the latest regulations has taken place. The derogations are now easier to locate, although one in particular (fire extinguishers) needs to be worked on! In general, it was proposed that

the new regulations should reduce the burden of paperwork. However, it was acknowledged that there were 'little anomalies' that will be sorted out before 2009, and the reasoning behind a biennial change in transport legislation remained somewhat unclear. There was reassurance (again!) that guidance notes for these regulations would be available from the Department for Transport (DfT) in the near future, and it was agreed that interactive, hyperlinked web-pages of guidance would be a useful addition to the DfT internet site. Caroline urged all stakeholders to contact the Dangerous Goods Division of the DfT with concerns, requirements and enquiries; they were there to make life easier for all of us.

The arrangements for international transport security were discussed by Loris Rossi from the DfT. He made the distinction between safety (measures to protect people and the environment in normal and accident situations) and security (prevention of malicious or terrorist acts). It was highlighted that radioactive material is probably most vulnerable to such acts during transport but that concerns about the transport security of RAM was a fairly recent issue. Security measures, particularly for 'high consequence materials' (i.e. activities > 3000 A2), should include more effective methods for competent authorities to identify carriers and operators, better source tracking using telematic technology, advanced notification and improved communication between duty holders.

Drawing on the considerable experience of GE Healthcare, Charlie Carrington gave an interesting talk on the practical issues associated with the international transport of RAM. There are many people involved in the international transport industry who are largely ignorant of RAM and therefore have a bad perception of it. Of course, the truth is that the transport of RAM is really a very safe process. Couple this with a tougher regulatory environment and the significant increase of security in recent years and it's not surprising that international transport of RAM is problematic. Examples include carriers and ports not accepting RAM, tighter checks at borders, holding of dangerous goods prior to shipment and general ignorance of the regulatory exemptions. The consequences of such problems are keenly felt in the medical sector where they lead to wasted doses and increased patient waiting list. Indeed, with a typical bulk transport of 25,000 patient doses, a 24hour delay can result in 5,500 patients not receiving a treatment. The patient is the loser.

Air transport of RAM was given special consideration by Estelle Walker (RPA and DGSA for Onephoton Consultancy) who gave a step by step description of the various stages of the process. When packages and their associated paperwork i.e. Air Way Bill and Dangerous Goods Declaration (aka consignment note) arrive at the airport they undergo a comprehensive acceptance check by IATA trained staff. They are then stored awaiting dispatch in a dedicated area of the transit shed, before being loaded into containers (e.g. ULD) and ultimately into the cargo hold of the aircraft. At this stage the pilot, on receipt of the Notification Document (NOTOC), can refuse the load. On arrival the consignment is checked for damage, mainly caused by fork-lift trucks, and stored in the destination transit shed until collection. All transit sheds are stringently controlled and subject to a REPPIR assessment. It was noted that all airlines have complex and multiple sub-contractor arrangements that are constantly changing. This can lead to problems in staff/RPS training and lack of regulatory awareness.

Bob Russ (EA RSR Policy Manager) talked about the Transfrontier Shipment of Radioactive Waste Regulations. He emphasised the UK governments policy (Command 2919) of 'self-sufficiency' i.e. radioactive waste should not be imported to or exported from the UK. There are exceptions to this principle. For example, shipments for overseas trials of new processing technology are relatively straightforward to authorize. However, bulk shipments (many tonnes) do not fit well with Cm 2919 unless they are LLW and the BPEO. Foreseeable changes include a change to the definition of 'radioactive waste' and the new TFS of Radioactive Waste Regulations in the UK which might appear in 2008.

The morning session was concluded by Trevor Moseley (RPA at Sheffield University) who discussed the packaging of RAM and waste in the non-nuclear sector. The 3 main CDG (2007) regulations associated with packaging are:

- **42** – covers QA programs.
- **51** – deals with the use of packaging and packages including categories and limits.
- **57** – sets out package design specifications and performance tests.

These, and their cross-references to ADR, were presented in some detail. The focus was on Excepted, Industrial and Type A packages, and Trevor provided useful information on package design for small users of RAM.

After lunch, the participants were cycled around 3 out of 5 workshops that had a ‘free discussion’ format aimed at bring to light stakeholders concerns and requirements. In one workshop the re-use of packages was debated. Can Type A’s be re-used as Excepted? It was felt that this practice was acceptable as long as there was only limited re-use (e.g. once). In relation to multiple use of the same package, the DfT urged consignors to check the original package manufacturer’s documentation or have their RPA re-test the package and issue their own simple certificate of conformity for ‘Excepted’.

It was pointed out that Type A is a package design specification. If the package does not bear any indication that it contains RAM (e.g. a trefoil) then it is not a ‘radioactive’ package, just a package that meets Type A design and testing criteria.

Labeling should be covered (i.e. with new labels) as the integrity of the package may be compromised by forcibly removing, for example, some Type A labels.

In another workshop the focus was on transport documentation. There were concerns expressed about ‘regular’ consignment notes and their expiry dates being 3 months or continuous. This will be resolved in the 2009 CDG Regulations 2009.

It was noted that many ports refuse RAM consignments and those that do require onerous amounts of documentation and copies thereof. Electronic documentation would facilitate the process but many ports still require signed paper copies.

Once again there was a general call for improved and more accessible guidance notes, perhaps separated into sectors e.g. nuclear and non-nuclear small user, from the DfT on the transport of RAM and waste.

SRP were holding a follow-up meeting with DfT to look at issues raised at this meeting. Check out the SRP website [www.srp-uk.org](http://www.srp-uk.org) for details of the outcome.

**Dr. Pete Cole, Radiation Protection Adviser.  
The University of Liverpool.**

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## **IATA Dangerous Goods Regulations**

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You can now keep up to date with developments in IATA dangerous Goods Regulations by looking up their ‘e-newsletter’. The first issue can be found at - [http://www.iata.org/html\\_email/4490403-DGR\\_newsletter/DGR\\_newsletter.html](http://www.iata.org/html_email/4490403-DGR_newsletter/DGR_newsletter.html)

On this first issue there are links to a summary of changes to be found in the 49<sup>th</sup> edition of IATA-DGR and a leaflet on packaging. There does not appear to be any changes that will be significant for radioactive material transport but there is further harmonisation in the treatment of excepted packages for multi-modal transport and there will be a standardised package marking that will replace the IATA excepted quantity label. However, it is not clear whether this will affect the excepted package label for radioactives.

## NEWS FROM HPA – Radiation Protection Division

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Recently published reports include the following:

- **HPA-RPD-033**  
[Indicative Atlas of Radon in England and Wales](#)
- **HPA-RPD-032**  
[GRANIS: A Model for the Assessment of External Photon Irradiation from Contaminated Media of Infinite Lateral Extent](#)
- **HPA-RPD-031**  
[Exposure to EMFs from Lightweight Aviation Transponders](#)
- **HPA-RPD-030**  
[An MCNP-4C2 Determination of Gamma Source Shielding: The transmission of 0.511 MeV and 0.662 MeV photons through concrete, lead and iron](#)
- **HPA-RPD-029**  
[Doses to Patients from Radiographic and Fluoroscopic X-ray Imaging Procedures in the UK – 2005 Review](#)

**Health Protection Matters –Summer 2007** – includes an article on ‘Getting ahead of the Directives’ which describes the training opportunities available from HPA for people involved in work with non-ionising radiations.

<http://www.hpa.org.uk/publications/PublicationDisplay.asp?PublicationID=100>

Just out is **Health Protection Matters – Autumn 2007** which contains an article on ‘Radioactive contamination of urban areas’. In the light of the Po-210 incident last year HPA experts in emergency planning look at how to deal with radiological emergencies in our cities. (*should be on the HPA website shortly*).

### Advice on risks from tritium

The independent Advisory Group on Ionising Radiation has published a report\* reviewing the risks of exposure to tritium, a radioactive isotope of hydrogen. Tritium is used in scientific and medical research and it also has various industrial applications. Following an extensive review of scientific evidence on the risks from exposure to tritium, the Advisory Group suggests that the International Commission on Radiological Protection (ICRP) should consider increasing its radiation weighting factor for tritium from 1 to 2. Radiation weighting factors are used to calculate doses and risks from radiation exposures.

Tritium is a radioactive isotope of hydrogen that decays by beta emissions with a maximum energy of 15.6 keV and a half-life of 12.3 years. It is formed through several processes, both natural and artificial, including nuclear fission and fusion power generation.

The Advisory Group has examined biological evidence from published laboratory experiments with tritium in cell cultures (in vitro) and from animal experiments (in vivo).

They have also reviewed the published evidence for effects on human health (epidemiology). The evidence indicates that tritium has a larger impact on biological systems than gamma rays or x-rays and its relative biological effectiveness (RBE) is greater than 1. This is the basis for the Advisory Group's recommendation that the RBE value for tritium should be taken as 2 and its suggestion that ICRP should consider increasing its radiation weighting factor for tritium from 1 to 2.

Epidemiological data on risks associated with tritium exposure are not strong because most of the studies conducted worldwide involved small numbers of people. The report therefore recommends that consideration is given to an international collaborative epidemiological study of tritium exposed populations.

In reviewing biokinetic models for tritium the report notes a wide range of animal and human data support the current ICRP models for radiation exposure and that models for tritiated compounds are under development. The report concludes by welcoming the development of new tritium models by ICRP and recommends that they be adopted for routine dose assessments when available.

Professor Bryn Bridges, Chairman of the Advisory Group said, " A lot of work has gone into this report and I hope the International Commission on Radiological Protection will consider our suggestion. Tritium is not highly radioactive but it can become widely dispersed in the environment and we felt a special review of the evidence was necessary."

Press enquiries. Please contact the Agency's press office at Chilton who will arrange interviews with members of the Advisory Group; Tel 01235 822744 or 822745; E-mail [chilton.pressoffice@hpa.org.uk](mailto:chilton.pressoffice@hpa.org.uk)

\* Review of Risks from Tritium. Report of the independent Advisory Group on Ionising Radiation. Documents of the Health Protection Agency. Radiation, Chemical and Environmental Hazards, REC-4. November 2007. ISBN: 978-0-85951-610-5. Available to download from the Health Protection Agency website at:

<http://www.hpa.org.uk/publications/PublicationDisplay.asp?PublicationID=0>

[http://www.hpa.org.uk/publications/2007/summer\\_hpamatters/summer\\_2007.pdf](http://www.hpa.org.uk/publications/2007/summer_hpamatters/summer_2007.pdf)

## NEWS FROM AFFILIATES

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### **PerkinElmer will deal with your old LSC counter and sources**

Until recently in the UK the disposal or scrapping of a piece of domestic electrical equipment involved taking the item to a recycling depot. Unlike a toaster or a washing machine however a scientific instrument needs to be decontaminated before disposal can occur. For a Liquid Scintillation Counter the situation is more complicated because it contains a radioactive source (for instance Ba133, Ra226, Cs137, Eu152) used for the external standard measurement which needs to be disposed of in a strictly regulated manner.

The normal process is that a qualified engineer removes the source, which is then taken away for disposal, then the instrument can then be de-contaminated and transported to a recycling facility.

The cost of the removal and disposal of the source can be many thousands of pounds after which the owner then needs to pay for the transportation and scrapping of the instrument at the recycling facility. This of course means that an old LSC becomes both a financial and logistical liability.

PerkinElmer now offers an easy and cost free way of dealing with this problem via the new “Source Disposal and Instrument Scrapping” campaign which works as follows.

When a new LSC is purchased to replace the old one, we send an engineer to remove and dispose of the source in a safe and compliant manner. The UK PerkinElmer service organization is in a very strong position in this regard in that we’re able to not only remove the source but also to take responsibility for it’s disposal.

After decontamination (and presentation of the decontamination form) for which the user is responsible, PerkinElmer will organize and pay for the cost of removal and scrapping of the old instrument at a recognized recycling facility. This will take place such that the new instrument can be delivered and installed right where the old one used to be.

The scheme has become possible due to the WEEE (Waste Electrical and Electronic Equipment) regulations that came into force in the UK in July 2007 which essentially require a manufacturer to dispose of an old instrument, if asked, when a replacement is purchased.

In response to the UK WEEE Regulations, PerkinElmer put together a process to finance and handle the collection, treatment, recycling and recovery of an item of old equipment (pre-August 2005) that a new PerkinElmer purchase replaces, on a one-for-one, like-for-like basis.

PerkinElmer has entered into an agreement with B2B who take care of transportation and recycling. For further details on the WEEE regulations go to:

<http://las.perkinelmer.com/OneSource/WEEE-UK.htm>

or for specific information on B2B visit their website at

[http://www.b2bcompliance.org.uk/WEEE\\_collections.asp](http://www.b2bcompliance.org.uk/WEEE_collections.asp)

The combination of our ability to remove and dispose of a scintillation counter source and our collection and recycling process means that we offer a fully joined up service for getting rid of an old scintillation counter. The only part of the process that the owner of the old instrument need consider is decontamination (and production of the associated document). If the requirement to replace a defunct or end of life LSC has been delayed due to worries about disposal costs and logistics, this need no longer be a concern.

### **AMEC**

A key supplier of radiological clean-up solutions to the small user, AMEC NNC, have recently undergone a corporate rebranding to AMEC.

The company name may have changed but, you can be reassured, the faces and quality of services remain the same. For any radiological clean up or surveying support, contact as usual remains Matt Smith – find full contact details in advert inside front cover.

## Global Dosimetry Solutions

Global Dosimetry Solutions pulled out all the stops to help make the 2007 Greenwich Conference a terrific event. Not only did they ensure that the social evening in the Kent countryside was well lubricated (*many thanks for the free bar Ron*) but they even had a few bob left over to put on a prize draw for people visiting their stand. Peter (*RPA on the Run*) Marsden ran off with the prize.

Below we see Ron Deardon of Global Dosimetry presenting a portable DVD player to the lucky winner.



## PYCKO

Bill keeps expanding the range of products he has on offer for us and as well as a growing range of radiological instruments he can also supply some useful spare parts for those of you that do your own repairs. He has recently started selling instrument cables and replacement foils for a range of common contamination monitors at very competitive prices. If you've not seen his flyers contact Bill Snooks at <http://www.pycko.co.uk/index.htm> for further information - and get him to work on his website!

## NEWS from BIC - LARNET replacement?

After being contacted by Mike Ainscough (retired) from RADMIL (Radiation Monitoring In Lancashire) last year, we were asked to put together a replacement system for measuring Gamma Dose & Meteorological parameters around the Lancashire County.

We have developed the RadMet system. It comprises a compensated Geiger and a modular range of meteorological instruments (wind vein, anemometer and tipping bucket rain gauge). The device, whilst designed for use by emergency planners is also a useful research tool for

investigating the variation in environmental dose rates which are significantly increased during intense rainfall events.

Jim Fitzgerald wrote the basic software system to communicate with the remote devices, display the information on the web & send text alerts if a Geiger went into alarm.

Another Liverpool Company wrote some graphical software (GIS) to sit on top of this to give easy visual indications

Different levels of password access for different emergency response teams, make the system 'saleable' to different government departments.

Some electronics had to be developed to convert the Geiger & Raingauge signals to RS232.

Mike Scott believes he has a strong team for this project with Harry Hunter acting Chairman (former NE Technology sales director). Chris Murdock (Peak RPA) has experience of the early RADMIL system and is providing radiation protection and environmental advice.

Once the main software is installed on a server, the stations are relatively cheap.

Further details can be seen at [www.bicitechnology.co.uk/RadMet](http://www.bicitechnology.co.uk/RadMet)

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## LONDON RPAs ON THE RUN

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On 28<sup>th</sup> October I joined with three of my RPA colleagues to take part in the Great South Run, which is a 10 mile run through the streets of Portsmouth. It is an event akin to the Great North Run in all but publicity and distance, being 3 miles shorter (thankfully).

It is classed as an easy run, because Portsmouth is flat, but that doesn't take account of persistent rain, cold weather and high winds blowing in the wrong direction. Steve Evans (Royal Marsden Hospital), Mandy Moreton (Guy's and St Thomas' Hospital) and Jim Thurston (King's College Hospital) took it in turns to make sure I didn't end my days in the Pompey gutters, for which I am grateful. Somewhere around the 7 mile mark, turning into the wind and stinging rain, I did wonder why on earth I was doing this. Was I just trying to con myself into thinking I am younger and fitter than I really am? Yes is the honest answer. But there was another reason. We were raising money for the Chernobyl Children's Project. This is a UK charity which provides recuperative holidays for children from the Chernobyl contaminated areas. It also initiates projects in Belarus to improve the lives of children with special needs, delivers humanitarian aid to Belarus, provides support for children with cancer including hospice care and organises child care training programmes. I would like to thank all the AURPO members who sponsored us. We set ourselves an ambitious target of £1,000, and to date we have raised just over £900. By mile 7 I had realised that I was conning myself, and Jim, Mandy and Steve alone wouldn't have stopped me calling it a day. It was the fact that you guys were giving money to this cause on the back of us completing the course that kept me going. I'm so grateful for that I won't even blame you for my dodgy knee, which popped up at mile 9.

Maybe next year you might want to take part? Write to Mr Editor if you do. I'll promise to watch the highlights on the telly.

Thanks, Peter.

If you missed out and would like to donate to CCPUK, our website [www.justgiving.com/LondonRPA](http://www.justgiving.com/LondonRPA) is open until 28th December. Failing that, send me a cheque, payable to "CCPUK", to Peter Marsden, Medical Physics, UCL Hospitals NHS Trust, Ground Floor Rosenheim Building, 25 Grafton Way, London WC1E 6DB. I'll forward it on.

# IAEA PUBLICATIONS

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The IAEA is pleased to announce the publication of three books in the area of human health:

## [Comparative Evaluation of Therapeutic Radiopharmaceuticals](#)

Technical Reports Series No. 458

Radionuclide therapy employing unsealed radiotherapeutic agents has emerged as an important tool for cancer management. A number of therapeutic radiopharmaceuticals based on different types of carrier molecule and a variety of radioisotopes are currently being developed, and reliable, efficient laboratory analytical methods are needed to compare their relative effectiveness and to establish their stability and chemical, radiochemical and pharmaceutical purity. To address these issues, the IAEA organized a Coordinated Research Project on the comparative evaluation of therapeutic radiopharmaceuticals. This report summarizes the results obtained over the course of that investigation and describes in detail the analytical techniques, biological assays, animal tumour models and protocols for the evaluation of therapeutic radiopharmaceuticals that were established as a result. The information contained in this book will be of interest to those working in radiopharmaceutical chemistry and development, pharmacology, dosimetry and preclinical studies. [STI/DOC/010/458](#), 312 pp.; 2007, ISBN 92-0-115106-3, English. 56.00 Euro. Date of Issue: 3 December 2007.

## [Labelling of Small Biomolecules Using Novel Technetium-99m Cores](#)

Technical Reports Series No. 459

Technetium-99m radiopharmaceuticals account for nearly 80% of all diagnostic studies done in nuclear medicine. The ability to determine the exact molecular structure of the coordination compounds by using modern powerful analytical tools such as NMR, mass spectroscopy and X ray diffraction contributed to the understanding of the structure–activity relationships underlying the biological behaviour of Tc-99m agents. Consequently, careful design of new ligands and their Tc-99m complexes led to the discovery of imaging agents for perfusion in the myocardium and brain, thereby extending the scope of diagnostic imaging using Tc-99m radiopharmaceuticals. Based on the new developments in Tc chemistry, there is a good scope for the development of new radiopharmaceuticals for imaging cancer as well as certain specific disease conditions. The IAEA organized a Coordinated Research Project (CRP) with the specific objective to develop labelled biomolecules with the novel Tc-99m metal cores such as the Tc-99m-Carbonyl, Tc-99m-Nitrido, Tc-99m (4+1) and Tc-99m-HYNIC cores. The preparation, quality assessment and biological evaluations of a large number of Tc-99m complexes with biomolecules such as RGD peptides, annexin derived peptides, fatty acid derivatives, quinazoline derivatives and glucose analogs were achieved by the participants during the CRP. The results obtained from the participating laboratories are summarized in this Technical Report. [STI/DOC/010/459](#), 311 pp.; 144 figures; 2007, ISBN 92-0-101607-7, English. 70.00 Euro. Date of Issue: 3 December 2007.

## [Comprehensive Audits of Radiotherapy Practices: A Tool for Quality Improvement](#)

Quality Assurance Team for Radiation Oncology (QUATRO)

Independent quality audits, forming part of a comprehensive quality assurance (QA) programme, are widely recognized as an effective method to verify that the quality of radiotherapy practice in a cancer centre is appropriate. The IAEA has a long-standing history of providing support and assistance to Member States through radiotherapy dosimetry audits. Though vital for the radiotherapy process, accurate beam dosimetry is not guaranteed for a successful patient treatment, as the QA of the entire radiotherapy process must be reviewed, a new approach has been developed and named “Quality Assurance Team for Radiation Oncology (QUATRO)”. The present guidelines provide the audit methodology for multidisciplinary expert teams to initiate, perform and report on such audits. The objective of a comprehensive clinical audit is to review and evaluate the quality of all components of the practice of radiotherapy at the institution, including its professional competence, with a view to quality improvement.

[STI/PUB/1297](#), 80 pp.; 0 figures; 2007, ISBN 92-0-103707-4, English. 40.00 Euro. Date of Issue: 5 December 2007

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

sales.publications@iaea.org fax: +43 1 2600 29302 / tel.: +43 1 2600 22529 /

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

## NEWS FROM IRPA

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### **IRPA Definition of Radiation Protection Expert (RPE)**

(A) “Radiation Protection” is that science and art devoted to the anticipation, recognition, evaluation, and control of radiation hazards that may cause impaired health and well-being, or injury among workers, patients, the public, or harm to the environment.

(B) “Radiation Protection Expert (RPE)” is a person:

- having education and/or experience equivalent to a graduate or masters degree from an accredited college or university in radiation protection, radiation safety, biology, chemistry, engineering, physics or a closely related physical or biological science; and
- who has acquired competence in radiation protection, by virtue of special studies, training and practical experience. Such special studies and training must have been sufficient in the above sciences to provide the understanding, ability and competency to
  - (1) anticipate and recognize the interactions of radiation with matter and to understand the effects of radiation on people, animals and the environment;
  - (2) evaluate, on the basis of training and experience and with the aid of quantitative measurement techniques, the magnitude of radiological factors in terms of their ability to impair human health and well-being and damage to the environment;
  - (3) develop and implement, on the basis of training and experience, methods to prevent, eliminate, control, or reduce radiation exposure to workers, patients, the public and the environment.

(C) In most countries the competence of radiation protection experts needs to be recognized by the competent authority in order for these professionals to be eligible to undertake certain defined radiation protection responsibilities. The process of recognition may involve formal certification, accreditation, registration, etc.

### **IRPA Call for Papers for XII**

IAEA has voiced support for the XII International Congress to be held in Buenos Aires on 19-24<sup>th</sup> October 2008 and hopes that governments will facilitate the attendance of delegates from developing countries. For further details about this meeting check out the IRPA website at –

[http://www.irpa.net/index.php?option=com\\_docman&task=cat\\_view&gid=85&Itemid=66](http://www.irpa.net/index.php?option=com_docman&task=cat_view&gid=85&Itemid=66)



Association of  
UNIVERSITY  
RADIATION  
PROTECTION  
OFFICERS

## AURPO Subscription 2007-2008

# To all members

The annual subscription of **£20** (£10 for retired members) to the Association was due on the **1<sup>st</sup> July 2007**. If you did not attend the conference and have still to pay your subscription please pay now and return the tear-off slip below, together with your cheque made payable to AURPO.

*Gillian Glazier*

*Honorary Treasurer*

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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 **2007-2008** (**1<sup>st</sup> July 2007 to 30<sup>th</sup> June 2008**).

**I confirm my membership of IRPA through the Association.**

**Name:** .....

**Address:** .....

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**Telephone:** .....

**Fax:** .....

**Email:** .....

**Signed:** ..... **Date:** .....