



European ALARA Network

EAN ADMINISTRATIVE BOARD AND STEERING GROUP MEETINGS AGENDA 20TH JUNE 2013

*The Meetings will take place at CEPN (28 rue de la Redoute – 92260 Fontenay aux
Roses).*

It will start at 9.00 am and will end at 16.00.

ADMINISTRATIVE BOARD MEETING

AB Members

- 1/ Financial aspects:
 - Discussion on the 1st provisional accounts for 2013 *N. Stritt + AB Members*
- 2/ Renewal of the Bureau *F. Vermeersch*
- 3/ Other business (if any) *AB Members*
Partnership with OPERRA: resources and financial support *A. Schmitt-Hannig & AB Members*

STEERING GROUP MEETING

- 3/ Round table on the main recent events dealing with ALARA in each country (ALARA News) *All*
- 4/ Review of the EAN Strategic Plan for 2010-2015: Done and To Do actions (identification of national and international 2013-2015 events, cornerstones and deadlines with respect to the EAN work programme)
 - 15th EAN/5th EUTERP Workshop (Rovinj, May 2014):
Organisation *M. Novakovic*
Programme *F. Vermeersch*
 - 16th EAN Workshop: Topic and Location *All*
 - EAN is an ICRP Special Liaison Organisation *P. Croüail*
 - Research: Partnership with OPERRA (look at Strategic Research Agendas in MELODI, ALLIANCE, NERIS, facilitation and advice ... *A. Schmitt-Hannig & All*
 - Next Newsletters: Issue 33 (September 2013) *S. Andresz & All*
- 5/ EMAN recent developments *A. Schmitt-Hannig*
- 6/ Information on the European projects:
 - TRASNUSAFE *P. Croüail*
- 7/ Information and discussions on EAN sub-networks and working groups:
 - ERPAN recent and foreseen activities *S. Fennell*
- 8/ Other business
 - Incident report (via OTHEA) *All*
 - Presentation of the ALARA Book *C. Schieber*



European ALARA Network

EAN Steering Group Meeting

20th June 2013

ALARA NEWS AND ALARA INFORMATION IN EAN MEMBERS COUNTRIES

This document summarized the main events dealing with ALARA in EAN Members countries discussed at the occasion of the 20th June 2013 Steering Group meeting.

France – ASN	3
Ireland – RPII	8
Italy – ISS	9
Norway – NRPA	10
Slovenia – SRPA	11
Switzerland – OFPS	13
United Kingdom – HPA	14

FRANCE – O. GUZMAN (ASN)

Nominations and general topics

ASN presents its 2012 Annual Report to the French Parliament (April 2013)

On 16 April 2013, Pierre-Franck Chevet, Chairman of ASN, tabled the 2012 Annual Report before the Parliamentary Office for the Assessment of Scientific and Technical Options (OPECST). Concerning the nuclear safety in France, 2012 year has remained on the whole relatively satisfactory. ASN nonetheless underlines the need to continue with permanent improvement of nuclear safety and radiation protection, demanding increased efforts on the part of the licensees and more stringent inspections. Abstracts of the ASN annual report on the state of nuclear safety and radiation protection are available [here](#) (English version).

Pierre-Franck Chevet is appointed ASN Chairman & Margot Tirmarche is appointed ASN Commissioner (November 2012)

Pierre-Franck Chevet is appointed Chairman of ASN by decree of the President of the Republic dated 9 November 2012, for a period of 6 years. He succeeds André-Claude Lacoste who was appointed Chairman of ASN in 2006 and whose mandate expires on 12 November 2012.

Margot Tirmarche is appointed ASN Commissioner by decree of the President of the Republic dated 9 November 2012, as the member designated by the President of the National Assembly, for a period of 6 years. She succeeds Marie-Pierre Comets, appointed ASN Commissioner in 2006 and whose mandate expires on 12 November 2012.

Incidents in nuclear facilities

[Accidental exposure of a worker exceeding annual regulatory limit to the skin during a planned outage at unit 4 of “Le Blayais” NPP in France \(April 2013\)](#)

On 24 April 2013, there has been an accidental exposure of a worker from a contractor of the operator EDF. At the radiological checkpoint before leaving the controlled zone, a worker has detected radioactive contamination in the neck area. He was previously performing some scrubbing operations on several materials. Decontamination of the worker has been performed. During this procedure, a radioactive particle has been found and immediately removed. The whole body dose received and the dose to the skin in the neck have been assessed. The exposure level of the worker didn't justify any specific medical treatment, he was nevertheless monitored as a preventive measure

ASN has conducted an inspection at the Le Blayais NPP on 26 April 2013. ASN inspectors have checked that EDF and its contractor have taken the required actions for the medical monitoring of the worker and the root causes analysis of this incident. Owing to the exceeding of the dose annual regulatory limit¹, EDF proposed the event to be rated at level 2 on INES scale. ASN confirmed the incident rate at level 2.

ASN rates at level 2 an incident on FBFC Romans (January 2013)

On September 26th 2012, the company FBFC (subsidiary of AREVA) notified ASN of an event related to non-compliance with the requirements applicable to packaging, storage and on-site transfer of wet fissile materials within its nuclear fuel fabrication facility in Romans-sur-Isère (Drôme).

ASN announced that this event has been finally rated at the level 2 of the INES scale.

Post accidental Management

ASN publishes the first policy elements of a national doctrine for nuclear post-accident management (June 2013)

Work was started in 2005 under the supervision of ASN, to enable the public authorities to define a strategy for dealing with the health, social and economic consequences of a nuclear accident. They led to the publication of the first policy elements of a national doctrine for post-accident management in areas contaminated by releases from a damaged facility.

Under the terms of a mandate given by Interministerial Directive[1], ASN from 2005 to 2012 set up and chaired a steering committee to establish post-accident management doctrine in the event of a nuclear accident or radiological emergency situation (CODIRPA). This was done with the active participation of the various stakeholders, including the main ministerial departments concerned, the technical organisations such as IRSN and INVS, the associations, elected officials and nuclear facility licensees, and with the assistance of international expertise.

The elements of the first national doctrine were established on the basis of nuclear accidents leading to short-duration radioactive releases (less than 24 hours). These elements are in themselves an original contribution at the international level, in that they cover the entire post-accident phase: the first days following the radioactive releases, the initial months (known as the transition period) and the first years following the accident (long-term period). They also meet 3 inseparable objectives, aimed at:

- To protect the populations against the dangers of ionising radiation;
- To provide support to the population victim of the consequences of the accident;
- To recover the affected territories, in economic and social terms.

In agreement with the various stakeholders involved in the work of the CODIRPA, the report containing the policy elements of the doctrine has been posted on the ASN website, along with all the technical reports drafted by the CODIRPA and transmitted to the Government by ASN.

In the opinion which accompanies this publication[2], ASN draws the Government's attention to the fact that the publication of these initial elements of the national doctrine is a first and important step in preparing for nuclear post-accident management, but that it

¹ In France, the annual regulatory dose limits for occupational exposure for twelve consecutive months are 20 millisieverts for the whole body and 500 millisieverts (average value per 1 cm² skin surface).

must be continued and intensified in order to ensure that it is taken over by the parties concerned, in particular at regional level.

Finally, ASN proposed to the Government to continue to support the public authorities in pursuing the nuclear post-accident phase preparation, but also in updating the first elements of the national doctrine, more specifically taking account of experience feedback from the Fukushima accident.

The policy elements are available (in English) at : <http://www.french-nuclear-safety.fr/index.php/English-version/News-releases/2013/National-doctrine-for-nuclear-post-accident-management>

Medical, industrial and research activities

Exceeding of the maximum regulatory annual effective dose by a practitioner in interventional radiology – Montsouris Mutualistic Institute (Paris)

On 6th May 2013, the French nuclear regulatory body (ASN), was informed by the Head of the hospital “Institut Mutualiste Montsouris” that a radiologist performing radio-guided procedures[1] had received an effective dose exceeding the maximum regulatory dose limit of 20 mSv (milliSievert) in twelve consecutive months.

Due to the exceeding of the annual regulatory limit of whole body exposure to ionising radiation for a worker, and the observed lack of radiation protection culture, ASN rated this event level 2 on the INES scale, which comprises 8 levels.

[Click here to learn more on this incident.](#)

HERCA-DAP (Dose Area Product) display proposal (February 2013)

On the occasion of the 10th meeting of the Board of Heads of HERCA (Paris, 30-31 October 2012), a proposal for harmonization of DAP (Dose Area Product) units in general and in interventional radiology has been approved.

In interventional radiology and general radiography, it is essential that the Dose Area Product (DAP) values are displayed and the associated units are readily understood by the user who may be working with many other X-ray equipments from various manufacturers in different places.

HERCA believes that the use of harmonized DAP units can highly contribute to the objective of reducing patient dose. Consequently, two respective letters have been sent to COCIR and IEC inviting them to take this proposal into account in its future works.

ASN Guide on the drafting of an organisational plan in medical physics

ASN and the French Society of Medical Physics (SFPM) have jointly developed two documents which are now available:

- a) [ASN guide n° 20](#) on the drafting of an medical physics organizational (POPM)
- b) [ASN & SFPM Recommendations](#) on needs, intervention conditions and workforce in medical physics in medical imaging

These recommendations represent a tool made available to each institution so that it can determine, based on its objectives, its own needs in terms of medical physics.

They are designed to be enriched taking into account the feedback from users . Click [here](#) to learn more (in French)

ASN reminds that the use of ionizing radiation on the human body for artistic purposes is prohibited

End of 2012, ASN was informed that an exhibition entitled "Hand Games" brought together a hundred radiographs of hands in exhibition spaces located in Strasbourg (67) and Maxéville (54). At the request of a Strasbourg artist, radiographies had been made for artistic purposes in three medical imaging installations located in Strasbourg and Nancy on about twenty-five volunteers

Between 6 February and 23 April 2013, the ASN Strasbourg division approached the artist and conducted inspections of the medical imaging installations to examine the circumstances in which the radiographs were taken. Indeed, although the doses received by the volunteers are not likely to have a significant impact on health, they must never be administered without medical justification. A reminder of Article L.1333-11 of the Code of Public Health, which states that the use of ionizing radiation for purposes other than the diagnosis, treatment or research is prohibited, has been sent to the officials of the three radiology cabinets who had no objection to the perform the radiographic pictures. This reminder of the justification principle was formulated in particular through follow-up letters sent by the ASN to the facilities concerned. They are published on its website asn.fr.

Click [here](#) to learn more (in French)

Patient Radiation protection & analysis of continuous professional development practices & certification of health facilities:methodological Guide

The High Authority for Health (Haute Autorité de Santé (2005) HAS), in partnership with the Nuclear Safety Authority (ASN), have released in March 2013 a guide on analysis of practices in all three sectors in the medical field making use of ionizing radiation : radiology, nuclear medicine or therapy

Click [here](#) to learn more (in French)

Feedback experience on event's declaration in brachitherapy

<http://www.asn.fr/index.php/S-informer/Actualites/2013/Retour-d-experience-concernant-les-declarations-d-evenements-en-curietherapie>

Occupational exposure

Desirable changes in the Information System of Monitoring Exposure to Ionizing Radiation (SISERI)

"SISERI" is a national management tool of dosimetric data regarding the exposure of workers to ionizing radiation, whose management was entrusted to the Institute for Radiological Protection and Nuclear Safety (IRSN). This tool ensures the traceability of the doses received by each worker throughout his professional life, it offers including persons competent in radiation protection as well as occupational physicians direct access to the dosimetric data of workers they are responsible. SISERI thereby contributes to greater effectiveness of the radiation protection of workers.

Given the outlook for the European and national regulatory environment, as well as the feedback from more than six years of operation of this tool, the Nuclear Safety Authority and the Department of Labour have initiated discussions to identify desirable changes in SISERI to better take into account the needs of radiation protection actors radiation as well as the requirements in term of harmonization at European level

After an extended expertise process involving IRSN and the permanent group of experts in radiation protection of the ASN (GPRAD and GPMED), ASN and DGT considers necessary to improve access management to the the information and knowledge of the tool by the user's system. Transmission, reliability and completeness of the centralized data will be strengthened during the implementation of the regulatory reform, in 2013, providing a paperless management of individual medical care card.

Additionally, with the support of the ASN and IRSN, the DGT has decided to initiate from September 2013, an in-depth pluralistic reflection, on the evolution of regulatory provisions governing monitoring of individual occupational exposure On this occasion, other recommendations made by the GPRAD and GPMED will be examined, especially those concerning the establishment of direct workers' access to their own data and dosimetry using SISERI to cover the needs of labor inspectors and radiation protection.

Click [here](#) to learn more (in French)

Waste management

ASN issues an opinion on the documents produced by ANDRA since 2009 concerning the project of deep geological disposal facility of radioactive waste (June 2013)

ASN has issued an opinion on three dossiers submitted by ANDRA (French National Agency for Radioactive Waste Management) between 2010 and 2012. See below for more information:

National Radioactive Waste and Materials Management Plan (December 2012)

ASN in conjunction with the General Directorate for Energy and Climate (DGEC), as part of a pluralistic working group, established the National Radioactive Waste and Materials Management Plan (PNGMDR) for the period 2013-2015, which was transmitted to Parliament in December 2012.

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IRELAND – S. FENNEL (RPII)

RPII reports on risks to Ireland of planned new UK nuclear power plants

<http://www.rpii.ie/RPII/files/e8/e8fd1b92-0f67-415a-a37a-d4cb97023eb0.pdf>

The Radiological Protection Institute of Ireland (RPII) has published a report on the potential radiological impact on Ireland of new nuclear power plants that may be built at up to eight sites in the UK before 2025. The report examined possible impacts of these plants during their day-to-day operations, and in the event of severe accidents taking place.

The report shows that the routine operation of the proposed nuclear power plants will have no measurable radiological impact on Ireland or the Irish marine environment.

Five severe accident scenarios were assessed as part of the study that range in likelihood of occurrence from 1 in 50,000 to 1 in 33 million per year. In general, the less likely the accident, the greater the radiological impact in Ireland. Food controls and agricultural protective measures would be required if any of these accidents occurred to ensure that food on sale in Ireland was safe to eat. In the case of the most severe accident scenario examined in the study, short-term measures such as sheltering would also be required. In none of the scenarios evaluated was evacuation found to be an appropriate response.

The report also examined the consequences of a large accidental release of radioactivity to the Irish Sea equivalent in size to that after the Fukushima accident. It found that the resulting radiation dose to people in Ireland, who eat very large quantities of fish and shellfish, would be less than the annual radiation dose limit for the public.

The report shows that any radioactive contamination in the air, either from day-to-day operation of the proposed nuclear power plants or accidental releases, would be transported away from Ireland most of the time. This conclusion arises from an analysis of weather conditions prevailing in Ireland and the UK over the past 21 years.

Other aspects of the UK's proposed programme were also reviewed including the process for selecting the sites; plans for fabrication of the nuclear fuel to be used; UK arrangements for radioactive and nuclear waste; and other activities associated with the proposed nuclear power plants. While there may be radioactive discharges associated with some of these activities, they would be less than those associated with the routine operation of the nuclear power plants themselves and thus would be of no radiological significance to people in Ireland. □

ITALY – C. NUCCETELLI (ISS)

Anomalous ^{137}C activity concentration was reported in wild boar meat in Valsesia (Piedmont)

In March 2013 in wild boar samples -analysed during a Trichinellosis parasite survey- ^{137}C activity concentrations higher than 600 Bq kg^{-1} were measured, up to 5600 Bq kg^{-1} .

Immediately public concern grew up and the Italian Ministry of health, assisted by technical police bodies and some Regional Environmental Protection Agencies, started to investigate the origin of ^{137}C activity concentration in wild boar meat and to assess the radiological impact of its consumption.

It was concluded that the contamination was still due to the Chernobyl accident; indeed, rainy weather in early May 1986 caused a significant wet deposition -up to 30000 Bq m^{-2} - from the radioactive cloud in Valsesia and other valleys of Italian Alps.

Wild boars eat roots and mushrooms, consequently they ingest significant quantities of ^{137}Cs , as it is well known and confirmed by historical series of relevant data collected in Piedmont and Friuli Venezia Giulia Regions from the 1990's.

As regards the health impact of this consumption, this was assessed to be non-significant, due to the small amount consumed by local people.

Conclusion of the Italian Expert Group activity supporting the Italian delegation at the Atomic Question Group (AQG) during the discussion of the new Euratom BSS

After a year and a half, the commitment of the Italian Expert Group in the revision of the BSS draft was concluded. The text was proposed by EC in 2011 and discussed by AQG to May 2013.

Many amendements were approved by the AQG to the original text and some of them did not find agreement of Italy. Some examples relevant to the NORM issue are listed in the following.

In particular, the Italian Expert group thinks that the articles and the Annex concerning building materials were deeply modified, reducing the applicability and effectiveness of the BSS. Indeed, the implementation of controls and measures was completely delegated to Regulation (EU) No 305/2011 about construction products, a non radiation protection provision.

Another important change in disagreement with the Italian delegation was made on general exemption and clearance criteria for naturally-occurring radionuclides (Annex VI). Indeed, the dose increment incurred by an individual due to exempted NORM activity was modified from 0.3 mSv y^{-1} to 1 mSv y^{-1} .

Finally, a criticism by the Italian delegation concerns the amendment about dilution in article 29, in particular the sentence in par. 4: "The Competent Authority may authorise, in specific circumstances, the mixing of radioactive and non-radioactive materials for the purposes of re-use or recycling." In the original draft this activity was only limited to NORM residues with the aim to reduce the population dose. □

NORWAY – G. SAXEBOL (NRPA)

The Norwegian Radiation Protection Authority (NRPA) reorganized its structure with effect from 2013 increasing from earlier three departments to four departments. The main change was to separate the regulatory issues from other issues such as surveillance, emergency preparedness and research/development.

A survey has been performed in 2012/2013 concerning the level of competence in radiation protection for different professional groups in the medical sector. It was found a substantial lack of learning outcomes in RP in the curriculum for surgical nurse and physicians except for nuclear medicine specialists. For some medical professionals it was significant variations between educational institutions. A challenge for the future work is to implement learning outcomes in RP in the curriculum for all medical professionals involved with medical exposures.

There has been some debate between professionals and individuals concerning a regulatory requirement for referral from a medical practitioner for individual health assessment of asymptomatic persons outside the official screening programs.

NRPA are in an initial phase of a European epidemiological study to quantify the dose response curve for radiation induced cataract on cardiologists. Individual dosimetry of lens dose will be carried out, following the ELDO-method, and all participants will be controlled by an ophthalmologist to look for opacities and cataract.

Concerning high activity radioactive sources we have now implemented a “phase out” policy with regard to blood irradiators with HASS sources in hospitals. Based on security concerns we now recommend that blood irradiators should be based on X-ray technology. Renewal of licenses with high activity radioactive sources will normally not be given. The phase out period is estimated to take 10-15 years. □

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SLOVENIA – D. ŽONTAR (SRPA)

Incident at an NDT company

A dosimetry service notified Slovenian Radiation Protection Administration that a dose of 7,62 mSv was measured by TLD of one of the workers in a company performing NDT (using portable X-ray units and ^{192}Ir). Measurements indicated that the dose was caused by X-rays. Investigation of the incident showed that the incident took place in a radiography laboratory of the company despite it being equipped with safety systems: safety switches connected to movement detectors (photocell and optical sensors) and warning lights. At the time of the incident two workers were working in the radiography laboratory: the irradiated worker who was inexperienced (started a few months before the incident) and his more experienced colleague. The exposed worker, returning from a toilet, entered the laboratory to change a film while irradiation was taking place as he did not notice the warning lights being on. His colleague was not present at the control panel but was preparing chemicals in a dark room. Investigation of the incident showed that the safety system was disabled during the incident. The safety system was equipped by a switch (only accessible by a screwdriver) for overriding the safety system. It turned out that some of the operators were using the switch to disable the safety system making the workflow faster. Apparently the last operator that did this did not switch the system back on after finishing his shift. According to the company rules all safety systems should be checked before the start of work and this was not done in the case in question. Additionally all workers were supposed to be wearing electronic dosimeter, but it has not yet been provided for the new worker. The investigation also showed that both workers were aware of the exposure but did not report it to either radiation protection officer or their supervisors/management.

Actions taken by the company:

- the switch that enables overriding of the safety switches was removed,
- a check list of tasks to be performed before start of work in the radiography lab was introduced,
- safety briefing related to the incident was conducted with all workers,
- electronic dosimeter will be provided immediately for every new worker,
- internal training will be increased,
- internal surveillance will be increased.

The incident is a good example of the importance of the adequate education and safety culture. Despite numerous safety systems in place, lack of safety culture lead to an incident that would not take place under normal circumstances.

Incident in a brewery

A brewery notified Slovenian Radiation Protection Administration of an incident on a line for can filling that happened during maintenance procedure on a system for verification of can fill level. One of the workers installed a new X-ray tube to the unit; the X-ray tube was delivered already mounted to the electronic circuit so all the worker had to do was to place it into the housing and fix it there, with only one possible way of mounting it. Testing its function after installation he realised that the current and voltage settings were too high (60 kV instead of 35 kV) so he adjusted them, switching the unit

on and off a few times in the process. After adjustments he realised that the unit detector measured almost no signal, although the X-ray indicator was on. Checking with the dose rate meter he could measure almost no dose in the direction towards the unit's detector but a significant dose rate at the position he was occupying. He switched the unit off immediately and contacted radiation protection experts. Further investigations showed that the tube was mounted to the electronics incorrectly (by the provider Magnatek, Denmark) so that the tube window was facing a wrong direction (towards the worker instead of towards the line).

The worker was not using personal dosimeter as brewery workers were not supposed to enter irradiation field (the company license also did not cover maintenance of the unit). A dose reconstruction would thus be required. However, although radiation protection experts were called immediately dose rate measurements could not be performed as the tube stopped working. Tube provider was requested to provide information about dose rates and the malfunctioning tube was sent to the provider. No feedback has been received from the provider.

Due to an old age and unavailability of spare parts the level gauge in question was replaced by a new one. Some additional measures were taken by the brewery to prevent such incidences in the future as the event showed that the company should not rely on the provider that the parts are functioning properly.

One of the problems identified in the reported case was the difficulty of obtaining data from companies in other countries. In this case the absence of information from the tube provider prevented a dose reconstruction. The only reliable data about his exposure are results of the medical check where no related health effects were discovered. □

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SWITZERLAND – N. STRITT (OFSP)

Announcement of IRPA 2014 Europe

The 4th European IRPA congress will be held in Geneva in Switzerland in 2014 from 23rd to 27th of June. The title of the congress is "Radiation protection culture - a global challenge". The choice of the venue was driven by the intention to involve in the scientific program international organisation located in Geneva with a strong link to radio protection such as ILO, WHO, ISO. This congress is organised from the German-Swiss radiation protection association and the association romande de radioprotection (a French speaking Swiss association). A visit to CERN with its accelerators will be organised during the congress. More information with deadline for abstract submission as well as access to registration are now available on the web site: www.irpa2014europe.com.

Patient Swiss survey

The Swiss Federal Office of Public Health (SFOPH) is about to start a poll in the Swiss population about possible medical X-ray examinations that they underwent last year. Similar to the work of A. Aroua et al. (Radiation exposure by radio-diagnostic in Switzerland, a pilot patient-oriented survey, Radiation Protection Dosimetry (2004), Vol. 109, No. 3, pp. 211- 215), the poll will be a patient oriented survey, to have an insight in the distribution of X-ray examinations among the population regarding their gender, age, and place of living. For most accurate results the SFOPH is interested in examinations undergone in 2012 only. This survey would include children as well. The project will start in July (development of the questionnaire) followed by the interviews held from August until September. The results are supposed to be available at the end of the year 2013.

Pediatric project

A pediatric radiologist (Dr. Wolf) from the Inselspital in Bern is eager to determine Diagnostic Reference Levels DRL for pediatric X- ray examinations in planar radiography; locally and nationally. More specific: age-depending (or BMI-depending) DRL for high dose investigations (trunk and head) on children should be derived in a survey. The data set should be collected by a Master student of medicine. Approximately ten pediatric centers throughout Switzerland should be visited, including centers in the French part of Switzerland. The data set should subsequently be processed to determine the DRL and write a scientific publication. The national DRL will be published by the SFOPH in a directive of the office. This project is planned to end in August 2014. The measurement campaign is supposed to last about one month during this year. □

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UNITED KINGDOM – P. SHAW (PHE)

1. In 1st of April 2013, the Health Protection Agency became part of a new organisation called Public Health England, which is an executive agency of the UK Department of Health. The staff and functions of the Centre for Radiation, Chemical and Environmental Hazards (CRCE) remain unchanged, as is the commitment to EAN.
2. In March 2013, the UK Government issued a planning consent to NNB Genco (a subsidiary of EDF Energy) for the construction of a new nuclear reactor at Hinkley C. More details can be found at: <http://news.hse.gov.uk/onr/2013/03/planning-consent-decision-for-hinkley-point-c/>
3. The following PHE/HPA publications may be of interest:
 - [HPA-CRCE-048 - Assessing the Reliability of Dose Coefficients for Ingestion and Inhalation of Radionuclides by Members of the Public](#)
 - [HPA-CRCE-046 - Radon in Northern Ireland Homes: Report of a Targeted Survey](#)
 - [HPA-CRCE-045 - Report of a Record-based Case-control Study of Natural Background Radiation and Incidence of Childhood Cancer in Great Britain](#)

Among 27 447 cancer cases and 36 793 controls there was 12% excess relative risk (95% CI 3, 22; 2- sided p=0.01) of childhood leukaemia per millisievert of red-bone-marrow dose from gamma radiation; the association with radon was not significant.
 - [HPA-CRCE-044 - Practical Guidance on Thyroid Monitoring for Radioiodine Using Hand-held Instruments](#)
 - [HPA-CRCE-043 - Trends in Dental Radiography Equipment and Patient Dose in the UK and Republic of Ireland](#)

A review of data collected by the HPA Dental X-Ray Protection Services between 2008 and 2011 for intra-oral and panoramic X-ray equipment.
4. Also, one Radon Newsletter has been published.
 - [Issue 70 April 2013 \(PDF, 501 KB\)](#)
 - Radon Testing
 - Progress with Radon Mapping
5. Will Opening Windows Reduce the Radon Level in My Home? ■

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Venue, Registration and Fees

The workshop will take place in Hotel Lone, in Rovinj, Croatia, starting on the 7th of May, 2014 and finishing on the 9th of May, 2014.

A welcome reception will be held on the evening of the 6th of May, 2014,

The registration fee will be 400 € and will include: welcome reception, workshop dinner, three lunches, two coffee breaks per day, transport to and from the workshop dinner, the excursion to Brijuni (Pula), and the usual workshop materials.

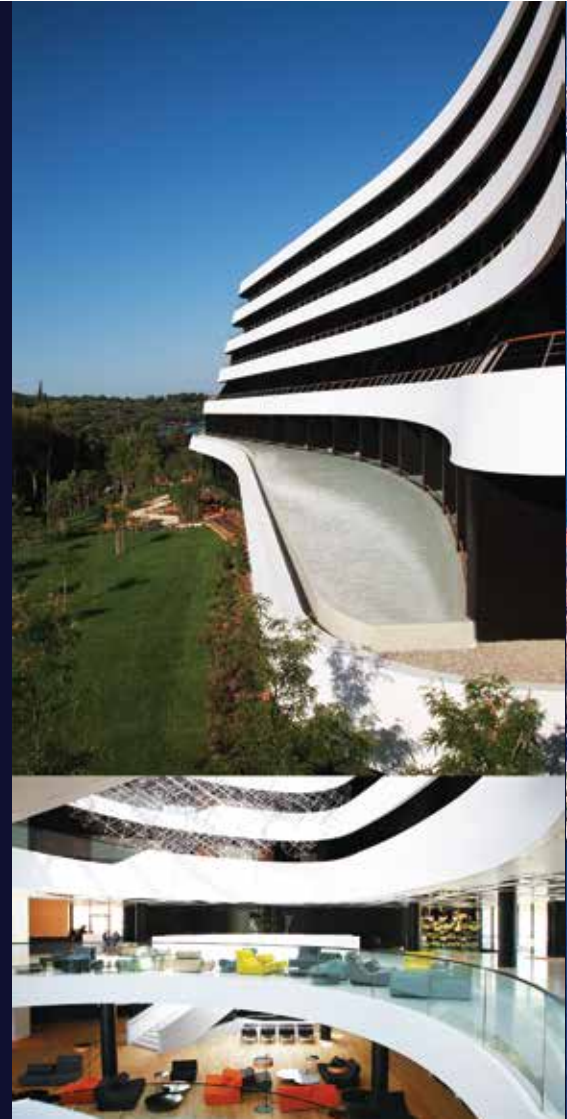
Participants should register before 15th of April, 2014 via the workshop website ean-euterp.ekoteh.hr.

Hotel booking, at a special rate, is possible via the workshop website, for Hotel Lone and Hotel Eden.

Call for Abstracts

Authors wishing to provide oral or poster presentation are invited to send an abstract, by the 29th of November, 2013.

<http://ean-euterp.ekoteh.hr>



15th European ALARA Network Workshop and 5th EUTERP Workshop

Education and Training in Radiation Protection Improving ALARA Culture

Rovinj, Croatia, 7th – 9th May 2014

First Announcement



ROVINJ, CROATIA, 7 – 9 MAY 2014 | FIRST ANOUNCEMENT

Education and Training in Radiation Protection Improving ALARA Culture

Welcome!

Aims and Objectives

Previous EAN and EUTERP workshops have noted the importance of delivering effective radiation protection education and training to workers and other stakeholders. Consequently, this joint EAN-EUTERP workshop considers how education and training programmes can be delivered effectively, to improve radiation protection in practice and disseminate ALARA culture.

The workshop will consist of presentations (oral and posters) intended to highlight the main issues, and a significant part of the programme will be devoted to discussions within working groups. Participants will be expected to produce recommendations on education and training issues, to be addressed to relevant local, national and international stakeholders.

Scope of the Workshop

The workshop programme covers education and training for various types of stakeholders and is expected to consider the following subjects:

- The new European BSS
- European qualification and accreditation schemes (ECVET, EQF, etc.)
- The effectiveness and efficiency of education and training
- Practical ALARA training
- New learning tools
- Elements contributing to ALARA culture
- Incorporating ethical aspects into education and training
- Education and training at all organizational levels

15th EUROPEAN ALARA NETWORK WORKSHOP AND 5th EUTERP WORKSHOP

Working Group Topics

- 1 Tools to improve the effectiveness of training: new methods of delivery, blended learning and post-training interaction.
- 2 How to measure the effectiveness of training: post-training assessment, ALARA evaluation, etc.
- 3 The role of qualification and recognition schemes (ECVET, EQF, etc.) and their value in the workplace.
- 4 Incorporating ALARA culture in training requirements for radiation workers and managers, as well as regulators and inspectors.
- 5 How to improve risk awareness, radiation protection and ALARA understanding for different stakeholders and for different exposure situations.

Target Audience

The workshop will be of interest to a variety of stakeholders including training providers, employers and employees' representatives, regulatory bodies, RP networks, research and other organisations involved in radiation protection.

Objet : RE: EAN application letter - ICRP Special Liaison Organisation

Date : mardi 12 mars 2013 13:12

De : Christopher CLEMENT <sci.sec@icrp.org>

À : Pascal CROUAIL <pascal.crouail@cepn.asso.fr>

Cc : "Cousins, Claire (claire.cousins@addenbrookes.nhs.uk)" <claire.cousins@addenbrookes.nhs.uk>

Dr Fernand VERMEERSCH:

Thank you very much for your letter of February 20, 2013, requesting Special Liaison Organisation status with ICRP. On behalf of ICRP, I am pleased to inform you that this status is now granted to EAN. I welcome you, and look forward to mutually beneficial cooperation in the years ahead.

As you have not named a specific point of contact within EAN, we have taken the liberty of using your name. Please advise should you wish to indicate another primary representative. EAN now appears on our list of organisations with whom we have formal relations at:

http://www.icrp.org/icrp_group.asp?id=80

Please advise if you would like us to make any changes to your entry.

Best regards,
Chris

Christopher Clement CHP

Scientific Secretary

sci.sec@icrp.org <mailto:sci.sec@icrp.org>

International Commission on Radiological Protection (ICRP)

280 Slater Street – Ottawa K1P 5S9 – CANADA

Executive Assistant: Lynn Lemaire, lynn.lemaire@icrp.org <mailto:lynn.lemaire@icrp.org> , +1 (613) 947-9750

From: Pascal CROUAIL [mailto:pascal.crouail@cepn.asso.fr]

Sent: February-26-13 9:44 AM

To: Christopher Clement

Subject: EAN application letter - ICRP Special Liaison Organisation

Dear Christopher,

Here attached the right version ! Sorry...

Pascal



INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION

[Home](#) | [News](#) | [Consultations](#) | [Publications](#) | [Downloads](#) | [ICRP Symposia](#) | [ICRP Activities](#)

Main Commission



Main Commission

Scientific Secretariat

Committee 1
Radiation EffectsCommittee 2
Doses from Radiation ExposureCommittee 3
Protection in MedicineCommittee 4
Application of the Commission's
RecommendationsCommittee 5
Protection of the Environment

Emeritus Members

Full ICRP Membership List

Formal Relations with other
Organisations

ICRP Funding

You are here: [ICRP Activities](#) > Formal Relations with other Organisations

Formal Relations with other Organisations

ICRP maintains formal relations with other organisations with an interest in radiological protection through specific agreements, or by granting Special Liaison status to organisations whose work is relevant to ICRP's mandate. Organisations currently in formal relations with ICRP are shown below.

Working-Level Engagement

To maintain active engagement with organisations in formal relations with ICRP, specific sessions are arranged at each ICRP Symposium to discuss concrete and timely topics with representatives of these organisations. In addition, opportunities are provided for representatives of organisations in formal relations with ICRP to meet with ICRP Main Commission members to discuss progress in areas of cooperation and mutual interest.

Representatives from organisations in formal relations with ICRP may be invited to provide expertise in specific ICRP Committee sessions. Representatives may also be invited to participate as members of ICRP Task Groups where their expertise is central to the objectives of the group.

High-Level Engagement

ICRP will arrange regular high-level meetings, inviting senior representatives of organisations in formal relations with ICRP to meet with the ICRP Chair and Main Commission members.

Applying for Special Liaison Organisation Status

Organisations are invited to apply for Special Liaison status by contacting ICRP Scientific Secretary Christopher Clement at sci.sec@icrp.org. Please provide relevant information about your organisation, and recommend who within your organisation would be the primary point of contact with ICRP.

Alternatively, we welcome discussions on entering into formal relations through other mechanisms, such as bi-lateral agreements.

ICRP maintains formal relations with the following organisations:

[European ALARA Network \(EAN\)](#)

Primary contact: Fernand Vermeersch

[European Commission \(EC\)](#)

Primary contact: Peter Faross

peter.faross@ec.europa.eu[European Nuclear Installations Safety Standards Initiative \(ENISS\)](#)

Primary contact: Bernd Lorenz

bernd.lorenz@gns.de[European Platform on Preparedness for Nuclear and Radiological Emergency Response and Recovery \(NERIS\)](#)

Primary contact: Thierry Schneider

thierry.schneider@cepn.asso.fr[International Atomic Energy Agency \(IAEA\)](#)

Primary contact: Dr. Miroslav Pinak Eng., PhD

M.Pinak@iaea.org[International Radiation Protection Association \(IRPA\)](#)

Primary contact: Bernard Le-Guen

exec.off@irpa.net[OECD Nuclear Energy Agency \(NEA\)](#)

Primary contact: Dr. Michael Siemann

michael.siemann@oecd.org[World Health Organisation \(WHO\)](#)

June 5, 2013

European ALARA Network (EAN)
Fernand Vermeersch
fvermeer@sckeen.be

Invitation to participate in ICRP 2013

Dear Mr. Vermeersch:

As our primary point of contact with EAN, I would like to invite you, and others within your organisation, to participate in ICRP 2013 to be held in Abu Dhabi this October.

In particular, this includes our 2nd International Symposium on the System of Radiological Protection to be held October 22-24. The programme for the symposium is almost complete, and will be announced soon. It includes sessions on radiological protection related to: tissue reactions, post-accident recovery, medicine, NORM, and the environment. I would like to draw your attention to the session on tissue reactions, as this is dedicated to organisations in formal relations with ICRP, and will include several speakers from these organisations as well as a panel discussion. Further details and registration for the symposium will be available soon on www.icrp.org.

In addition, as an organisation in formal relations with ICRP, I am pleased to invite representatives to participate in a number of exclusive sessions, outlined below.

- A senior representative of your organisation is invited to attend a session of the ICRP Main Commission meeting on the afternoon of October 20. During this high-level session each representative will have an opportunity to make a short presentation focusing on issues of mutual interest, and proposals for collaborative initiatives. An early indication of who within your organisation would attend this session would be appreciated. Further details will follow closer to the time of the event.
- ICRP Main Commission and Committee members will meet in plenary on the morning of October 21. This session will not be open to symposium participants, but I would like to invite one representative of your organisation to be present.
- I am also pleased to invite two representatives of your organisation, with accompanying persons as applicable, to a reception scheduled for the evening of October 20. This reception, open only to members of the ICRP Main Commission and Committees and a few invited guests, is an excellent opportunity to interact in a less formal setting.
- Another opportunity to interact will be at the desert banquet planned for the evening of October 22. All ICRP members will be there, and it will be open to all attendees of the symposium and accompanying persons. Ensure the option to attend the banquet is selected when you register for the symposium as this will be a memorable evening.

Please note that the business meetings of the ICRP Committees being held around the same time are closed. Our new approach to collaboration replaces observers to Committees. However, selected representatives or other individuals may occasionally be invited at the discretion of ICRP to discuss specific issues.

Finally, let me express my appreciation for your interest in collaborating with ICRP through our system of formal relations. As you know, this approach to collaboration is a new initiative of ICRP, replacing other approaches that had become outmoded. We expect it will lead to even more fruitful relations with a wider range of organisations interested in radiological protection. Rest assured that the activities planned for ICRP 2013 are only the beginning.

Sincerely,



Christopher Clement
Scientific Secretary

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UK Reg. Charity 298173

2.1, 2.4



OPERRA Kick-off Meeting

4.1, 4.3, 4.5

Paris (France), Tuesday 18 June 2013

Agenda

08:30-08:40	Welcome Address <i>Jacques Repussard (Director General of IRSN, Chair of the MELODI Association)</i>
08:40-08:50	Welcome Address <i>André Jouve (European Commission)</i>
08:50-09:10	General Presentation of the OPERRA Project <i>Jean-René Jourdain (IRSN, OPERRA Coordinator)</i>
09:10-09:20	OPERRA WP1 Presentation: Project Coordination & Management <i>Jean-René Jourdain (IRSN, WP1 Leader)</i>
09:20-09:30	OPERRA Financial Rules & Requirements <i>Didier Mestraletti (IRSN, OPERRA Financial Officer Coordinator)</i>
09:30-09:40	OPERRA WP2 Presentation: Integration of national & EU research & training programs covering research in radiation protection <i>Thomas Jung (BfS, WP2 Leader)</i>
09:40-09:50	OPERRA Task 2.1 Presentation: Identifying key partners involved in radiation protection research, as well as education & training, and joint programming of research activities in radiation protection: links between MELODI, ALLIANCE, NERIS, EUTERP, EURADOS & EURAMET <i>Frank Hardeman (SCK-CEN)</i>
09:50-10:00	OPERRA Task 2.2 Presentation: Determining joint funding mechanisms for national & EU Fission R&D programmes <i>Bernd Grosche (BfS)</i>
10:00-10:10	OPERRA Task 2.3: Identifying experiences and lessons learned from existing exposure situations, including Chernobyl, Fukushima, and the NORM industry Sub-Task 2.3.1 Presentation: Emergency situations <i>Bernd Grosche (BfS)</i>
10:10-10:20	OPERRA Task 2.3: Identifying experiences and lessons learned from existing exposure situations, including Chernobyl, Fukushima, and the NORM industry Sub-Task 2.3.2 Presentation: Remediation <i>Jochen Tschiersch (HMGU)</i>
10:20-10:30	OPERRA Task 2.3: Identifying experiences and lessons learned from existing exposure situations, including Chernobyl, Fukushima, and the NORM industry Sub-Task 2.3.3 Presentation: Health impact <i>Elisabeth Cardis (CREAL)</i>
10:30-10:40	OPERRA Task 2.4: Exploring how to enhance radiation protection research activities related to the medical uses of ionising radiation Sub-Task 2.4.1 Presentation: "High dose" procedures based on X-ray imaging (CT, angiography) <i>Christoph Hoeschen (HMGU)</i>
10:40-10:50	OPERRA Task 2.4: Exploring how to enhance radiation protection research activities related to the medical uses of ionising radiation Sub-Task 2.4.2 Presentation: Nuclear medicine procedures <i>Christoph Hoeschen (HMGU)</i>

TABLE OF CONTENTS

- ESR, EFRS and EFOMP committed to sustain and expand EMAN Page 1
- Activities & outlook of the new network Page 2
- Outcomes of the EMAN Workshop (June 2012) Page 3
- EMAN Meeting at ECR 2013 Page 3
- Summary of achievements of EC-funded EMAN Project Page 4
- Imprint & Contact Page 5

ESR, EFRS and EFOMP continue collaboration in medical radiation protection optimisation

After successful conclusion of the EC-funded Tender project to establish a European Medical ALARA Network, the three professional organisations involved – the European Society of Radiology (ESR), the European Federation of Radiographer Societies (EFRS) and the European Federation of Organisations of Medical Physics (EFOMP) – decided to ensure sustainability of the EMAN network and signed a relevant Letter of Intent.

Dissemination and outreach play a key role in contributing to an effective safety culture in the medical sector. In that spirit, the Steering Committee members are pleased to launch the first edition of the EMAN Newsletter and hope you enjoy the read.

The EMAN Steering Committee



Peter Vock ■ ESR



Graciano Paulo ■ EFRS



Renato Padovani ■ EFOMP

ESR, EFRS and EFOMP committed to sustain and expand EMAN

ESR PLEASSED TO HOST POST-PROJECT EMAN NETWORK

The ESR fully recognises the need for sustained collaboration in medical radiation protection optimisation as a core partner together with the other professional societies originally involved in the project. Furthermore the ESR is pleased to host the EMAN Secretariat and to ensure the management of the post-project EMAN Network, which underlines the recognition of the importance of this inter-professional cooperation. The ESR looks forward to fruitful collaboration and successful outreach to relevant stakeholders and observers in the coming months, as the future success will strongly depend on their active involvement. The ESR is ready to add its contribution in order to work towards a comprehensive network of medical radiation protection aiming to further harmonise the safety culture in Europe.



■ www.myesr.org

EFRS LOOKS FORWARD TO BUILDING UPON AND DISSEMINATING THE WORK OF THE EC PROJECT

The EFRS Board is pleased that the European Medical ALARA Network (EMAN), as developed in the course of the EC Tender project, came to a positive end and looks into a bright future. The EFRS welcomes the joint effort of the core partners aiming to give maximum visibility to the work done so far and to develop a strategy to involve the European health professional/scientific societies, whose members use ionising radiation in their daily practice. Representing over 100,000 radiographers throughout Europe, the EFRS is well placed and ready to contribute to a wide dissemination of the Network's activities and achievements.



■ www.ehrs.eu

EFOMP WELCOMES SUSTAINED COLLABORATION IN RADIATION PROTECTION OPTIMISATION

Radiation protection in the medical sector is a complex endeavour, involving a diversity of stakeholders with different responsibilities and needs. EFOMP fully supports the initiative to sustain the important work the EC-funded EMAN project has achieved in the field of radiation protection optimisation and is pleased to be one of its core partners. Due to the complexity, EFOMP would like to emphasise the importance of an inclusive multi-stakeholder approach and has dedicated itself to supporting the Network's outreach to relevant organisations. EFOMP looks forward to a continued lead of the working group on radiological safety for patients and personnel in activities using x-ray equipment outside the x-ray departments.



■ www.efomp.org

Activities & outlook of the new network

One of the key aims of the EMAN Tender project funded by the European Commission (EC) has been to establish a sustainable European Medical ALARA Network where different stakeholders within the medical sector will have the opportunity to discuss and to exchange information on various topics relating to the implementation of the ALARA principle in the medical field.

After the end of the EC-funded project in October 2012, it was agreed that the three professional organisations involved – ESR, EFRS and EFOMP – shall constitute the core partners and drive the sustainable post-project network as the Steering Committee. Together they represent over 160,000 professionals working in the health sector. The collaboration was formalised in a Letter of Intent between the three parties, signed in autumn 2012.

■ INVOLVEMENT OF STAKEHOLDERS AND OBSERVERS

As the key asset of the EMAN Network lies in a multi-stakeholder approach, the Steering Committee is currently reaching out to the various stakeholders with a potential interest in the scope of the network and who share a common interest to improve medical radiation protection. Interested medical professional organisations are encouraged to join the Network as Stakeholders, while European and international organisations and bodies are invited to take on an observer and/or advisory role as Observers of the Network. Both types of engagement imply regular interaction with the Steering Committee and active participation in the activities of the Network through representation in the EMAN Stakeholder Group.

As a first step the consortium partners of the EC funded project were successfully invited to join the post-project EMAN Network:

- Swedish Radiation Protection Authority (Observer)
- German Bundesamt für Strahlenschutz (Observer)

- European Radiation Dosimetry Group (Observer)
- Centre d'étude sur l'Evaluation de la Protection dans le domaine Nucléaire (Stakeholder)

As a second step, the Steering Committee has extended invitations to a number of medical professional organisations and international and European bodies, including the European Commission, IAEA, WHO, Heads of the European Radiological protection Competent Authorities (HERCA). The Cardiovascular and Interventional Radiological Society of Europe (CIRSE) has already declared its interest in active involvement.

■ ACTIVITIES IN THE FIRST YEAR OF THE NEW NETWORK (2013)

In addition to the stakeholder outreach, the first activities of the new Network include a revision and update of the project website (currently ongoing), as wide dissemination of the valuable documents developed during the EC funded phase is one of the key tasks to ensure uptake and implementation of the suggested optimisation measures.

During that process the Stakeholder Group will serve as a multiplier contributing to promoting optimisation in radiation protection among its individual members and through its communication channels.

Collaboration for the time being focuses on the scope of activities of the EC-funded project, i.e. on the three following application areas of ionising radiation

- Computed tomography (CT)
- Interventional procedures
- The use of x-ray equipment outside the radiology department

To that end, the three working groups of the EC-funded project will resume their activities, update their documents and build upon the achievements during the EC-funded period. In addition, the Steering Committee – depending on stakeholders' demand – may decide to

extend the scope of activities to other clinical areas to optimise radiation protection.

Moreover, EMAN will continue to support the European Commission (EC) in its activities relating to the optimisation of radiation protection of individuals submitted to medical exposures; formulate proposals to the EC on harmonization issues, and propose to the EC solutions of identified issues at the European level.

An annual EMAN meeting is envisaged to review activities, discuss the way forward and to disseminate the Network's achievements to the interested communities. The first meeting, gathering the Steering Committee, the Stakeholder Group as well as the working group leaders and members, will be organised during ECR 2013 in March.

■ LONG-TERM OVERARCHING VISION

The long-term vision of collaboration of the Steering Committee members is to establish a single point of contact (SPOC) for the health professionals workforce, covering all aspects of medical radiation protection to avoid fragmentation of activities and duplication of effort. The activities of EMAN will potentially be integrated into the SPOC once established.

■ HOW INDIVIDUALS CAN CONTRIBUTE TO EMAN

As you have realised, EMAN has set itself ambitious goals and has embarked on resource-intensive activities in order to establish and improve a radiation protection and patient safety culture in Europe.

If you are interested in the scope of the Network and share our interest to improve this safety culture, you are most welcome to contribute to the activities of the working groups. Please contact the EMAN Secretariat, who will be happy to put you in contact with the relevant chairperson.

Want to know more?

For more information, please visit the EMAN website at <http://www.eman-network.eu/> or contact the EMAN Secretariat at eu-affairs@myesr.org



This workshop of 2.5 days was held with the aims of presenting the results of the EC project to other stakeholders (professional organisations, COCIR), regulatory authorities (EC, HERCA, national authorities) and international organisations (ICRP, IAEA) as well as to hear their approach to optimisation and proposals for further activities.

Outcomes of the EMAN Workshop (June 2012)

• AIMS AND ORGANISATION

Ten thematic sessions (7 plenary, 3 in working groups dedicated to the three main objects of the EC project) served to analyse the needs for optimisation, to present current activities of all participating partners, and to jointly look for good examples of practical optimisation, for chances of improvement, and for the requirements and solutions of implementing a sustainable EMAN network.

• EXTRACT OF PRESENTATIONS AND DISCUSSIONS

It is beyond the format of a summary to list all the many excellent ideas presented during the workshop; those can all be accessed through the EMAN-website (www.eman-network.eu).

First, it was essential that the EC, the regulatory authorities and international organisations presented the global trends in radiation

protection in medicine, their top projects and willingness to contribute to optimisation in Europe. COCIR showed the voluntary self-commitment of the imaging industry through concrete actions in CT and its interest in cooperating with the medical partners and the authorities. Beyond the formal EMAN members, the European Society of Paediatric Radiology (ESPR), the European Association of Nuclear Medicine (EANM), the European Society for Radiotherapy and -Oncology (ESTRO), the European Society of Gastrointestinal Endoscopy (ESGE), the Cardiovascular and Interventional Radiological Society of Europe (CIRSE) and a representative of Interventional Cardiology presented ways to improve optimisation in their specific areas. Experiences with clinical audits, with the cooperation between hospitals and manufacturers as well as between radiographers, radiologists and physicists, and with e-learning in Italy to reach persons outside the departments of radiology were very illustrative. The working groups concentrated on their specific areas of activity and were able to point out many practical approaches to optimisation, such as to reduce occupational exposure in intervention.

The future of EMAN was intensively discussed. Since this is the subject of another article in this newsletter showing the more recent development, no details are given here.

• CONCLUSIONS

In the Conclusion Session, important needs for the future EMAN network were listed, and those repeatedly proposed shall be mentioned here: Most participants suggested to include as many professional partners as possible working with X-rays, radioisotopes and therapeutic radiology in order to cover the whole medical field. It was also a broadly identified need that EMAN should include the whole range of radiation protection activities, i.e. above all justification, clinical audits and ed-

ucation/training in addition to optimisation. Interdisciplinary cooperation was recognised as one of the most important achievements of the EC project; as medical radiation protection is a multidisciplinary task, the cooperation of all partners including the referrers is essential, and within the departments of radiology, the core team of radiographers, radiologists and medical physicists has an extraordinary role. Finally, the need for increasing the visibility of EMAN and for reaching all medical actors was pointed out as a major goal for the further work.

ANNOUNCEMENT

• EMAN MEETING AT ECR 2013

Does your organisation share an interest in contributing to an effective safety culture in the medical sector?

The EMAN Steering Committee is pleased to invite interested organisations to participate in the **EMAN Meeting on the occasion of the European Congress of Radiology (ECR) in Vienna, March 7-11.**

Besides a project presentation, this meeting will inform about activities of the EMAN project after conclusion of the EC-funded period, discuss priorities for the coming months and encourage participation of interested organisations.

Date: Friday, March 8, 2013
17:00 – 18:30
Austria Center Vienna

For information and registration, please contact: angelika.benkowszky@myesr.org



Summary of achievements of EC-funded EMAN Project

The aim of the EC-funded EMAN project was to develop radiation protection optimisation strategies in three areas of diagnostic and interventional radiology: computed tomography, interventional radiology and cardiology and radiological practices performed outside radiology department. Three working groups with representatives of the professionals involved, medical radiologists and cardiologists, radiographers, medical physicists and regulators, worked two years identifying need and priorities for the implementation of elements to increase the level of radiation protection, both for patients and, when relevant, involved staff.

The results achieved by the three multidisciplinary groups provide the methodology to apply in other fields of diagnosis and therapy. It is recommended that the same methodology is applied at the hospital level, establishing multidisciplinary “core teams” to implement exposure optimisation in the different areas.

The role of the “core team” is to develop optimised procedure protocols, train staff and supervise practice. The knowledge, competence and skills of the members of the core team have to be defined together with training initiatives, supported by EMAN and scientific societies.

This article summarises the main achievements of the three working groups (WG) together with recommendations addressed towards the European Commission, standardisation and regulatory bodies, manufacturers and users. Complete information is contained in the synthesis and final documents posted on the EMAN website.

• OPTIMISATION IN COMPUTED TOMOGRAPHY

The WG on optimisation in CT, chaired by Jürgen Griebel from German Bundesamt für Strahlenschutz (BfS, Munich), has set up 8 sub-groups to explore specific items and develop recommendations. The WG, recognised the need for important interventions aiming to reduce, or optimise, patient dose, and devel-

oped a series of recommendations, of which the most relevant ones are reported here:

- The European Commission should develop actions both on research and guidelines:
 - research should compare exposure and associated radiation risks with clinical benefit from the increasing use of CT by taking into account information on age of the patients and clinical indication of the performed CT exams
 - guidelines should be developed to promote the ALARA approach to the principle of justification, with the help of harmonised referral guidelines on a European level and to promote standardised and optimised protocols and algorithms in individual health assessment.
 - European action to assess and promote the use of an updated set of DRLs for adult and paediatric patients.
- Manufacturers should develop software tools to popularise databases with individual patient-specific exposure parameters, to compare exposure with DRLs, and to develop automatic techniques to adapt kV settings.

On the dosimetry side, it is necessary to clarify the concept of organ dose, compared to effective dose, to develop new dosimetry quantities and to express dose for wide x-ray beam and relative measurements protocols.

• OPTIMISATION OF PATIENT AND OCCUPATIONAL EXPOSURES IN INTERVENTIONAL RADIOLOGY AND CARDIOLOGY

As part of the medical procedures using ionising radiation, interventional radiology and cardiology (IR and IC) procedures are performed in increasing large numbers worldwide. These procedures often imply high radiation doses to patients, but also for the healthcare personnel. This is reinforced by the fact that many of the specialists performing interventional procedures do not have proper education and training in radiation protection

tasks. As a consequence, there are more and more concerns about radiation protection of patients and healthcare personnel using such techniques. Major areas of concern are high extremity doses to hands and legs, as well as to the eye lens of the physicians. Recent data on the effects of eye lens exposure increase concerns about possible delayed effects such as lens injuries or cataracts for the medical staff. The WG has developed a synthesis document in which current information on practices and related doses and protection elements have been reported and discussed. Derived recommendations aiming to increase the level of optimisation of exposures are summarised here:

- European Commission and, where appropriate, national authorities should promote:
 - the assessment and the use of DRLs for all interventional practices, for adults and children. DRLs, taking into account the complexity factor of procedures, should be part of the revised EC Guidelines on DRLs
 - the development of monitoring methods and protocols for staff, in particular for the monitoring of doses to extremities and to the lens of the eyes
 - the assessment and the use of “trigger or alert” levels to identify which patients submit to follow-up to identify possible skin lesions due to complex and high dose procedures
 - the implementation of a quality audit and the accreditation of radiation protection training
- Healthcare professionals should have appropriate education and training in radiation protection. The level of education and training should be adapted to the radiation risk and to the specificities of the procedure. Physicians and medical physicists should be involved in the specification of the equipment to be purchased. Optimised clinical protocols and quality control procedures have to be developed and adopted.

• OPTIMISATION IN X-RAY PRACTICES PERFORMED OUTSIDE RADIOLOGY DEPARTMENT

Radiation protection of patients and staff for practices performed outside radiological departments are of particular interest due to the: limited information on type, frequency of procedures and doses; increased frequency of procedures, some of them complex and taking place in surgical theatres; fact that procedures are performed by non-radiologists and nurses with poor or no training in radiation protection and procedure optimisation. The working group identified some practices and procedures to study in vascular surgery, gastroenterology, urology, orthopaedics, neurosurgery, anaesthesiology and gynaecology. For these, an extensive literature data analysis has been performed together with specific sets of data collected from hospitals accessed by the members of the working group.

The identified lack of optimisation revealed the following optimisation actions:

- The European Commission should:
 - strengthen patient dose monitoring at the hospital level and the assessment of national figures to fill the knowledge gap;
 - revise the *EC Guidance on Diagnostic Reference Levels for Medical Exposure (RP 109)* including DRLs assessed for these practices with a methodology developed to assess DRLs when a limited set of data is available;
 - recommend to apply harmonised staff exposure monitoring guidelines conveniently developed by HERCA (Association

of Heads of European Radiological Protection Competent Authorities) and EMAN;

- promote clinical audit and inspection activities
- develop a Radiation protection *Guideline for the optimisation of radiological practices performed outside radiology departments*, based on a structure propose by EMAN.

- HERCA should also work on the harmonisation of national staff dosimetry databases where the inclusion of specialists' radiological workload will allow for extracting dose information for specific group of specialists.
- The European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry (COCIR) should promote development of standards aiming to reduce patient and staff doses for mobile interventional equipment.
- Education and training of professionals in radiation protection is seen as a priority. Most practitioners have little or no education in radiation protection and optimisation methods. Specific methodologies have to be used to reach the large number of practitioners (medical specialists, nurses, radiographers and medical physicists). The MEDRAPET project is providing hints to be used in developing proper training packages.
- Stakeholder's involvement. The experience and agreement reached with the European Society of Gastrointestinal Endoscopy (ESGE) is seen by EMAN as a model to propose to other professional specialities to enlarge the network.

EMAN Working Group Members

WG 1: Jürgen Griebel (BfS)/WG Coordinator
 Mercè Ginjaume (EURADOS)
 Hans-Dieter Nagel (SASCRAD)
 Elke Nekolla (BfS)
 Dean Pekarovic (EFRS)
 Mathias Prokop (ESR)
 Viginia Tsapaki (EFOMP)

WG 2: Hubert Ducou Le Pointe (ESR)/WG Coordinator
 Laure-Anne Beltrami (CEPN)
 Eleftheria Carinou (EURADOS)
 Laurent Donadille (EURADOS)
 Arnd Dörfler (ESNR)
 Fabrizio Fanelli (CIRSE)
 Jose M. Fernandez-Soto (EFOMP)
 Helmut-Dietmar Glogar (ESC)
 Dimitris Katsifarakis (EFRS)
 Caroline Schieber (CEPN)

WG 3: Renato Padovani (EFOMP)/WG Coordinator
 Eila Lantto (ESR)
 John Damilakis (ESR)
 Anders Widmark (EFRS)
 Stelios Christofides (EFOMP)
 Caroline Schieber (CEPN)
 Laure-Anne Boffa (CEPN)

IMPRINT

EMAN – European Medical ALARA Network

Editorial Board: Prof. Peter Vock, Prof. Graciano Paulo, Prof. Renato Padovani

Managing Editors: Monika Hierath, Angelika Benkovszky

• CONTACT

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www.eman-network.eu ■ www.myesr.org

Design: Sonja Huber ■ www.diehuber.at

ERPAN Meeting 2013, agenda

Date: Friday 21st June 2013
Time: 09:30 until 16h30
Place: Autorité de sûreté nucléaire
 new ASN headquarters
 15 rue Louis Lejeune - 92541 Montrouge
 Paris

- | | |
|--|--|
| 1. Introduction | Chairman |
| 2. Approval of minutes from last ERPAN meeting | Chairman |
| 3. Result of the last survey of ERPAN | Chairman |
| <ul style="list-style-type: none"> ▪ Requirements for a Cyberknife facility (Ireland) ▪ Need of license for external parties providing services to licensees (Ireland) ▪ Lifetime of sealed sources (Luxembourg) ▪ Long half-life in nuclear medicine (France) ▪ Affected Lamps with radionuclides (Ireland) ▪ Highest photon beam energy in radiotherapy (France) ▪ Dust, contaminated with Cs-137 (Belgium) ▪ Radioactive source based blood irradiators (Norway) ▪ Preparation of radiopharmaceutical products in nuclear medicine (Switzerland) | Stephen
Stephen
Jean-Claude
ASN
Stephen
ASN
Belgium ?
Gunnar
Nicolas |
| 4. Recent Incident in Europe (feedback, lesson learned) | |
| 1. Radiotherapy incident in France
2. Database of incidents with ionising sources, 10 year experiences in Slovenia | Aurelie
Helena |
| Lunch Break | |
| 5. Implementation of the new EU draft BSS in national law | |
| Graded authorisation system for licensing, registration and notification in Ireland | Stephen |
| 6. Update on the BSS directive | Stephen |
| 7. Audit/inspection experience with laboratories or in medicine | |
| Assessing discharges from hospitals in UK | Isabelle |
| 8. Survey and licensing particularities within international Institution CERN | Nicolas |
| 9. Collaboration with HERCA | All |
| 10. Date and venue of the next meeting | All |
| 11. AOB | All |

Survey on Radiation Surveillance of workers
 - deadline September

Objet : Re: réseau européen

Date : mercredi 20 février 2013 12:00

De : Caroline SCHIEBER <schieber@cepn.asso.fr>

À : Christine Gauron <marie-christine.gauron@inrs.fr>

Cc : Pascal CROÜAIL <crouail@cepn.asso.fr>

Catégorie : CEPN

Bonjour Christine,

A priori il n'y aurait pas de problème pour diffuser ce questionnaire. L'idée serait de s'appuyer sur le réseau ERPAN (qui est un sous-réseau de EAN, et concerne les inspecteurs des autorités de sûreté et RP).

Par contre, il me faudrait une version anglaise du questionnaire pour pouvoir le transmettre au responsable du réseau ERPAN. Pourrais-tu me la faire parvenir ?

Il faudra également donner quelques éléments sur le contexte de cette enquête et assurer que la synthèse sera ensuite diffusée (a priori sur le site EAN). Il serait également intéressant de donner les réponses sur le cas français.

Je reste à ta disposition pour la suite de l'enquête

Bien cordialement

Caroline

Caroline SCHIEBER

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Le 7 févr. 2013 à 09:06, marie-christine.gauron@inrs.fr a écrit :

bonjour,

concernant l'organisation de la surveillance médicale en europe et en particulier les communications de résultats d'examens radiotoxicologiques et anthroporadiamétriques des travailleurs exposés, vous m'aviez proposé dernièrement de communiquer un questionnaire à votre réseau; je vous joins un projet de questionnaire qui peut être tout à fait simplifié si vous le jugez nécessaire (il vaut mieux un questionnaire réduit si cela

conditionne le taux de réponse); on peut également en reparler;

merci encore de votre proposition,

cordialement,

Dr Christine Gauron

Conseiller médical en santé au travail- rayonnements ionisants
INRS

65 bd Richard Lenoir

75011 Paris

01 40 44 31 85<QUESTIONNAIRE.doc>

Background

As part of the effort to homogenise practices within European countries, we wish to take stock of radiation surveillance of workers exposed to ionising radiation in Europe.

Questionnaire to be sent to European correspondents

Dosimetry practices for workers exposed to ionising radiation in medical (or veterinary) sector

1. Medical surveillance of workers exposed to ionising radiation

a. Physician in charge of surveillance:

i. Physician attached to the undertaking ([company?](#), [establishment?](#))

- Occupational physician
- Other: please specify

ii. Physician outside the undertaking ([company?](#), [establishment?](#))

- Physician bound by contract with the undertaking
- Physician attached to a government structure
- Worker's general practitioner
- Other: please specify

b. Type of medical surveillance

i. Individual surveillance for B categories

- Yes No
- Frequency

ii. Individual surveillance for A categories

- Yes No
- Frequency

c. Prescription of biological tests (blood, urine, radiology, etc.)

- | | | |
|---|-----|----|
| i. Possible | yes | no |
| ii. Provided for according to regulations (please enclose the document) | | |
| iii. Chosen by the physician carrying out the surveillance | yes | no |

2. External dosimetry:

a. Implemented systematically

- | | | |
|----------------|-----|----|
| i. A category | yes | no |
| ii. B category | yes | no |

b. B categories:

- i. Dosimetry carried out based on random individual surveillance representative of the exposure of the given population confirming classification in category B

	yes	no
--	-----	----
 - ii. Or individual nominal dosimetry recorded

• At local level (establishment...)	yes	no
• At national level	yes	no
 - c. A categories:
 - i. Individual nominal dosimetry results recorded:

• At local level (establishment...)	yes	no
• At national level	yes	no
 - d. Nominal individual dosimetry results returned:
 - i. to the undertaking :

• To the head of the business unit	yes	no
• To the employer	yes	no
• To the head of the establishment	yes	no
• To the worker	yes	no
• To the physician in charge of the surveillance	yes	no
• To the radiation protection expert or officer	yes	no
• To a non-physician in-house person in charge of safety (e.g. a physicist)	yes	no
 - ii. Communication of nominal results carried out

• In accordance with regulations: please specify		
• At the discretion of the undertaking	yes	no
 - e. Recording of results:
 - i. In the medical file

	yes	no
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 - ii. In a national register

	yes	no
--	-----	----
 - iii. In the undertaking register

	yes	no
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 - iv. Other: specify

3. Internal dosimetry:

- a. Implemented
 - i. Systematically if there is a risk of internal exposure > 1mSv

	yes	no
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or systematically if there is a risk of internal exposure > XmSv (please specify)
 - ii. Randomly in a given population representative of an average "collective" dosimetry

	yes	no
--	-----	----
 - iii. Through

• atmospheric measurements	yes	no
• individual measurements by air sampling at the work station	yes	no
• biological samples taken from the individual	yes	no
• whole-body counting	yes	no

b. Prescription

- | | | | |
|------|--|-----|----|
| i. | By the physician in charge of the surveillance | yes | no |
| ii. | By the employer or a representative | yes | no |
| iii. | By the radiation protection expert or officer | yes | no |
| iv. | Other: please specify | | |
- c. Nominal individual results of biological sampling returned:
- | | | | |
|---|---|-----|----|
| • | To the worker | yes | no |
| • | To the undertaking (or employer) | yes | no |
| • | To the physician in charge of the surveillance | yes | no |
| • | To the prescribing physician (if it is not the same) | yes | no |
| • | To the radiation protection expert or officer | yes | no |
| • | To the non-physician in-house person in charge of safety (e.g. a physicist) | yes | no |
| • | To an outside person who is not a physician (please specify) | yes | no |
- d. Recording of nominal results for individual internal dosimetry:
- | | | | |
|---|--|-----|----|
| • | In the medical file | yes | no |
| • | In the undertaking's internal register | yes | no |
| • | In a national register | yes | no |
| • | Other: please specify | | |
- e. Communication of nominal results for individual internal dosimetry:
- | | | | |
|---|---|-----|----|
| • | Provided for according to regulations: please specify | | |
| • | Subject to medical confidentiality | yes | no |
| • | At the undertaking's discretion | yes | no |
| • | External authority: please specify | | |

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Optimisation of Radiation Protection (ALARA):

A Practical Guidebook