

Challenges of Implementing Occupational Radiation Protection in (Eastern) Europe

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Member countries

[Austria](#) (1995) [Belgium](#) (1952) [Bulgaria](#) (2007) [Croatia](#) (2013) [Cyprus](#) (2004)
[Czech Republic](#) (2004) [Denmark](#) (1973) [Estonia](#) (2004) [Finland](#) (1995) [France](#) (1952)
[Germany](#) (1952) [Greece](#) (1981) [Hungary](#) (2004) [Ireland](#) (1973) [Italy](#) (1952) [Latvia](#) (2004)
[Lithuania](#) (2004)
[Luxembourg](#) (1952) [Malta](#) (2004) [Netherlands](#) (1952) [Poland](#) (2004) [Portugal](#) (1986)
[Romania](#) (2007) [Slovakia](#) (2004) [Slovenia](#) (2004) [Spain](#) (1986) [Sweden](#) (1995)
[United Kingdom](#) (1973)

Candidate countries

[Albania](#)
[Iceland](#)
[Montenegro](#)
[Serbia](#)
[The former Yugoslav Republic of Macedonia](#)
[Turkey](#)

Potential candidates

[Bosnia and Herzegovina](#)

Other countries

[Switzerland, Norway](#)



Radiation Protection - Current Situation

- EU countries – national legislation based on the **Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom,**
- Directive 96/29/Euratom establishes the basic safety standards. The provisions of that Directive apply to normal and emergency situations and have been supplemented by more specific legislation.
- Council Directive 97/43/Euratom, Council Directive 89/618/Euratom, Council Directive 90/641/Euratom and Council Directive 2003/122/Euratom cover different specific aspects complementary to Directive 96/29/Euratom
- *all in principle based on ICRP 60, IAEA BSS (SS115) and other IAEA Safety Standards (Safety Fundamentals, ...)*

Radiation Protection - Future

- Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards for protecting people and the environment
General Safety Requirements Part 3, IAEA, 2011
IAEA Safety Guide on occupational radiation protection under preparation
IRRS missions – compliance of ntl. legislation with IAEA SS (esp. GSR Part 1 – 7)
IAEA RASIMS – overview of countries status with respect to the compliance with IAEA SS (TSA2 – RP in occupational exposures)
- COUNCIL DIRECTIVE 2013/59/EURATOM of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation
Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 6 February 2018

Occupational Radiation Protection in European Countries

- Basic Principles – established in Dir.29/96
- Dir 641/90 Euratom - „Outside“ Workers (IAEA „Itinerant“ workers) – established responsibilities for the protection of worker performing work in controlled area operated by another person than his/her employer
- European Study on Occupational Radiation Exposures (ESOREX) – surveying changes in the personal doses after implementation of Dir 29/96 with new limits (ESOREX WEST, ESOREX EAST, ESOREX 2005,...)
- ALARA – European ALARA network (**EAN**)
Regional European and Central Asian ALARA Network (**RECAN**)
- Technical Recommendations for Monitoring Individuals Occupationally Exposed to External Radiation (Radiation Protection No160, 2009)
http://ec.europa.eu/energy/nuclear/radiation_protection/doc/publication/160.pdf

European ALARA Network -EAN

- European Commission created an European ALARA Network (EAN) in 1996, to support further specific European research on topics dealing with optimization of radiation protection, as well as to facilitate the dissemination of good ALARA practices within the European industry, research and medical sectors. After the end of the financial support of the European Commission, in 2005, EAN became self sustainable as a not-for-profit association under the French law. 20 countries are participating to the network, which is coordinate by CEPN (France) and PHE (UK).
- The Network complements other existing structures such as the International System on Occupational Exposure ([ISOE](#)) and the European Studies on Occupational Radiation Exposure ([ESOREX](#))
- Last WS (15.)- ["Improving ALARA Culture through Education and Training"](#), Rovinj, Croatia, 7-9 May 2014

Website

<http://www.eu-alara.net/>

The Regional European and Central Asian ALARA Network- RECAN

- The objectives of RECAN was to support the development of a sustainable regional network, which facilitates information exchange and an integrated approach to practical and cost-effective implementation of the principle of optimization of radiation protection, the As Low As Reasonably Achievable (ALARA) principle, in participating Member States.
- The main outputs of the RECAN will consist of the organization of workshops, publication of a Newsletter and exchange of information through a dedicated website. Links are also provided to other networks covering many radiation protection areas.
- Co-operation with EAN – reciprocal participation in events,
- Financial support of IAEA, Steering Committee Meetings, Workshops
- Last WS (7.) - [Optimization of Occupational Exposures in NORM Industries](#) (Tbilisi, Georgia, 2011)

Website

- <http://recan.webplus.net/>

New Challenges in Occupational Radiation Protection

- European Countries – implementation of European legislation and IAEA Safety Standards
- The Base – identical – ICRP 103
- Interpretation and goals – in some areas different

New Challenges in Occupational Radiation Protection

General Common Issues

- **Exposure situations** – replacing practices and interventions
- **New limit for lens of the eye** – average 20mSv/y, 100mSv/5y and 50mSv/y – monitoring?
- **Optimization** – more emphasized, more specific requirements for dose constraints
- **Dose constraints for occupational exposures** – set by operator – levels?
- Regulation of exposures from **natural sources**
- **Emergency** exposure situations

New Challenges in Occupational Radiation Protection

EU BSS – specific (different) requirements

New limit for radiation workers – 20 mSv/y only with possibility to authorize 100mSv/5y (uranium mines?),

Definition of radiation worker – when exposure can exceed 1mSv/y

Categorization of radiation workers – A and B

Outside workers – not only category A and not only controlled area,

New Challenges in Occupational Radiation Protection

NORM workplaces – planned exposure situations (EU), licensing, categorization of workers, evaluation of doses, if exceeding 6mSv – specific requirements for workers protection, application of limits

Radon in workplaces – existing exposure situations, but requirement for estimation of doses in all workplaces located in basement or first floor (EU - radon prone areas, 6mSv, 300 Bq/m³ , IAEA – 1000Bq/m³)

Emergency workers – professionals (members of integrated rescue systems, soldiers), but also volunteers (health surveillance required), reference level – 50mSv(IAEA), 100mSv (EU) – actions with possibility to reach this level – voluntarily – problem for fire fighters, policeman, soldiers?

Next Steps

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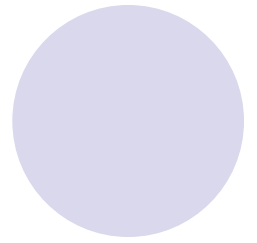
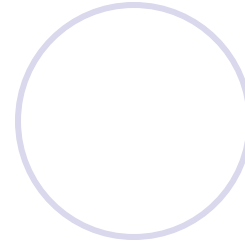
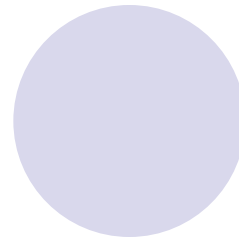
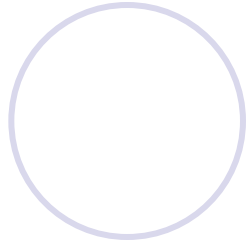
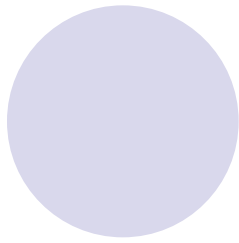
- **IAEA / RASIMS**

- self-assessment carried out by Member States revealed that many feel they **do not have adequate competencies and capabilities to fully comply with the Agency's requirements.** In particular this concerns the assessment and control of occupational exposure, training and quality assurance. Countries have interest in development and strengthening their radiological protection of workers and occupational exposure control; have relevant infrastructure for implementation of project activities, human resources are available.

Next Steps



- **Next few years** – common effort to implement all standards as far as possible on the similar way
- EC – project initiated to identify common issues and organize a series of WS to enable an exchange of views (2015 – 2016)
- HERCA (the Heads of European Radiation Competent Authorities) – working groups – focused also on the implementation of specified issues into national legislation
- New IAEA regional project (RER9128) was launched in 2014:
“Strengthening National Capabilities for Radiological Protection of Workers and Occupational Exposure Control”.
- IAEA assistance under the project will make use of all available modalities for regional TC including expert advice, meetings and training including capacity building through national training courses and workshops, national consultants' meetings, standard training material and relevant Agency publications.



Thank you for your attention