European ALARA Network
http://www.eu-alara.net
Issue 19 - August 2006

European ALARA Newsletter

Editorial

EAN: Reasons for a success

EAN has been quite successful, and is still growing (number of countries participating, number of topics addressed, number of recommendations implemented, etc). One may wonder about the reasons for that success. They may be summarised as follows:

Personal links and Communication: while most communication systems or procedures have been set up through institutional channels, the Network favours personal links; it provides opportunities for communication between individuals. It is able to introduce many "bypasses", as it does not have to follow formal or administrative procedures. It brings together individuals belonging to many types of stakeholders within EAN. It gives the opportunity to all these individuals to express their needs and to listen to each other.

Enthusiasm: experience shows that enthusiasm is a key factor for the network. The Network provides individuals with opportunities to discuss the real problems they encounter in their (professional) life, and to try to find together solutions to these problems. Therefore, enthusiasm is evident within all EAN actions, which favour a bottom-up approach (workshops, work in small groups, web forum, etc).

Flexibility: the Network appears to be much more flexible at the international level than any other type of organisation involving different institutions. EAN is quite independent, and can easily show its interest in new topics and involve representatives from new stakeholders according to the selected topic. No permission has to be requested; no formal rules have to be followed. Initiatives are easily taken, at least in a first step, for promoting new workshops, new groups, new sub-networks, new web-pages. The main constraint on Network actions is, in fact, ensuring that they can be financially supported.

Collective efficiency: by bringing together different types of stakeholders, or stakeholders from different countries, different backgrounds, different experiences, the network favours the emergence of common solutions to problems that address many, if not all, dimensions of these problems. Therefore these solutions will be (are) easier to implement, as shown by experience from the Networks participants and have more chance of remaining sustainable.

These keywords are the exact foundation for the setting up of a new EAN sub-network in June 2006: the ERPAN (**European Radioprotection Authorities network**), which is described in this issue of the Newsletter. In addition, following a request from the members of the ENETRAP research project (European Network on Education and Training in RAdiological Protection), an EAN working group will be set up in the next few months to provide the European Commission with recommendations on what is needed to teach ALARA culture.

Finally, a totally new EAN website site has been developed, and it now includes a search engine and some new pages. The address of the new website is: www.eu-alara.net

C. Lefaure
EAN Chairman
Email: lefaure@cepn.asso.fr

Contents of Issue #19

Coordinated by CEPN,
European ALARA Newsletter ISSN 1270-9441
c/o CEPN - 28, rue de la Redoute - F-92260 FONTENAY-AUX-ROSES
TEL: +33 1 55 52 19 20 FAX: +33 1 55 52 19 21
E-MAIL: sec@cepn.asso.fr

European Radiation Protection Authorities Network (ERPAN)

S. Fennell (RPII, Ireland)
N. Stritt (SFOPH, Switzerland)

The 8th European ALARA Network (EAN) Workshop (Occupational Radiological Protection Control through Inspection and Self-assessment) held in Uppsala, Sweden in 2004 brought together many stakeholders throughout Europe including for example regulatory authorities, utilities, trade unions, research centres etc. The Workshop provided a forum both for reviewing existing inspection and self-assessment practices in European and for developing a set of recommendations as to how radiation protection could be further improved into the future.

One of the recommendations from the Workshop was that there should be better communication between regulatory authorities throughout Europe in relation to the regulation of users of sources ionising radiation outside the nuclear/fuel cycle sector. Arising from this recommendation the Steering Committee of the EAN decided to establish a new sub-network in order to facilitate communication between regulators. Recognising the work of other regulatory authority networks it recommended that this new sub-network should focus on areas such as inspection and authorisation processes, rather than higher level policy making areas, and should involve participation from inspectors or managers of inspection teams across Europe.

On the 21st June 2006 the first meeting of the new European Radiation Protection Authorities Network (ERPAN) took place at the headquarters of ASN in Paris. Regulatory authorities from 12 European countries participated in the meeting at which the Terms of Reference were established. This network is open to all regulatory authorities across Europe and participation from new members is welcomed.

An overview of the scope and purpose of this new network, together with a discussion as to how regulatory bodies can help implement ALARA, will be presented at the 10th EAN workshop to be held in Prague in September.

TERMS AND REFERENCE OF THE EUROPEAN RADIATION PROTECTION AUTHORITIES NETWORK (ERPAN)

Purpose
The ERPAN aims to promote communication between national regulatory authorities including the exchange of information, requirements and experiences on the process of authorisation and inspection methods employed in European countries in order to promote the ALARA principal. It also aims to help improve the operational efficiency of radiation control across Europe while recognising the different regulatory systems within the various countries.

Collaboration with the European ALARA Network (EAN)
On an annual basis the network will update and inform the European ALARA Network of its work and through the EAN's Newsletter and web site.

Scope of the Network
The network will cover all radiation protection topics relevant to European radiation protection authorities relating mainly to non-nuclear users of ionising radiation such as research, education, medical and industrial application as well as NORM.
The following topics may for instance be addressed:

- Inspection and investigation practices, joint inspections
- Training requirements for inspectors
- Process of authorisation (notification, registration, licensing)
- Reporting system from users to regulators
- Regulatory communication with users
- Intervention issues
- Communication on radiological events
- Environmental impacts arising from the uses of ionising radiations

Membership of the network and nomination
All European radiation protection regulatory authorities should be encouraged to participate in the network. Representatives should be nominated by the appropriate regulatory authority within each country. Regulatory authorities should ensure some continuity in their representation.

Duration of the membership
Participation by the representatives of regulatory authorities is entirely voluntary.

Roles and responsibilities of the representatives
To express the views of the regulatory authority they represent, to contribute to debate, to prepare for meetings, to undertake specific tasks as required and disseminate information within their own country.

Process for nomination of a chairperson, a deputy and a secretary
The chairperson, its deputy and secretary are elected every two years. These elections take place during meetings of the ERPAN.

Financial consideration
Each participant will cover their own travel and subsistence expenses.

Venue and frequency of the meetings
The network will meet approximately once a year at a convenient location. The date and venue for each meeting will usually be chosen to coincide with an European ALARA Network meeting or Workshop.

Approved: Paris, 21st June 2006

Creation of a European Platform on Training and Education in Radiation Protection (EUTERP Platform)

J. van der Steen (NRG, The Netherlands)

INTRODUCTION

In Europe, a common vision for maintaining competences in radiation protection is emerging, focussing on a common denominator for qualification of radiation protection experts (RPEs) and for mutual recognition and mobility of these experts across the European Union. Therefore, the European Commission, D-G Transport and Energy, has launched an initiative to establish a European Radiation Protection Training and Education Platform (EUTERP Platform). The project can be considered as a follow-up of two earlier projects, namely a survey of the status of the Radiation Protection Experts in the Member and Candidate States of the European Union [1], carried out in 2002, and a feasibility study for a work programme and structure of the EUTERP Platform [2], carried out in 2004. Both projects recommended the establishment of the EUTERP Platform to address a number of issues related to education, training, recognition and mutual acceptance of RPEs. The EUTERP Platform started on 1 April 2006 and has a term of 36 months. Following the end of the project, it is intended that the Platform shall be kept functional in a self-sustainable form.

Both the survey and the feasibility study showed a great interest of Member and Candidate States to participate in such a Platform, aiming to facilitate mutual recognition of diplomas and qualifications in the radiation protection field. The objectives of the Platform can be summarised as:

- To remove obstacles for the mobility of RPEs within the European Union through harmonisation of criteria and qualifications for and mutual recognition of such experts;
- To facilitate the transnational access to vocational education and training;
- To better integrate education and training into occupational radiation protection infrastructures in the Member, Candidate and Associated States of the European Union.

The feasibility study concluded that a pragmatic and stepwise approach should be necessary for a harmonised and internationally agreed system of recognition of RPEs. It was also recognised that all countries have developed their own education system over a long period of time and it would be impossible to strive for complete uniformity in the educational approach. Instead of that, and despite the diversity of education and training systems, harmonisation should be reached by evolution of internationally agreed common minimum criteria for the qualifications of the RPE. Recognition should not only be based on the initial education and training, but also on competence. The Platform could provide the basis for such an international agreement.

PARTICIPATION IN THE PLATFORM

In order to reach the objectives, the EUTERP Platform shall cover the 25 European Union Member States as well as the Candidate States Bulgaria, Croatia, Romania and Turkey. In view of the interpenetrating labour markets it shall integrate also the Associated States Norway and Switzerland. The Platform shall serve as a network, aiming to improve the co-operation between the various stakeholders in the field of radiation protection training and education, i.e.:

- The national competent radiation protection authorities;
- The national bodies responsible for professional education and vocational training;
- The providers of training and education in the radiation protection area;
- Professional organisations representing the receivers of training and education;
- International organisations and associations;
- Operators and employers.

The participants of the Platform should have knowledge of:

- The national regulations in their countries with respect to radiation protection, in particular in relation to the requirements of the Basic Safety Standards Directive 96/29/Euratom [3];
- The national education system for radiation protection in the different areas of work, such as the nuclear sector, the medical sector, industry, education and research, et cetera;
- The minimum training and education requirements and qualifications for recognition of radiation protection experts;
- The training needs in their country.

The EUTERP Platform shall be an instrument for the participating countries to align their national

requirements in order to avoid discrimination of RPEs from other countries. It shall clarify the role of RPEs in different work sectors, taking into account the definition of the QE in the Basic Safety Standards Directive and the guidance given in Annex I of the Commission's Communication [4] and shall ensure a permanent dialogue between all involved parties. Conclusions may be formulated by the Platform participants including recommendations for initiatives to be taken by the Commission.

STRATEGY TO REACH THE OBJECTIVES

At the moment, there are a number of ongoing and planned national and international activities related to education and training and to recognition of RPEs. IRPA has declared that Education and Training is a key factor in establishing effective national radiation protection programmes. Under the topic Education and Training of the 6th Framework Programme of the European Commission, several projects have been selected that address radiation protection in various sectors of work. Furthermore, the IAEA has developed a strategy plan to establish sustainable radiation protection education and training infrastructures in its Member States.

All these activities deal with education and training, each with its own specific objectives. They have in common that they aim to combat the decline in RPEs and to make effective use of training resources. By their international structure, they are facilitating the international harmonisation of the education and training programmes as well as the criteria for recognition. The strategy for the Platform should therefore be to obtain the position of centre-half with respect to all education, training and recognition activities in the European Union. It should establish close links with all these projects and organisations. The results of the various projects can on the one hand be disseminated by the Platform in an effective way throughout the European Union and they can also be used as input for further work of the Platform. Furthermore, the Platform could act as an advisory body for the European Commission on education and training issues. The Platform should promote the use of standardised training material in the various countries, identify the training needs and facilitate in the support and assistance of establishing a high standard of radiation protection in all European countries. By doing so, the participants should be convinced of the importance of participating in the Platform, thus assuring a self-sustainable network in the longer term.

GENERAL APPROACH

The feasibility study recommended the establishment of a permanent office for providing the necessary infrastructure of the Platform. According to that, the Platform shall be based on three pillars:

1) The main pillar shall be a permanent office designed to ensure the continuous exchange of information between all involved national and international partners. The office shall be operated by NRG. A EUTERP website and the issuing of regular newsletters, to be widely distributed, will be part of the activities of the office.
2) The second pillar will be the organisation of workshops on specific subjects aimed at solving identified problems.
3) The third pillar will be the preparation of conclusions in the form of opinions guidelines and recommendations worked out on the basis of the exchange of information and experience between the platform participants.

For the supervision of the project the European Commission has established a Steering Committee. In addition to its supervising task, the Steering Committee will, together with the project leader, elaborate a yearly work plan for the Platform.

The first year's work plan concentrates on the three key elements identified in the feasibility study, i.e.:

- To analyse the differences in interpretation of the BSS definition of the QE in the national legislation;
- To define common minimum requirements for competences of RPEs, RPOs and workers, taking into account job profiles, sector of work, etc.;
- To provide guidance on the implementation of the requirements into national legislations.

Much of the research necessary for establishing a harmonised system of recognition of RPEs is being addressed in the ENETRAP project [5]. Work Package 3 of this 6th Framework project is specifically targeted at getting information about the first point of the above-mentioned key elements, and will provide the elements for the second point of the key elements, i.e. a common denominator for the requirements for the competences of RPEs. The ENETRAP project will be finished by 1 April 2007, and the results will therefore be available within the first year of the EUTERP Platform.

FIRST WORKSHOP

The workshops will have a frequency of about one per year, with a duration of three to four days. The general layout of the workshops will be:

- Presentations on the achievements of the Platform;
- Presentations of participants, in particular on the impact of the Platform in their respective countries;
- Discussion on programmatic issues;
- Discussion on structural issues (sustainability of the Platform);
- Discussion on future work;
- Conclusions and recommendations.

The first workshop has been tentatively planned in the week of 21 May 2007 in Vilnius, Lithuania. The main topics of the workshop include the programme-related and structural issues of the Platform. The programme-related issues will concentrate on the key elements as described above. The results of the ENETRAP project will produce the elements that are necessary for defining common minimum requirements for competences of

radiation protection experts, and will be discussed extensively in order to derive conclusions and recommendations on this point.

RELATIONSHIP WITH EAN

The set-up of the EUTERP Platform, especially the coordination activities (website, newsletters, workshops) and the role of the Steering Committee, resembles very much the set-up of EAN. This is on purpose, because EAN has proven to be based on a successful formula, which has also been copied for the Regional European and Central Asian ALARA Network (RECAN, supported by the IAEA). Since training and education are basic elements for establishing an ALARA culture, a close relationship will be established between EUTERP, EAN and RECAN. As it has been the case with EAN, EUTERP also has to become a self-sustainable network in the future. At the end of the project, it should be clear what the common interest for a continued participation in the Platform is, i.e. the willingness to participate in the Platform by financial and/or in-kind contributions. This will result in a recommendation on the structure and activities of the Platform in the period after the conclusion of the project, including a proposal for finding the necessary resources.

REFERENCES

[1] F.S. Draaisma, J. van der Steen, **The Status of the Radiation Protection Expert in the EU Member States and Applicant Countries: Study on Education and Training in Radiation Protection**, European Commission, Radiation Protection Series N° 133, 2003.

[2] J. van der Steen, F.S. Draaisma, M. Marco Arboli, **Initiation of the European Platform on Training and Education in Radiation Protection (EUTERP Platform): Final report**, including the Proceedings of the workshop, 20-21 May 2004, CIEMAT, Madrid, NRG Report 21421/04.60160/P, 2004.

[3] **Council Directive of 13 May 1996 laying down Basic Safety Standards for the Health Protection of the general Public and Workers against the Dangers of Ionising Radiation**, Council Directive 96/29/Euratom, Official Journal L-159 of 29 June 1996.

[4] **Communication from the European Commission concerning the implementation of Council Directive 96/29/Euratom**, Official Journal L-133 of 30 April 1998.

[5] M. Coeck, C. Etard, S. Möbius, A. Schmitt-Hannig, A. Luciani, J. van der Steen, M. Marco Arboli, J. Stewart, J. Balosso, R. Thompson, **The Establishment of a European Network on Education and Training in Radiological Protection "ENETRAP"**, Proceedings of the 3rd International Conference on Education and Training in Radiological Protection, 23-25 November 2005, Brussels, Belgium.
http://www.etrap.net/news.htm

Transport Case Prompts Reminder on the Importance of Radiation Protection Controls Incident Case Study n° 20

Gareth Thomas (HSE, UK)

The UK Health and Safety Executive (HSE) have issued a reminder to companies working with radiation on the importance of protection control measures, including basic monitoring. The reminder follows the conclusion of a prosecution case brought jointly by HSE and the UK Department for Transport (DfT) against specialist contractor, AEA Technology plc (AEAT).

The court fined the company a total of £250,000 (approx Euro 343,000) and ordered to pay £151,323 (approx Euro 205,000) prosecution costs. The company pleaded guilty to criminal charges under health and safety and road transport law, of:

(i) Failing to ensure, so far as reasonably practicable, the health safety and welfare at work of employees during work associated with the removal and transport of the radiation source;
(ii) Failing to conduct the transport and management of radioactive materials in such a way as to ensure, so far as was reasonably practicable, that persons not in its employment who may be affected thereby were not exposed to risks to their health or safety;
(iii) Failing to take all necessary steps to restrict, so far as reasonably practicable, the extent to which employees and others were exposed to ionising radiation;
(iv) Failing to ensure that ionising radiation levels were adequately monitored;
(v) Failing to ensure that requirements for package inspection were satisfied before shipment, and;
(vi) Causing a package containing a radioactive source to be transported without determining the Transport Index of that package. A further charge of failing to adequately consult a Radiation Protection Adviser (qualified expert) was held on file.

The prosecution followed an incident in March 2002, when AEAT were contracted to remove a 129 TBq cobalt-60 tleltherapy source, previously used in cancer treatment, from a Leeds hospital and transport it 3.5 hours by road to Windscale, Cumbria, for disposal. At Windscale, radiation levels of up to 3.5 Sv/h were discovered coming from underside of the specialist container used to transport the material.

Investigation revealed that a vital shieldielding bar was missing from the inside of the transport container and that this allowed a beam of radiation to emit from its base. It was also found that the packaging inside the container was wrongly configured and the source was able to mover around inside the container. Although radioation monitoring had been performed around the container, measurements were not routinely carried

underneath and the high dose rates had therefore gone unnoticed.

A primary cause of the incident was the company's failure to supervise and support their staff properly in the use and preparation of the transport containers.

Fortunately although there is no evidence that anyone received a significant exposure during the preparation and transport of this material, there was clearly the potential for an extremely serious incident. Anyone exposed to the beam coming from the container could have exceeded the legal dose limit within seconds and suffered radiation burns within minutes.

LESSONS LEARNED

The case highlights the need for proper preparation and monitoring of transport packages. Adhering to approved contaner preparation procedures would have detected the omission of the shielding bar before the radioactive material was loaded to the package. Whilst passing sentence, the court remarked that the incident had arisen because of poor management, no oversight, and poor relationships between key personnel. Employees involved were substantially remiss, indefferent to the fact that the wrong transport contaner was used, made assumptions that were wholly unjustified, failed to follow their own procedures, were cavalier and indifferent to their duties, and their failure to obtain advice from their RPA demonstrated a degree of arrogance. The court also commented that the risk was considerable, was deeply concerned that had there been a road traffic accident during the journey grave risk of radiation injury could have resulted, and that it was not impressed by the suggestion that the employees involved had been misslead by the numbering of the flasks. It concluded that anyone involved in the radiation industry had to be meticulosly caerful and that there was no room for carelessness, making assumptions and not following procedures.

Analysis of a Radiological Incident in Ireland Incident Case Study n° 21

Jack Madden (RPII, Ireland)

INTRODUCTION

During 2004 the Dosimetry Service of the Radiological Protection Institute of Ireland measured a penetrating dose of 11.3 mSv on a TLD assigned to a van driver employed by a licensed distributor of radioactive sources in Ireland. The TLD was issued on 1st September 2004 and received back on the 18th October 2004. The exposure period for the TLD is taken to be between 4-6 weeks.

On Saturday morning of each week the driver collected six Technetium generators (from a licensed depot at Dublin Airport) for delivery to hospitals in Cork city to the south and Galway city to the west. Cork city is about a 3 hour drive from Dublin and Galway city is about a further 3 hour drive from Cork.

In accordance with their licence conditions the Distributor carried out an incident investigation into this recorded dose of 11.3 mSv, and in their Incident Report they stated that, during the exposure period of this TLD, the van driver had carried the Technetium generators into the hospitals as on-going construction work at the hospitals had prevented trolley access. The van driver was wearing his TLD on his trousers pocket/belt during each days work.

During the exposure period in question it was estimated that the van driver would have physically carried the generators for a total of about 120 to 180 minutes, and the Distributor concluded in their Incident Report that physically carrying the Technetium generators into the hospitals was responsible for the high recorded dose on the van driver's TLD. It is worth noting that carrying the Technetium generators into the hospitals was a clear breach of the Distributor's own stated work procedures.

As part of the Regulatory Services Division investigation into this recorded high dose it was decided to conduct a series of exposure/dose measurements on live Technetium generators following their arrival into Dublin Airport on one Saturday morning. These measurements would be used as part of a dose reconstruction.

All radiation measurements were therefore conducted on Saturday 15th January 2005 in the car park of one of the Cargo Depots at Dublin Airport.

MEASUREMENTS

One of the Technetium generators with a designated TI of 2.5, based on a facility production date of 14th January 2005, was isolated for analysis from the rest of the consignment.

A series of radiation measurements were made at the top surface (lid) and at the side walls of the outer container using Mini-Rad 1000 Series instruments. Additional measurements were made at a distance 1 m from the container in order to validate the TI value.

TLDs were placed on the lid of the container, and attached to the side walls of the container for a period of 11 minutes.

Radiation measurements were made in the driver's seat at the front of the vehicle in order to estimate the dose received by the driver during transport with the full consignment of 6 generators securely stowed in the back of the Ford Transit transport vehicle.

Radiation measurements were also made at a point c.5 cm distance from the load in order to replicate the exposure situation of the generators being securely stowed in the front of the transport vehicle i.e. directly behind the driver's seat.

RESULTS

The Technetium generator in question indicated a dose rate of c.500 µSv/hr along the vertical sides of the container and a dose rate of c.600 µSv/hr across the lid. The TI recorded, with a Min-Rad 1000, was between 2 and 3 consistent with a designated TI value of 2.5 as of the 14th January 2005.

When all the generators were securely stowed at the back end of the transport vehicle the dose rate at the driver's seat in the front end of the vehicle was 5-10 µSv/hr. The dose rate at a point c.5 cm distance from the load was c.500 µSv/hr, and this was taken as representing the maximum dose rate that could possibly be received by the driver if the generators were stowed directly behind the driver's seat and not to the rear of the vehicle.

DISCUSSION OF RESULTS

The van driver explained that during the period in question he wore his TLD on his trousers pocket/belt and he carried the generators at arms length down by his side. At the end of each Saturday the TLD was left in the transport vehicle until the following Saturday. The transport vehicle was not involved in transporting radioactive sources from Sunday to Friday.

A typical Saturday trip for the driver was to deliver 3 generators to Hospitals in Cork and 3 generators to hospitals in Galway. This would entail about 6 hours of travelling with a diminishing number of generators on board. The return journey from Cork or Galway would entail an empty van.

On the basis of the information supplied by the van driver and the results of the radiation measurements made on the Technetium generator in Dublin Airport a maximum dose of the order of 1 to 1.5 mSv could possibly have been received by the van driver from carrying the generators. An additional dose of c.400 µSv could have accrued from transporting the generators giving rise to a maximum dose of the order of 2 mSv over the exposure period. An estimated dose of this magnitude is not consistent with a recorded TLD dose of 11.5 mSv over the exposure period.

In the course of further discussions with the van driver it transpired that the Technetium generators were, more than likely, stowed directly behind the driver's seat in the front of the vehicle, as this allowed easier access to the generators by the driver.

Stowing the generators directly behind the driver's seat could have given rise to dose rates of the order of 500 µSv/hr over several hours each Saturday. If we assume 3 hours at 500 µSv/hr and a further 3 hours at 200 µSv/hr then the van driver could have received a dose of the order of 2 mSv per week from transporting the generators giving rise to a total dose from transporting and carrying the generators of the order of 12 mSv.

CONCLUSIONS AND LESSONS LEARNED

It is the opinion of the Regulatory Services Division that the high dose received by the van driver was as a consequence of a lack of understanding of the radiation hazard associated with the products he is transporting, and of a deficiency of appropriate training and supervision by the Distributor. Stowing the generators in the front end of the vehicle is not consistent with the "Notes for Drivers" issued by the Regulatory Service, and is also a clear breach of the Distributor's own stated work procedures.

The Distributor was asked to update/amend their Radiation Safety Procedures or Local Rules and to revise their staff training to emphasise that:

a) Technetium generators should always be stowed in the rear of transport vehicles in order to ensure that the radiation dose rate at the driver's seat is less than 20 µSv/hr when the transport vehicle is fully loaded.
b) Once outside the transport vehicle the Technetium generators should only be moved around on a designated trolley provided by his employer. Drivers should not, under any circumstances, physically carry generators into client's premises.

This incident highlighted:

1) The merits of drivers wearing TLDs as it was through this practice that the circumstances giving rise to unacceptable radiation doses to this particular van driver was discovered.
2) The benefits of conducting dose reconstructions following incidents of high recorded doses.
3) Inspections carried out by Regulatory Authorities on licensed Distributors should always include field inspections of the transport side of things.

Justification, Optimisation and Dose Limits The Recent Evolution of National Regulations in European Countries (Update)

Pascal Croüail (CEPN, France)

In 2004, ICRP consulted publicly for six months on a first version of its draft Recommendations. ICRP is now consulting on an updated draft (RP06), which was compiled taking the consultation comments on the previous version into account. This updated draft is posted for consultation on the ICRP website; comments are accepted no later than 15 September 2006. [http://www.icrp.org/draft_second.asp]

It must be pointed out that this new ICRP draft is not calling into questions the so-called *three principles* which have now governed the radiological protection for more than 40 years (i.e. justification of practices and interventions, limitation of individual doses, and optimisation of individual and collective, actual and/or potential exposures below constraint levels to guarantee that doses are maintained as low as reasonably achievable - ALARA - taking into account socio-economical factors).

In this context, the EAN has considered that it would be useful to make a specific survey in order to evaluate the dissemination of the justification, limitation, and optimisation principles through Europe. A questionnaire was prepared by the EAN Newsletter Editorial Board and sent to all EAN (18 countries) and RECAN (22 countries) national contact persons.

Such a survey was first undertaken in 2001 and its results were published in the ALARA Newsletter issue N° 9. However, at that time, it was mainly limited to EAN Member countries. Since then, the enlargement of the EU has led to several new implementations of the European Directives 96/29 and 97/43 that are directly inspired by ICRP N° 60 Recommendations (see Table 1). In addition, some non-Member States are using the IAEA Basic Safety Standards for Radiation Protection [1996] that are also based on the Recommendations made by ICRP in 1990.

The new EAN survey shows that the majority of European countries have now adopted a common framework and compatible regulations as far as radiological risk management in normal and accidental circumstances is concerned, even if small differences remain.

The justification principle is systematically included into regulations but, the practices which are definitively unjustified by Law are not often clearly cited, nor are the criteria to be used to justify a continuation of an existing practice, the use of radiation exposures for diagnostic or therapeutic purposes, or an intervention after a radiological accident.

The maximum individual doses for public and the occupational dose limits (see Table 2) are similar everywhere; the small differences that can be observed (e.g. on the reference period taken into account, the way to manage exceptional cases, etc) are not especially significant but could still, potentially, lead to unjustified and time-consuming administrative difficulties, especially in the context of a labour market which is more and more open to a free circulation of goods and workers. A total harmonisation of these dose limits would, therefore, be beneficial.

Nuances of style in the wording of the optimisation principle (ALARA) exist, but the overall meaning appears consistent. The survey shows clearly that a few countries have explicitly adopted the concept of *dose constraint* which was especially emphasized by ICRP Publication 60.

A more complete paper and the corresponding answers to the questionnaire received from about 25 countries will be presented and discussed during the 10th ALARA Workshop in Prague (***"Experience and new developments in implementing ALARA in occupational, public and patient exposures***"), 12-15 September 2006 (http://www.eu-alara.net/).

Table 1. Status of the Basic Safety Standards in the Regulations of European Countries (March 2006)

Countries	Date of National Laws & Regulations that implement BSS
EC MEMBER STATES	
Austria	10 December **2004** (96/29 & 97/43)
Belgium	20 July **2001** (96/29 & 97/43)
Cyprus	**2002** (96/29 & 97/43)
Czech Republic	12 July **2002** (96/29 & 97/43)
Denmark	31 October 1997 (96/29) 1998-**2000** several Orders (97/43)
Estonia	16 May 1997 (96/29) 1 May **2004** (97/43) to be completed in 2006/2007
Finland	before May **2000** (96/29 & 97/43)
France	28 March 2001 - Order 31 March **2003** - Decree (96/29 & 97/43)
Germany	20 July 2001 (96/29) 24 June **2002** (97/43)
Greece	6 March **2001** (96/29 & 97/43)
Hungary	2000 (96/29) 3 October **2001** (97/43)
Ireland	11 May 2000 (96/29) October **2002** (97/43)
Italy	26 May 2000 (96/29 & 97/43 partially) revised 9 May **2001**
Latvia	5 March 2002 (97/43) 9 April **2002** (96/29)
Lithuania	24 December 1997 Revised 21 December **2001** (96/29 & 97/43)
Luxemburg	14 December 2000 (96/29) 6 Juin **2001** (97/43)
Malta	**2003** (96/29)
Poland	28 May 2002 (96/29) 12 March **2004** (97/43)
Portugal	17 July 2002 (96/29) 8 August **2002** (97/43)
Slovak Republic	2000-2001 (96/29 & 97/43, both partially) Full implementation expected in June 2006
Slovenia	11 July **2002** (96/29)
Spain	6 July 2001 (96/29) 13 July **2001** (97/43)
Sweden	1998-2000 (96/29, partially) -**2002** (97/43) (complements in 2006: NORMs, aircraft crews)
The Netherlands	16 July **2001** (96/29 & 97/43)
United Kingdom	3 December 1999 (96/29 & 97/43) 13 April **2000** (97/43)
NON EC MEMBER STATES	
Bulgaria	In compliance with EC Directive(s) 24 August 2004 (~ 96/29) &? (~97/43)
Croatia	In compliance with EC Directives (5 March 1999) Definite implementation expected in 2006
Georgia	Regulation refers to IAEA BSS Compliance with EC Directives in progress
Kazakhstan	Regulation refers to IAEA BSS
Macedonia	Regulation refers to IAEA BSS Compliance with EC Directives in progress (expected end of May 2007)
Norway	In compliance with EC Directives 12 May 2000 & 1 February 2001
Romania	In compliance with EC Directives 28 December 2001(~ 96/29) 14 March 2002 (~ 97/43)
Serbia	Draft Law complying with IAEA BSS
Switzerland	In compliance with EC Directives 22 June 1994 (ORaP) revised 1999-2001 20 January 1998 (medical sector) 15 November 2001 (sealed sources in medicine)

Table 2. Dose Limits for Stochastic Effects (mSv)

Countries	Members of Public	"Workers A" and Major Students	"Workers B" and Minor Students	Pregnant Women and Foetus	Workers in exceptional circumstances (excluding emergency situations)
EC EURATOM DIRECTIVE 96/29	1 / year	100 / 5 years & 50 / year	6 / year	1 (fœtus)	-
Austria	1 / year	100 / 5 years & 50 / year	6/ year	1 (fœtus)	
Belgium	1 / year	20 / 12 rolling months	6 / year	1 (fœtus) - whole pregnancy No work in contaminated area	
Czech Republic	1 / year 5 / 5 years*	100 / 5 years & 50 / year	6 / year	1 (fœtus) **	50 / year ("specific circumstances") 500 / 5 years ("unusual events")
Denmark	1 / year	20 / year	6 / year	1 (fœtus) **	-
Estonia	1 / year	100 / 5 years & 50 / year	6 / year	1 (fœtus)	-
Finland	1 / year	100 / 5 years & 50 / year	6 / year	1 (fœtus)	-
France	1 / year	20 / 12 rolling months	6 / 12 roll. months	1 (fœtus) **	40 / operation ("exceptional circumstances", needs authorization)
Germany	1 / year 0.3 / site	20 / year & 400 / lifetime	6 / year	1 (fœtus) **	-
Greece	1 / year	20 / year	6 / year	1 (fœtus) **	Needs authorization 100 / 5 years & 20 / year
Hungary	1 / year	100 / 5 years & 50 / year	6 / year		50 / year (maximum 5 years & specific conditions)
Ireland	1 / 12 rolling months	20 / 12 rolling months	6 / 12 roll. months	1 (fœtus) **	-
Italy	1 / year	20 / year	6 / year	1 – whole pregnancy	20
Latvia	1 / year	20 / year	6 / year	1 / year	Needs special authorization 100 / 5 years & 20 / year
Lithuania	1 / year 5 / 5 years*	100 / 5 years & 50 / year	6 / year	1 (fœtus) **	-
The Netherlands	1 / year 0.1 / source	20 / year	6 / year	unlikely > 1 (woman)**	100 / operation
Slovak Republic	*1 / year*	*100 / 5 years & 50 / year*	*6 / year*	*1 (fœtus)*	-
Slovenia	*1 / year*				
Spain	1 / year 5 / 5 years	100 / 5 years & 50 / year	6 / year	1 (fœtus) & unlikely >1 (woman) **	Case by case (needs CSN approval)
Sweden	1 / year	100 / 5 years & 50 / year	6 / year	1 (fœtus)	Case by case (needs SSI approval)
UK	1 / year	20 / year	6 / year	1 (fœtus) & 13/3 months (abdom. eq. dose) ***	100 / 5 years & 50 / year
International BSS (1994)	1 / year	100 / 5 years & 50 / year	6 / year	-	200 / 10 years & 50 / year (review when over 100) or 50 / year renewable 5 times
Armenia	*5 / 5 years & 5 / year*	*100 / 5 years & 50 / year*	*¼ of dose limit for cat. A workers*	-	-
Bulgaria		100 / 5 years & 50 / year			
Croatia	*1 / year*	*100 / 5 years & 50 / year*		*1 – whole pregnancy*	
Georgia	*5 / 5 years & 5 / year*	*100 / 5 years & 50 / year*	*25 / 5 years 12,5 / year*	-	-
Kazakhstan	5 / 5 years 5 / year & 70 / 70 years	100 / 5 years & 50 / year 1000 / 50 years	-		
Macedonia	*1 / year*	*100 / 5 years & 50 / year*	-	*Not allowed to work*	-
Norway	1 / year	20 / year	6 / year	1 (fœtus) **	100 / 5 years & 50 / year Needs NRPA approval
Poland	*1 /year*	*100 / 5 years & 50 / year*	*6 / year*	*1 (fœtus)*	
Romania	1 / year & 5 / 5 years	20 / year	6 / year	1 (fœtus)	Case by case (needs CNCAN app.)
Serbia	1 / year	100 / 5 years & 50 / year	6 / year		Case by case (needs authorization) Cat. A: 200 / 10 years & 50 / year
Switzerland	1 / year	20 / year	5 / year	2 (abdomen surface) & 1 when incorporated	100 / 5 years & 50 / year

Underline: situation in 2001

* in specific cases

** for the remainder pregnancy period

*** for women of reproductive capacity

ALARA NEWS

❑ **Online register for high activity sealed sources in Germany** (*G. Frasch, BfS*)

In August 2005, a law came into force in Germany for the registration of high activity radiation sources. This law transposes Guideline 2003/122/EURATOM, in which mandatory requirements for the management of such sources are placed on all Member States of the European Union. Uniform defaults are laid down for monitoring these radiation sources. The key requirement of the German law is the provision for a national register for all high activity sealed sources. The central registration of these sources guarantees that responsible supervisors as well as safety authorities can get information about type, activity, possession rule, location, etc. of all high activity radiation sources used in Germany at any time.

The registry of high activity radiation sources (HRQ Register) is operated by the Federal Office for Radiation Protection. All radiation sources in use in Germany whose activity exceeds a nuclide-specific activity at the time they were brought into operation (activity greater than 1/100 of the A1-value: e.g. Ir-192 > 10 GBq, Co-60 > 4 GBq) are listed in this register. Contents and structure of the data acquired are uniformly fixed within the European Union. The HRQ register began on-line operation on 01 July 2006. Since that time:

- Licensees can register high activity sources on-line by using secure electronic forms,
- Entitled supervisory authorities can securely examine the sources approved by them and/or place inquiries for high activity sources to the HRQ database.

In Germany, there are up to ten thousand high activity sealed radioactive sources in use. They have a broad spectrum of application; in medicine they are used predominantly in radiotherapy. The general industry uses high activity sources frequently for sterilisation of medical supplies and for non-destructive material testing, e.g. the weld seam of pipes is checked using mobile radiation sources such as Cs-137 or Ir-192. Other areas of application lie in research: e.g. where Co-60 sources are used to produce gamma radiation fields, or Cf-252 is used as neutron source.

❑ **Creation of an Independent Administrative Authority for the supervision of nuclear safety and radiation protection in France**

The Law on "Transparency and Security in the Nuclear Field" has been adopted by the French Parliament on June the 1st. It has been published on June 14, 2006.

The law transforms the former Nuclear Safety Authority into an "Independent Administrative Authority". The new authority will be headed by a Commission of 5 members (the President and 2 to be appointed by the President of the Republic, 1 by the President of the National Assembly and 1 by the President of the Senate).

The new law sets up a renewed, comprehensive and solid legislative basis for nuclear supervision (the former legislative basis for safety and radiation control in France dated back to 1961). It includes a number of provisions related to transparency in the nuclear field.

❑ **Current progress in radioactive waste management in France**

In accordance with the Law of December 30, 1991, on Research related to Radioactive Waste Management which had set the deadline of 2006 for a national strategy to be adopted, the "2006 Programme Act on the Sustainable Management of Radioactive Materials and Wastes" has been adopted by the French Parliament on June 15, 2006. It has been published on June 29, 2006.

This new Act confirms that the producers of spent fuels and radioactive waste are responsible for these substances. It requires that research and studies have to be extended for "separation and transmutation", for reversible disposal in deep geological formation (an application is foreseen in 2015, operation is foreseen in 2025) and for storage (at the latest in 2015, storage installations are to be created or modified in accordance with the needs evaluated by the future editions of the National Plan for Radioactive Material and Waste Management "PNGDR-MV").

This new Act sets up the PNGDR-MV as the national tool for waste management. This plan will be issued for the first time before the end of 2006. It will be updated every three years by the Government.

This new Act confirms that the disposal in France of radioactive waste from abroad is forbidden. It establishes the regulatory framework for repositories, and expands the missions of ANDRA (the French nuclear waste management agency). It sets legal provisions for the funding by nuclear installation licensees of decommissioning and waste management and related penalties. It also sets up public information committees.

❑ **Cavtat (Dubrovnik), Croatia 2006: 2nd RECAN Workshop:** ***The Implementation of ALARA in Medicine***

Based on the idea of European ALARA Network (EAN), in 2005 the Regional European and Central Asian ALARA Network (RECAN) has been established within the framework of the IAEA Technical Cooperation Project RER9081: Implementation of ALARA in Radiation protection through Networking. One of the common features in the life of both networks is the workshop covering a specific topic.

The IAEA in cooperation with EKOTEH dosimetry Co. Radiation Protection Zagreb, Croatia is organizing the 2nd RECAN Workshop: The Implementation of ALARA in Medicine. The Workshop will take place in Cavtat (Dubrovnik), Croatia from 18 to 20 October 2006.

This workshop is aimed at participants nominated officially by the following target countries specified in the Terms and conditions of RECAN: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Malta, Moldova, Poland, Romania, Republic of Serbia, Slovak Republic, Slovenia, Tajikistan, Macedonia, Turkey, Ukraine and Uzbekistan.

The workshop is open to 40 participants and will be held in English.

The purpose of the workshop is to exchange information on specific issues related to the topic of workshop:

- The regulation of medical exposures;
- Diagnostic reference levels and patient dose assessment;
- Occupational exposure evaluation; and
- The role and relation of medical specialists and medical physicist.

The workshop will consist of overview invited lectures, case study reports, work in groups, posters and an open session. At the end of workshop the participants are expected to prepare findings and recommendations from the workshop.

❑ NORM V: 5th International Symposium on Naturally Occurring Material – Seville, Spain

The University of Seville in co-operation with the IAEA is organising the NORM V International Conference, to be held Seville (Spain) in March 19th – 22nd, 2007. Its main objective is the dissemination of the new information and knowledge on exposures to radionuclides of natural origin in mining and other industrial operation involving NORM, including impacts associated with NORM residues and discharges. Special attention will be devoted in the conference to the following NORM topics:

- Processing and use of zircon and zirconia;
- Industrial uses of thorium;
- Production of titanium dioxide;
- Recycling of contaminated metals;
- Extraction and processing of rare earths;
- Extraction, processing and use of phosphate minerals.

More information can be found on following Web Site:
http://www.us.es/normv

❑ *New EAN Website*

A new Website has been developed for the European ALARA Network. New sections have been added - for instance, one page is now devoted to each sub-network. Moreover, a section is dedicated to radiological incidents and lessons learned, which have been published in the Newsletters. Finally, a Forum has also been developed with the objective of promoting information exchange between the members of the EAN. A direct link can be found on the EAN Website.

The address of this new Website is:
http://www.eu-alara.net

The 18 EUROPEAN ALARA NETWORK Contact Persons

- **AUSTRIA**

Mr Thomas GERINGER
Austrian Research Centers Seibersdorf, Department of Medical Physics A-2444 SEIBERSDORF
Tel: +43 50550 3030; Fax: +43 50550 3033
E-mail: thomas.geringer@arcs.ac.at

- **BELGIUM**

Mr Fernand VERMEERSCH
SCK/CEN, Boeretang 200, B-2400 MOL
Tel: +32 14 33 27 11; Fax: +32 14 32 16 24
E-mail: fvermeersch@sckcen.be

- **CROATIA**

Mr Mladen NOVAKOVIC
Radiation Protection, EKOTEH Dosimetry,
Vladimira Ruzdjaka 21, 10000 ZAGREB
Tel: +385 1 604 3882; Fax: +385 1 604 3866
E-mail: mlnovako@inet.hr

- **CZECH REPUBLIC**

Mr Jan KROPACEK
SUJB - State Office for Nuclear Safety,
Syllabova 21, CZ-730 00 OSTRAVA
Tel: +420 596 782 935; Fax: +420 596 782 934
E-mail: jan.kropacek@sujb.cz

- **DENMARK**

Mr Jens SØGÅRD-HANSEN
Danish Decommissioning
Fredriksborgvej 399, DK-4000 ROSKILDE
Tel: + 45 46 77 43 03; Fax: + 45 46 77 43 43
E-mail: jens.soegaard@dekom.dk

- **FINLAND**

Mrs Maaret LEHTINEN
STUK – Radiation Practices Regulation
Laippatie 4, FIN-00880 HELSINKI
Tel: +358 9 75988244 Fax: +358 9 75988248
E-mail: maaret.lehtinen@stuk.fi

- **FRANCE**

Mr Claude BARBALAT
ASN, BP 83, Route du Panorama Robert Schuman
92266 FONTENAY AUX ROSES CEDEX
Tel: +33 1 43 19 71 72; Fax: +33 1 43 19 70 69
E-mail: claude.barbalat@asn.minefi.gouv.fr

- **GERMANY**

Mrs Annemarie SCHMITT-HANNIG
BfS – Bundesamt für Strahlenschutz, Fachbereich Strahlenschutz und Gesundheit, Ingolstädter
Landstrasse 1, D-85764 OBERSCHLEISSHEIM
Tel: +49 1888 333 2110; Fax: +49 1888 333 2115
E-mail: aschmitt-hannig@bfs.de

- **GREECE**

Mrs Vassiliki KAMENOPOULOU
Greek Atomic Energy Commission (GAEC)
P.O. Box 60092, 15310 AG-PARASKEVI, GREECE
Tel: +30 210 6506731; Fax: +30 210 6506748
E-mail: vkamenop@gaec.gr

- **IRELAND**

Mr Stephen FENNELL
Radiological Protection Institute of Ireland,
3 Clonskeagh Square, Clonskeagh Road, DUBLIN 14,
Tel: +353 1 206 69 46; Fax: +353 1 260 57 97
E-mail: sfennell@rpii.ie

- **ITALY**

Mrs Serena RISICA
ISI – Technology and Health Department
Viale Regina Elena 299, I-00161 ROME
Tel: + 39 06 4990 2203; Fax: +39 06 4938 7075
E-mail: serena.risica@iss.it

- **THE NETHERLANDS**

Mr Jan VAN DER STEEN
NRG Arnhem, Utrechtseweg 310, P.O. Box 9035,
NL-6800 ET ARNHEM
Tel: +31 26 3568570; Fax: +31 26 4423635
E-mail: vandersteen@nrg-nl.com

- **NORWAY**

Mr Gunnar SAXEBØL
Norwegian Radiation Protection Authority, Grini Naeringspark 13, Postal Box 13, N-1345 ØSTERÅS
Tel: +47 67 16 25 62; Fax: +47 67 14 74 07
E-mail: gunnar.saxeboel@nrpa.no

- **PORTUGAL**

Mr Fernando P. CARVALHO
Instituto Tecnologico e Nuclear
Estrada Nacional 10, P-2686-953 SACAVEM
Tel: +351 21 994 62 32; Fax: +351 21 994 19 95
E-mail: carvalho@itn.mces.pt

- **SPAIN**

Mrs Carmen ALVAREZ
CSN, Justo Dorado 11, E-28040 MADRID
Tel: +34 91 346 01 98; Fax: +34 91 346 05 88
E-mail: cag@csn.es

- **SWEDEN**

Mrs Birgitta EKSTRÖM
SSI - Swedish Radiation Protection Authority,
S-171 16 STOCKHOLM
Tel: +46 8 729 7186; Fax: +46 8 729 7108
E-mail: birgitta.ekstrom@ssi.se

- **SWITZERLAND**

Mr Nicolas STRITT
Swiss Federal Office of Public Health, Radiation Protection Division, CH-3003 BERN
Tel: +41 31 324 05 88; Fax: +41 31 322 83 83
E-mail: nicolas.stritt@bag.admin.ch

- **UNITED KINGDOM**

Mr Peter SHAW
HPA – Health Protection Agency, Occupational Services Dept., Radiation Protection Division
Hospital Lane, Cookridge, LEEDS – LS166RW
Tel: +44 113 267 9629; Fax: +44 113 261 3190
E-mail: peter.shaw@hpa-rp.org.uk

10th European ALARA Network Workshop on

"Experience and new developments in implementing ALARA in occupational, public and patient exposures"

Marie Curie - Sklodowska

http://alara06.jaderne.info/

September 12 - 15, 2006

Czech Republic
Prague, Brehova 7, 115 19

Pra ha
Pra gue
Pra ga
Pra g

10th European ALARA Network Workshop
"Experience and new developments in implementing ALARA in occupational, public and patient exposures"
Prague 12th- 15th September 2006

LAST ANNOUNCEMENT

Introduction

Previous EAN workshops have focused on the optimisation principle in specific circumstances, for example for a specific work sector or particular types of exposure. The subjects have been chosen to reflect areas with potential for the further development and implementation of the concept of ALARA.

This is the 10-year anniversary of the EAN Workshops, and the aim is to consider the optimisation principle as a whole. This principle is fundamental to radiation protection, and the workshop aims to draw together key stakeholders to discuss its past, present and future status. In particular, the workshop will consider the practical implementation of ALARA, and how this might be improved in the next 10 years.

Objectives

The main objectives of the 10th EAN workshop are to:

- Review the past evolution of the ALARA concept, internationally, within the EU, and nationally, in terms of the practical impact on radiation protection;
- Examine the current status of the implementation of the ALARA principle; and
- Identify needs for future developments in the concept and implementation of optimisation.

Place

The Workshop will take place at **Prague University in the Faculty of Nuclear Sciences and Physical Engineering** (Brehovà 7, CZ-115 19 Prague 1).

Fee and registration

The attendance fee will be **400 €** (documentation is included)**.**

You have to register on-line on the 10th Workshop Web Site
http://alara06.jaderne.info

10th European ALARA Network Workshop
"Experience and new developments in implementing ALARA in occupational, public and patient exposures"
Prague 12th- 15th September 2006

PRELIMINARY PROGRAMME

Tuesday 12 September 2006

Welcome address - SONS, EAN (15 min)

SESSION 1: INTRODUCTION ANS SCENE SETTING - *Chair: D. Drabova (SUJB), K. Mrabit (IAEA)*

Evolution of ALARA in Europe from the 80s to the next decade
C. Lefaure (EAN), J. Croft (HPA), A. Janssens, K. Schnuer, N. Kelly (EC) (60 min)

Survey on Implementation of Optimisation in National Regulations in Europe
P. Croüail, F. Drouet (CEPN) (30 min)

Optimisation in ICRP Recommendations - New Developments broadening the Process
L.E. Holm, W. Weiss (ICRP) (40 min)

IAEA Perspective on Implementation of ALARA Principle
K. Mrabit, P. Deboodt (IAEA) (30 min)

Wednesday 13 September 2006

SESSION 2: IDENTIFYING NEEDS FOR FUTURE DEVELOPMENTS – *Chair: J. Croft (HPA)*

Justification and Optimisation in Radiation Protection: Which one is first?
M. Bourguignon (DGSNR) (30 min)

The Success of the ALARA Principle - the View of an Inspector
P. Hofvander, I. Lund (SSI) (30 min)

A transdisciplinary approach to education and training in radiological protection and ALARA
G. Meskens (30 min)

German - Lessons Learned from Hearings in Radiological Risk Management, Limits and Problems, with stakeholder involvement
V. Kunze (BfS) (15 min)

Results of OECD/NEA Working Groups on Stakeholder Involvement
B. Ahier (OECD/NEA) (15 min)

Lessons learned from post Chernobyl Measures and Stakeholder Involvement in Norway
L. Skuterud (15 min)

Local Communities Projects for Stakeholders Involvement in Radiological Risk Management
D. Klein (France) (15 min)

Introduction to an Holistic Approach including Radiological Protection
S. Niu (ILO), M.H. Repacholi (WHO), P. Deboodt (IAEA) (15 min)

Holistic Approach for Risk Management with Regards to Public Doses from Discharges
B. Morley (BNG) (15 min)

Working Groups

Thursday 14 September 2006

SESSION 3: ALARA IMPLEMENTATION PROBLEMS TO BE SOLVED IN DIFFERENT AREAS – ***Chair: S. Mundigl (EC)***

Introduction to Occupational Exposures Trends and Problems to be solved: European Studies on Occupational Radiation Exposures - ESOREX
K. Petrova (SUJB), G. Frasch (BfS), K. Schnuer (EC) (20 min)

Introduction to Public Exposures Trends and Problems to be solved
M. Crick (UNSCEAR) (20 min)

Introduction to Patient Exposures Trends and Problems to be solved
B. Wall (HPA) (20 min)

Quality Control and Optimisation of Patient Doses and Image Quality in the Norwegian Mammography Screening Programme
K. Pedersen, G. Saxebøl (NRPA) (15 min)

Training and Culture Problems to be solved in the Medical Area for improving ALARA Implementation
J. Armas (EFOMP) (15mn)

Role of Medical Radiographers and Technicians in ALARA Implementation (*title to be confirmed)*
D. Katsifarakis (ECRRT) (15mn)

ALARA from the decommissioning to the design stage in the nuclear field
V. Massaut (EFDA) (20 min)

ALARA Principles in NDT: Reduction of Radiation Exposure by Modern Method and Detection
U. Ewert, et all (EFNDT) (20 min)

ALARA and NORM: Problems to be solved
P. Shaw (HPA), J. Van der Steen (NRG) (15 min)

The Role of the Regulatory Body in ensuring that the ALARA Principle is Implemented in Practice
S. Fennell (RPII), N. Stritt (SFOPH), G. Thomas (HSE) (15 min)

EAN Sub-Network on Research Reactors
C. Joly (CEA) (15 min)

Working Groups

Friday 15 September 2006

SESSION 4: CONCLUSIONS AND RECOMMENDATIONS - ***Chair: P. Shaw (HPA), P. Croüail (CEPN)***

Reports from the rapporteurs

Final conclusions and recommendations