



**European
ALARA
Network**

ALARA NEWS AND ALARA INFORMATION IN EAN MEMBER COUNTRIES

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This document summarizes the main events dealing with ALARA in EAN Member countries discussed at the occasion of the May 2009 Steering Group meeting.



1/ The French Nuclear Safety Authority (ASN) evaluated by 12 international experts coordinated by the International Atomic Energy Agency (IAEA)

The French Nuclear Safety Authority (ASN), at its request, had an “Integrated Regulatory Review Service” (IRRS) international audit mission conducted from 29 March to 3 April 2009. This mission concluded that the ASN has taken effective measures to meet the recommendations and suggestions of the international guidelines and consolidates the ASN’s position with regard to international best practices in the areas of nuclear safety and radiation protection.

This IRRS mission, coordinated by the International Atomic Energy Agency (IAEA), was carried out by twelve experts from the nuclear safety authorities of Germany, Argentina, Australia, Belgium, Canada, Spain, the United States, Finland, Japan, New Zealand, the United Kingdom and Sweden. The auditors evaluated the solutions in use along with their implementation in meeting the recommendations and suggestions put forward in 2006 during the previous audit of all ASN sectors: the monitoring of nuclear reactors, research facilities, the medical profession, radiation protection of workers, etc. in each of its professional areas: regulation, monitoring and the provision of information.

At the conclusion of their mission, the international experts concluded that the ASN had satisfactorily met 90% of the recommendations and suggestions put forward in 2006. They also highlighted the ASN’s good practices, in particular:

- its international role in improving nuclear safety and radiation protection,
- the relations it has built at the national level to ensure efficient monitoring of nuclear safety and radiation protection,
- the effective implementation of measures set out by the law relating to nuclear-related transparency and security.

Some areas requiring improvement were identified, particularly in relation to management of ASN human resources, follow-up of assessments carried out by the Institute for Radiation Protection and Nuclear Safety (IRSN) in support of the ASN, and the action plan to be implemented when the ASN assumes responsibility for monitoring the security of sources.

2/ Industrial radiography: end of December 2008, publication of the French Society for Radiation Protection (SFRP) which presents the common recommendations of SFRP, ASN (French nuclear safety authority) and French Society of Non-destructive Testing (COFREND)

This publication ended a long process which begun in May 2005 when ASN urged professionals of industrial radiography to define, on a national level, rules of good practice for preparing and setting up sites.

To guarantee the relevance of this work, COFREND committed itself to this process, with the help of experts from the French Society for Radiation Protection (SFRP). Given the scale of the

project, nine working groups were formed, each one responsible for a particular theme (*regulation, experience feedback, training, equipment, dosimetry, job analysis, self-assessment guide, division of responsibilities, transport*).

After this publication, to ensure the consistence of national and regional projects, assess their impact on health and safety and oversee their implementation, taking into account technological and regulatory change in particular, the ASN together with the Labour Ministry is part of the monitoring committee, bringing together key figures in the area of prevention in industrial radiology.

3/ Contaminated metal: the emergence of a generic issue

Following the case of MAFELEC OTIS of October 2008, which represents the first French importation of contaminated metal, four new cases of discovery of contaminated product from recycled metals received from India emerged in France. Even if the contamination levels found were not likely to expose persons to significant levels in terms of radiation, the ASN (French nuclear safety authority) is concerned about this issue.



FINLAND - STUK



IRPA 2010

The second announcement of the third European IRPA Congress and the call for abstracts has been released. The congress will be held at Finlandia Hall in Helsinki in 14 -18 June 2010. More information: www.irpa2010europe.com

ICRP 103

Publication ICRP 103 has been translated in Finnish. STUK has organised a refresh course about the recommendations and the other one will be held in May. The lectures were focused on changes from the publication ICRP 60.

Survey about radiation protection training given to radiation safety officers

The survey focused to the content and diversity of radiation protection training given to radiation safety officers was made by STUK in 2008. The results were presented in a seminar organized in May 2009 where educational organizations giving radiation protection courses for radiation safety officers were able to discuss of the results in small groups.

Main results of the survey were that there are some educational organizations giving training which does not meet the requirements. Content or amount of the training is not as expected and/or a practical training is not included in all courses. It was also found differences in weighting of training content, in course materials and criteria for passing the exam.

Incident in use of radiation: woman was accidentally exposed to X-rays while scanning the lorry in Vaalimaa frontier station (between Finland and Russia)

A woman was accidentally exposed to X-rays while scanning a lorry in Vaalimaa frontier station. This happened while inspected the incoming traffic. The driver's wife was in the lorry during the scanning. The radiation dose for the woman was about 50 μ Sv.

The lorry driver and his wife had gone to the passport control of the frontier station as normal. The lorry driver was also issued to Customs the form in which he asserted that there is no people or living animals in the vehicle.

The incident was reported to the STUK and Customs also gave a press release about it. The Customs will reassess the practices at all the frontier stations and take appropriate action to ensure the safety.



GERMANY - BfS



Bundesamt für Strahlenschutz

- Principles of the realistic estimation of the radiation exposure of the public: BfS proposed a graded approach for the retrospective estimation of public exposures due to releases, where radioecological models of different levels of conservativity are used depending on the level of radiation exposure in order to optimise resources.
- The national register of high-activity sealed radiation sources is operating very well. The data bank is now containing information on 14430 HASS sources. On the basis of the experience gained in the last 2 years, software improvements were developed and are being tested.
- BfS organised an International Workshop on “Operation of a National Register of High-Activity Sealed Radioactive Sources” which took place 9-11 March 2009 in Berlin. This was a follow-up of the workshop “Implementation of the CoC and the EU (HASS) Directive on the Safety and Security of High-Activity Radioactive Sources - Operation of a National Register“ in December 2007 in Munich. The objective was an exchange of information and experience between institutions which are in charge of the operation of a national HASS register. IAEA and EC were also represented.
- Operation of the national radiation protection register: on the basis of a BfS initiative, the specification of work categories could be improved. The indication of the category “others” could be reduced from 20 to 10%.
- Contaminated stainless steel from India: Since August 2008 the discovery of Co-60 contaminated stainless steel raw materials and end products was repeatedly reported to the Federal Ministry of Environment. The steel was produced at a melting company in India. A number of European countries are affected. In Germany, about 180 tons of steel contaminated with Co-60 up to 600 Bq/g have been found up to now. The steel is kept under control until the different disposal possibilities are investigated. The objective is to prevent the gradual increase of contamination in the environment. Model calculations for a person in a room show that at an activity level of 10 Bq/g (exemption level of European Basic Safety Standards) a dose of above 1 mSv per year could be reached (realistic scenarios: cook in kitchen, machinist in ship or worker in industry surrounded by contaminated stainless steel). Due to melting of radioactive sources over the past decades, the overall radioactivity level of steel/metal is not “zero“. Therefore, it is important to

define a “free of contamination“ level as a basis for further actions. In practice, standardised measuring methods with capability for high quantities are required. At a meeting of the International Nuclear Regulators Association (INRA), the Federal Ministry of Environment (BMU) proposed the definition of a product standard for "free of contamination"-metals (e.g. ISO). Other actions of regulators should be:

- to establish a system where it is the obligation of manufacturer to guarantee contamination-free products
 - to enhance sample checks at EU borders combined with high penalties
 - to assess the current status of the implementation of controls as given by the Code of Conduct on the Safety and Security of Radioactive Sources incl. the Guidance on the Import and Export of Radioactive Sources
 - to set up a quick information exchange system (international)
 - to define procedures for standardised handling of findings within the EU -> reshipment to producer
- Electronic personal dosimeters (EPD) will be accepted as “official” dosimeters for all non-pulsed radiation fields. In pulsed radiation fields, such as produced by x-ray units, EPD are not reliable enough. Until the technical problems are solved, other dosimeters have to be used (for example TLD).
 - Establishment of a national network on biological dosimetry: It is important to identify a number of laboratories which would be able, in case of a radiological or nuclear event, to carry out analysis of dicentric chromosomes. Interested laboratories will be trained and certified by BfS.
 - The postulated dose reduction of the SHARPVIEW-Software (Swedish development which can be installed in each CT unit) has not yet been proved by clinical studies (only with phantoms). There are also other methods, mainly from CT producers, to reduce doses to patients. BfS is going to update the diagnostic reference values (in most cases the values will decrease significantly) in the next months. This will force users of old equipment to take measures for dose reduction or use new equipment.
 - PET/CT units: shielding thickness calculation from producers were found be insufficient. The calculations were based on 6 mSv/a for staff in operating rooms, should be done on the basis of 1 mSv/a like it is the case for linacs. It is requested that shielding thickness calculations have to be checked before new radioisotopes are used.



GREECE - GAEC



Completion of the project entitled "Strengthening the Capacity of the Radiation Protection and Nuclear Safety Regulatory Authority of Cyprus", Republic of Cyprus, European Commission, 2007-2008.

GAEC has completed successfully the project entitled "Strengthening the Capacity of the Radiation Protection and Nuclear Safety Regulatory Authority of Cyprus". The project aimed at the improvement, the enforcement and strengthening of the operational and administrative capabilities of the Cypriot Competent Authority and the collaborative institutions in Cyprus, in alignment with the EURATOM and IAEA standards.

It has to be emphasized that the GAEC and the Cypriot Competent Authority has proceeded in a bilateral agreement for cooperation in radiation protection issues considering the accomplishments of the aforementioned project.

2. Individual monitoring conference of ionizing radiation, Athens, 8-12 March 2010

The main goal of the conference is to assist the harmonization of practices in individual monitoring across Europe, with the aim of the mutual recognition of the results of dose assessments. The programme consists of oral and poster sessions. Invited lectures will be given by eminent speakers. The programme is separated into the following main topics:

- Implications of the forthcoming EU Council Directive and IAEA BSS,
- New technical recommendations for monitoring individuals occupationally exposed to external radiation,
- Intercomparisons and performance/type tests,
- Harmonization actions of individual monitoring,
- Operational requirements for active personal dosimeters,
- Quality assurance,
- Particular applications of individual monitoring (e.g.: medical applications, radiological emergency),
- Improvements for external and internal dose assessment,
- Uncertainties in dose assessment,
- Environmental dosimetry for individual dose evaluation (e.g. Rn, aircrew, NORM),
- Radiation field characterization for individual dose assessment.

The conference will be organized by the Greek Atomic Energy Commission, under the auspices of the European Commission and in co-operation with EURADOS and IAEA.

3. Participation of the GAEC in the IAEA's Regional project RER093 "Strengthening Radiological Protection of Patients and Medical Exposure Control"

The GAEC participates in the IAEA's Regional project RER093 "Strengthening Radiological Protection of Patients and Medical Exposure Control". The project consists of seven tasks. The GAEC participates in the following tasks:

- Avoidance of radiation injuries in interventional procedures using X-rays and limiting probability of stochastic effects, especially in children,
- Patient dose management in computed tomography with special emphasis to pediatric patients,
- Survey of mammography practice from the optimization of radiation protection viewpoint, and optimization in mammography,

4. Organization of a training course on Radiation Protection in PET/CT procedures

The GAEC in cooperation with the IAEA works toward the organization of a training course dedicated to radiation protection in PET/CT procedures for medical doctors, technicians and medical physicists employed in PET laboratories. The course will be organized under the framework of the IAEA's Regional project RER093 "Strengthening Radiological Protection of Patients and Medical Exposure Control" and it will be held in Athens.

5. Enrichment of the National Radiation Protection Database

The National Radiation Protection Database kept by the GAEC was enriched with information concerning the transport and distribution of radioactive materials (including radiopharmaceuticals) in the whole national territory.

6. Definition of dose constraint for non-occupationally exposed workers to ionizing radiation

The GAEC issued a circular for the definition of a dose constraint value for non-occupationally exposed workers in the public sewage system and waste water treatment plants due to the release of patient's excreta from I-131 therapy wards.



IRELAND - RPII



Radiological Protection Institute of Ireland
An Institiúid Éireannach um Chosaint Raideolaíoch

1. A new government inter-departmental working group has been established to examine the recommendations of the recent RPII report on the requirements for iodine holding tanks in hospitals carrying out iodine ablation therapies. The working group will complete its work before the end of the year with a view to determining a national policy for Ireland on the requirement for holding tanks in both existing and new facilities.
2. Ireland currently does not have an interim or long-term storage facility for the management of radioactive waste. A high level Government inter-departmental working group has now been set up to consider management options for radioactive waste, including storage facilities. This group will report to Government in late 2009.
3. The RPII is due to publish a new code of practice for the design of diagnostic medical facilities using sources of ionising radiation. The new 100-page publication is aimed at Radiation Protection Advisers (Qualified Experts), architects, engineers and anybody else involved in the design of new medical facilities. The new code is available for download from the RPII's website from June 2009:
<http://www.rpii.ie/Licensing/Regulation-and-Guidance/Regulation-and-guidance-documents.aspx>
4. The RPII has also published a Guidance Note on the Implementation of the Radiological Protection Act 1991 (Control of High Activity Sealed Radioactive Sources) Order 2005 (S.I. No. 875 of 2005) which is explicitly included in the conditions attached to each HASS licence:
<http://www.rpii.ie/Licensing/Regulation-and-Guidance/Regulation-and-guidance-documents.aspx>
5. Inspectors in the RPII's regulatory service have recently undergone both basic ADR and Class 7 specialisation training for drivers. This new training initiative for inspectors should lead to a greater understanding by inspectors of the practical issues for consignors, carriers, drivers etc. involved in the safe transport of radioactive material.



ITALY - ISS



On 17th December 2008, the Istituto Superiore di Sanità (ISS, National Institute of Health, advisory body for the Minister of Health) organised the international workshop *Depleted uranium research: an update*, the sequel to a first workshop on the subject held in October 2004. The ISS's interest in this issue is due to the request made by the Minister to continue the research into the potential association between cancer incidence and exposure to DU. Indeed, in 2002 a statistically significant excess of Hodgkin's lymphoma was observed among the Italian peacekeeping forces who had been deployed in the Balkans (see e.g. Nucetelli C., Grandolfo M., Risica S. (2005). *Depleted uranium: possible health effects and experimental issues*, Microchemical Journal, 79:331-335). The Workshop was an opportunity to share new scientific research results and research prospects, as well as future activity programs. Key issues were epidemiological studies on exposed personnel, studies of the biological effects of DU, and environmental and biological monitoring. The programme of the workshop, the abstracts and the slides of the presentations – where made available by the authors – can be found at: <http://www.iss.it/tesa/even/cont.php?id=197&lang=1&tipo=8>. At this website the workshop summary is written in Italian, in compliance with a request of the Health Minister to keep Italian population updated about the DU issue, but abstracts and slides are in English.

In April this year, the *Institute for Environmental Protection and Research* completed the document setting forth the technical basis for the emergency planning of radioactive or fissile material transport - contemplated by the Italian law transposing Directive 96/29. About to be transmitted to the Presidency of the Cabinet of Ministers, this document will be a guide for the local authorities to elaborate their local emergency plans to protect population health and implement good safety. Specifically, the report contains: 1) a review of the national and international legislation in the field; 2) a statistical representation of the transport of radioactive material in the country in the years 2005-2007; 3) possible accident scenarios in transportation for the main routes used; 4) assessments of the radiological consequences of the identified scenarios; 5) description of the equipment for the detection of environmental radioactivity; 6) operative indications for the emergency planning.



NORWAY - NRPA



Statens strålevern
Norwegian Radiation Protection Authority

Work in connection with revision of the basic regulation for radiation protection and use of radiations has been going on for a several years, and drafts are now being circulated for comments. The former basic regulations have been split into two regulations: one for radiation protection and one for environmental protection. The environmental regulation contains a number of nuclide-specific tables, defining various exemption and clearance levels a.o. The revised radiation protection regulations are tightened on several points. Stricter requirements for medical screening programs are introduced, and the issue of self referral has been addressed. Also stricter requirements for radon concentrations in schools and kindergartens are suggested. Concerning non-ionising radiation, the most dramatic change refers to the introduction of 18-year limit and staffing requirements for tanning studios. Both regulations are planned to come into force from July 1st 2010.

In 2008 hospitals all over Norway were required to report local reference levels and activities within X-ray diagnostics and nuclear medicine. These data are now being analyzed, and revised

national reference levels will be prepared. For some examinations the national levels will be reduced.

In parallel to collecting patient dose values, the Norwegian radiation protection authority has also started collecting frequency data for X-ray examinations. Together with the collected dose information, the frequency data will be used for updating current values for per caput doses from medical diagnostics.



SPAIN - CSN



In March 2009, CSN organized a meeting about “Quality in the control of environment radiation” in Jaca (Spain).

CSN approved in May 2009 the guide about “Onside Emergency Plan for radioactive facilities”.

The FORUM concerning Radiological Protection Units (UTPR) began in December 2008 to encourage the dialogue in order to improve safety and radiological protection in the different practices and to favour the communication between regulators and stakeholders. Two working groups have been created, about:

- Elaboration of a model of contract in order to establish the relationship between the Radiological Protection Units and the facilities and to define the functions and liability of each part.
- Technical and human means for the Radiological Protection Units and the harmonization of technical criteria

CSN participated in the working group “Stakeholders involved in medical applications”, organized for Heads of European Radiation Control Authorities in Paris (May 2009).

In February 2009 CSN took part in “Permanent Group of Experts” of French Authority (ASN), group of medicine, and working group about interventional radiology.

CSN participated in INES Advisory Committee Meeting, organized by IAEA (Vienna, February and April 2009).



UK - HPA



1. In April 2009, HPA published an atlas of radon in homes in Scotland (HPA-RPD-051). The report brings together all the data held in the UK national radon database on radon levels in Scottish dwellings. It updates previous reports and presents the first complete radon probability map for the whole of Scotland including the inhabited off-shore islands.

Data from radon measurements in over 19,000 Scottish dwellings are presented in tabular format by local authority and by various divisions of the postcode system. A number of Radon Affected Areas are identified on the maps. It is recommended that a phased programme should be undertaken in the higher probability areas with the twin objectives of identifying homes with high radon levels and encouraging owners and landlords to reduce such levels. The full report can be downloaded from:

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1240386976401?p=1197637096018

2. The lift buttons containing Co-60 contamination were all identified and removed by early 2009. Since then, a small number incidents involving other steel articles (for example, valves) have also been reported. The source of the contaminated steel is thought to be India, and these incidents have been dealt with by the users, in consultation with UK regulatory authorities and HPA. Discussions have been held with Indian authorities to agree protocols for accepting future batches of steel products.
3. The UK is undertaking a review of the current regulatory arrangements for licensing, exemption and clearance. This review includes both artificial radionuclides and NORM, and will take account of the latest EC and IAEA publications in this area. A series of seminars have been held by the lead regulatory authority to obtain views from different stakeholders, especially source users and licensees. It is intended that proposals for a revised regulatory system will be published for consultation later in 2009.
4. HPA has published guidance on the Protection of Pregnant Patients during Diagnostic Medical Exposures to Ionising Radiation (RCE 9). The document provides information on the health effects that are likely to occur in the embryo or fetus following exposure to ionising radiation during pregnancy, and practical guidance on how and when to prevent or reduce unnecessary fetal exposures when pregnant women are referred for diagnostic medical procedures involving X-rays or radionuclides. It is a revision of the guidance first produced in 1998 by NRPB, the Royal College of Radiologists (RCR) and the College of Radiographers (CoR). The full publication can be downloaded at:
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1238230848780?p=1199451989432
5. The first meetings of Organisation and Programme Committees for IRPA13 (Glasgow, 13-18 May 2012) were held in Glasgow in February 2009. With respect to EAN, Peter Shaw (UK) and Alfred Hefner (Austria) are members of the Programme Committee. The main themes of IRPA13 will be “Living with Radiation” and “Engaging with Society” which will include reviewing the implementation of the guiding principles for stakeholder engagement developed by national societies.
6. HPA has published a report on High Dose Radiation Effects and Tissue Injury (RCE 10). The report reviews the scientific and medical evidence of the effects of exposure to high doses, and the associated health detriment. It also considers the available treatments and other actions available to ameliorate such effects. Uniquely the report also considers the psychological effects - in both the exposed and those who may be called upon to treat them. The full report can be downloaded at:
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1237362785060?p=1199451989432

7. HPA has also published Radiological Protection Objectives for the Land-based Disposal of Solid Radioactive Wastes (RCE 8). The purpose of this document is to provide advice, in particular to government departments, on the radiological protection objectives to be applied to the disposal of all types of solid radioactive waste, including wastes arising in gaseous or liquid form which will be converted to solid form prior to disposal. The full report can be downloaded at:

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1234946178394?p=1199451989432