



European ALARA Network

EAN Steering Group Meeting

3rd December 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 3rd December 2013 Steering Group meeting.

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FRANCE – O. GUZMAN (ASN)

English version of the ASN website: <http://www.french-nuclear-safety.fr>

General topics

ISO 17 020 accreditation of an ASN Department

ASN's Nuclear Pressure Equipment Department (ASN/DEP) receives ISO 17 020 accreditation. Since 1st July 2013, ASN has been accredited in compliance with ISO/IEC 17 020 as a "A-type" inspection body in the field of manufacturing and in-service monitoring of nuclear pressure equipment.

This accreditation is the result of a proactive approach by ASN and follows a recommendation by an IAEA experts group during the course of an ASN audit mission carried out in late 2006. IAEA had noticed that the regulations covering nuclear pressure equipment entailed the use of notified bodies and accredited in compliance with standard ISO 17 020 and therefore recommended that ASN, some of whose duties were equivalent to those of a notified body, demonstrates that it had the qualifications and expertise necessary for these inspection bodies and that it met the criteria of the international standards in this field.

In response to this recommendation, ASN decided to have the department responsible for the oversight of nuclear pressure equipment (DEP), based in Dijon, formally accredited by the French accreditation committee (COFRAC) in compliance with international standard ISO 17 020.

Incidents in nuclear facilities

Event notification Exposure incident of a worker rated level 2 on the INES – CEA Grenoble

On 3rd September 2013, the French Alternative Energies and Atomic Energy Commission (CEA) and one of its outside contractors, D&S, notified ASN of an exposure incident of a worker from D&S.

The exposure occurred on 23rd August 2013 during low-level waste and rubble sorting operation at the Laboratory of Activated Material Analysis (LAMA), under decommissioning. Within the next few days, ASN will conduct inspections of D&S and CEA in order to determine the circumstances of the event, to check the operation conditions and to investigate the causes of this event.

The results of the analysis on the passive dosimeter of the worker, which was carried out by IRSN, indicated a value exceeding one of the regulatory limits. The worker is subject to a specific medical monitoring.

Owing to exposure exceeding one of the regulatory dose limits for a worker, this event has been temporarily rated level 2 on the International Nuclear and Radiological Event Scale (INES), which comprises eight levels from 0 to 7.

Transport of radioactive material

ASN identifies several areas for progress concerning the level of safety for the transport of radioactive material in France and draws up an action plan

ASN has been responsible for regulating the safety of the transport of radioactive and fissile materials used for civil purposes. ASN's actions in this field comprise:

- From the safety viewpoint, regulating all the stages in the life of a package, from design and manufacture through to maintenance;
- Monitoring compliance with the safety regulations during the shipment and transportation of the packages.

In 2012, ASN produced a report on the state of the safety of the transport of radioactive material used for civil purposes in France, drawing on the ASN inspection reports and on the events notified by the consignors and shippers between 2007 and 2011. Based on these data, areas for improvement were identified for the various stages in the transport of radioactive material.

Given the large number of packages transported, ASN considers that the level of safety of the transport of radioactive material in France is relatively satisfactory. It has however identified certain areas for progress concerning three fields: BNIs, small-scale nuclear facilities and transport companies. The report is available [here](#).

Medical, industrial and research activities

ASN and ANSM renew their MOU in the field of health products emitting radiation protection

Jean- Christophe Niel, Director general of the Nuclear Safety Authority (ASN) and Dominique Maraninchi, Director General of the National Security Agency of Medicines and Health Products (ANSM), signed September 2, 2013 a new agreement framework for cooperation in the field of health products emitting ionizing radiation. The ANSM and ASN decided to continue their cooperation in order to develop synergies facilitating the exercise of their respective duties and to carry out joint or complementary actions related to radiation protection in the production, distribution and use of health products emitting ionizing radiation, such as radiopharmaceuticals, accelerators, scanners.

Several important actions since the signing of the first MOU in 2009 include the implementation of a joint portal for the declaration of significant radiation protection events (ESR) and reports of materiovigilance (malfunction of medical devices) in the field of radiotherapy. a positive feedback has already been established.

For more information click [here](#).

ASN renews also the respective MOUs with SFRO and SFPM

Under the same framework as the renewal of the MOU with ANSM, ASN has renewed the existing MOU with the SFRO on 28/11/2013 and will renew its MOU with the SFPM on 5/12/2013.

Discrepancies between displayed and effective values of treatment parameters during EBRT

In 2012-2013, ASN received 3 notifications of events in external beam radiotherapy due to a defective potentiometer and no secondary read-out (which could have alerted the users).

This problem can affect several positioning parameters: the jaw aperture, the gantry angle, the collimator rotation, the table position. The screen shots of one of these events which has been registered in SAFRON.

An upgrade of the older linacs (Clinac Varian) can solve some of these issues but not all, and to have this correction done the RT departments have to pay.

ASN is in relation with ANSM (French Agency for Medical Devices and Drugs Safety) to manage this issue.

ASN Documents in the medical field available in English

- ASN-SFPM Document: Medical Physics Personnel for Medical Imaging Requirements, Conditions of Involvement, and Staffing Levels (Available [here](#)).
- Next issue of “Patient Safety” Bulletin, devoted to In Vivo dosimetry to appear in English early 2014.

Occupational exposure

Outlook for the new rules on the delimitation and access to restricted areas.

After publication of guidelines for the development of functions and training of persons competent in radiation protection, the European dose passbook proposed by HERCA and the evolution of SISERI, the General Labour Directorate (DGT) and nuclear Safety Authority (ASN) have presented the outlook for new rules on delimitation and access to restricted areas defined under the Labour Code.

For more information click [here](#). (in French).

Radiological quality of drinking water

Assessment of the radiological quality of packaged water produced in France

Directorate General for Health (DGS) and the Nuclear Safety Authority (ASN) has entrusted the Institute for Radiological Protection and Nuclear Safety (IRSN) conducting a series of tests to have a state of recent and comprehensive radiological quality of water produced in France conditioned places. 142 packaged-waters in total (75 waters source

and 67 natural mineral waters) were analysed by IRSN in 2012. This study, conducted for the purpose of information, focused on a single sample for each water sample and drawing up a "snapshot" of the radiological characteristics of packaged waters produced in France picture, the date of sample analysis.

The measurements show that the radiological quality of packaged water produced in France is generally satisfactory. Exposure to ionizing radiation resulting from the consumption of these waters is minimal.

This work complements two previous reviews of radiological quality of water tap made in 2005-2007 and 2008-2009. They are part of a European and national context of revising the regulation of radiological quality of water intended for human consumption.

The report is available [here](#) (in French).

Radon

Plans to organise a European Workshop on National Radon Action Plan

ASN, jointly with NRPA, have plans to organise a European workshop on radon national plans with the following objectives:

- To provide a forum for European countries to exchange information and experience related to the existing national strategies for reducing radon exposure
- On the basis of good practices, to establish recommendation for European national authorities, in order to facilitate the preparation of the National Radon Action Plan, required by the European BSS (and IAEA BSS).

The topics to be covered: items listed in the annex XVI of the new BSS. The workshop is targeted primarily on regulators and decision makers from European countries identified by NRPA and ASN, taking into account their experience in the implementation of national or regional radon strategies (at the stage Norway, France, UK, Ireland, Finland, Sweden, Switzerland, Germany, Spain and the Czech Republic). Also to representatives of HERCA's members, representatives of US, Canadian and Russian Authorities as well as the UE Commission, WHO and IAEA representatives. Planned date: May / June 2014.

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IRELAND – S. FENNEL (RPII)

Theft of seven lightning preventors

Over the weekend of the 27th September 2013, seven lightning preventors were stolen from a premises in Swords Co. Dublin. The items belonged to a steeplejack and roofing contractor, who had gone into liquidation and were being stored on the premises pending a resolution of their final disposal. Despite an intensive investigation by An Garda Síochána, the Irish police force, the preventors haven't been recovered.

One of the interesting facts relating to this incident was the significant coverage in print, television and social media. In particular the news item was picked up on Twitter with an estimated public reach for RPII's message of one million people, in a population of 4,5 million, given the pattern of 'tweets' that emerged. This demonstrates the increasing importance of regulatory bodies having a presence on social media.

Radioactive Waste Disposal

In 2010 the Irish Government adopted a national policy on radioactive waste management. One of the core objectives of this policy is the reduction of Ireland's radioactive waste inventory through a phased source reduction programme. In the absence of a national radioactive waste facility, all radioactive waste must be exported out of Ireland to authorised facilities overseas. This reduction programme is almost complete and has resulted in a dramatic reduction in Ireland's radioactive waste legacy with the number of disused radioactive sources, with half lives greater than ten years, held by private and State licensees falling by 99 per cent since 2010. A separate objective in the national policy is the establishment of a national radioactive waste facility and this project will be progressed in the coming years.

Graded Model for Authorisation

The RPII has recently developed a proposal for a graded, risk-based approach for regulating the use of sources of ionising radiation. The model, which is consistent with the requirements of the new BSS, was developed by the RPII's Regulatory Service and provides for different forms of authorisation including licensing, registration and notification, depending upon the nature of the source(s) and the activity being carried out. The report can be downloaded from the RPII website.

<http://www.rpii.ie/RPII/files/e6/e6e153b4-f2c6-4e2a-8483-8e0ca163657f.pdf> □

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SPAIN – A. PÉREZ-MULAZ, C. ALVAREZ (CSN)

Participation in UNSCEAR (United Nations Scientific Committee on the Effects of Atomic Radiation.)

By Resolution 66/70 of the General Assembly of United Nations of 9 of December of 2011, Spain became member of the UNSCEAR. Since 2007, Spain had been invited to this Committee as an observer. Starting in 2012 is participating as a regular member.

Industrial facilities

Industrial radioactive facilities with mobile gamma-graphy equipment: A regulatory letter has been addressed to all facilities, including the conclusions of the dose analysis performed by CSN, showing an ongoing lowering in doses to workers, and implementation of specific plans to reduce these doses, setting an objective of maximum doses below 9 mSv/year.

In collaboration with the industrial radiography industry, different activities related to emergency actuation in mobile radiography have been carried out, including production of audio-visual materials.

Natural radiation

Continuation of a CSN Plan on Natural Radiation, that has lead to issuing two guides on the subject

- Guide 11.03 – Methodology for the evaluation of the radiological impact of NORM industries
- Guide 11.04 - Methodology for the evaluation of radon exposure at work places

Ongoing projects in 2013 include publication of regulation on NORM waste management, and increased coverage of the national radon map.

Medical procedures

Two projects included in the framework of the agreement between Health Authorities and CSN described in previous ALARA NEWS are now functional:

- DOPOES, a survey of the procedures used for medical radiation diagnosis in Spain, their frequency and the doses imparted to patients and population, is reaching its final stages and the final report is expected by September 2014. The Universidad de Málaga with the collaboration of the Scientific Societies and Health Authorities is carrying out this project.

- EPI-CT, is the study of dose from CT scanners in children and teenagers which is part of the European project with the participation of 11 European countries (epidemiological study to quantify risks for paediatric and optimise doses). This project is performed by CREAL (Environmental Epidemiology Research Centre) in Barcelona, through December 2015.

CSN has been actively involved along with Fundación del Hospital Clínico San Carlos de Madrid and several European partners in the recently finished ACCIRAD project. ACCIRAD is an EU-funded project. The objective of this project was to perform (1) an EU-wide study on the implementation of the requirements given in the Medical Exposure Directive (Council Directive 97/43/Euratom; MED Directive) aimed at the reduction of the probability and the magnitude of accidents in radiotherapy and (2) to develop guidelines on a risk analysis of accidental and unintended exposures in external beam radiotherapy, which can significantly contribute to the improvement of patient safety. The consortium was lead by the Greater Poland Cancer Center ([GPCC](#), Poland). Furthermore, project partners are the Radiation and Nuclear Safety Authority ([STUK](#), Finland), the Nuclear Safety Authority ([ASN](#), France), the CRP Henri Tudor ([Tudor](#), Luxembourg), the Fundacion Investigacion Biomedica Hospital Clinico San Carlos (FIB HCSC, Spain) and the European Society for Radiotherapy and Oncology ([ESTRO](#)). CSN has applied for the continuation project – SAFERT – that aims to develop integrated European methodologies for event notification and risk assessment.

Ibero-American Regulatory FORUM

Two active FORUM (<http://www.foroiberam.org/>) projects are related with ALARA:

- The project to develop a Licensing and Inspection Guide for Cyclotron facilities, under the leadership of the Brazilian regulator, with representatives of seven Ibero-American countries, Spain and the IAEA has come to an end, and has been comprised by one workshop and three meetings during the years 2011 through 2013. The final guide has been issued and is awaiting final approval by the Presidents Conference, prior to publication.
- A new project to develop a "Guide to promote and develop the culture of the Radiological Safety practices with sources of ionizing radiation", which aims to develop a program to help develop Safety Culture awareness in both users of radioactive sources and regulators. There has been two meetings of this project, and it will finalize in 2014

Radiological Protection FORUM

Work on the radiological protection FORUM continues concerning to the Medical field, the Industrial field and the Radiological Protection Units (UTPR), between CSN, Medical Physics and Radiological Protection Associations. Their aim is to encourage dialogue in order to improve Safety and Radiological Protection in the different practices and to favour the communication between regulators and stakeholders.

Two projects are in progress in this area: First, Project MARR, a trial of the application of risk analysis methodologies (in particular Risk Matrix) to 11 radiotherapy services, following the information provided by the project developed by the Iberoamerican

FORUM in this matter. The second one, DOMNES, is aimed at the record and analysis of dosimetric data of Nuclear Medicine patients.

INES Scale

- Participation in the INES Advisory Committee of IAEA, whose role is to establish and provide clarification in the policy regarding the application of the INES Scale to nuclear, radiation and transport events, as well as to review the rating of the annual events notified to the Agency.
- Participation in the IAEA meeting to study to introduce the medical events in relationship with patient in the scale

Incidents

So far 17 incidents have been reported in 2013, 10 of them in industrial facilities and 7 in medical facilities. This number and split percentages between industrial and medical facilities is consistent with the trends observed in previous years.

Other participations

- CSN takes part in the “Permanent Group of Experts” of France Authority (ASN), group of medicine. This group holds meetings every two months in Paris.
- Ongoing participation in HERCA working groups.
- CSN was a major participant in CURIEX (Cáceres Urgent Response International Exercise), an emergency drill carried out in November around the Almaraz NPP in Spain, simulating all stages of an off-site nuclear accident, with participation of several international partners (Belgium, Italy, France, UK, Portugal, Morocco, etc...). The exercise aimed to drill the Cáceres Nuclear Emergency Plan, as well as practicing the intervention of national and international support teams, in the case of an emergency at the Almaraz nuclear power plant that affects the plant surrounding countryside. CURIEX-2013 was 85% co-funded by the European Commission's Humanitarian Aid and Civil Protection department ECHO.

Information

- CSN provides an English version of all the Regulation and CSN Instructions at the website: www.csn.es.

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UNITED KINGDOM – P. SHAW (PHE)

- PHE now provides an approved headband dosimeter for assessing the dose to the lens of the eye in terms of $H_p(3)$.
- A UK hospital was prosecuted and received a fine of £30,000 (plus £15,000 legal costs) when an interventional radiologist received finger doses more than double the annual dose limits in just 3 months.

The work involved the insertion of biopsy needles into patients, which the radiologist carried out using the CT scanner operating in continuous "fluoroscopy" mode, giving "real time" x-ray images which he observed whilst standing next to the scanner. The scanner was used by a number of other consultants for the same purpose but they used the conventional "step and shoot" method which required them to leave the room when the CT scanner was generating x-rays. However, when the interventional radiologist arrived at the hospital he favoured the fluoroscopy mode, operating the x-rays for periods of up to 30 seconds at a time. Moreover, whilst inserting the biopsy needles he placed his hands directly in the main x-ray beam, resulting in an overexposure of radiation to his hands.

An investigation by the Health and Safety Executive (HSE) found that the Trust had never carried out a risk assessment for the CT scanner operating in the fluoroscopy mode so a safe system of work was not developed. In addition, managers were aware that this technique was being carried out but did not ensure proper procedures were followed.

- PHE has issued a report reviewing the public health impact of shale gas extraction ("fracking"). Much of the report is concerned with chemical contamination, but there are sections on radon and NORM (for which the public health impact is not expected to be significant providing existing regulatory controls are complied with. The report can be found at: http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317140158707
- Also published is the 2012 HPA intercomparison of passive radon detectors. In total, 35 laboratories from 13 countries (including a number of EAN members), took part. Some laboratories submitted more than one set of detectors, so 42 sets of detectors were exposed together in the radon chamber. Results for 41 sets were reported by 34 laboratories. The report can be found at:

<http://www.hpa.org.uk/Publications/Environment/PHECR CERReportSeries/1308Resultsofthe2012HPAintercomparison/> ■

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