



Progress with the revision and consolidation of the European BSS and the role of networking for their Implementation

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Outline

- **Revision and consolidation of European Radiation Protection Legislation**
- **Natural radiation sources**
- **Role of networking for the implementation of European Legislation**



Role of the European Union

- **Euratom Treaty (1957)**
 - allow the development of nuclear energy while protecting the Health and Safety of workers and members of the public
- **Establish uniform Basic Safety Standards**
 - Ensure their application (transposition; implementation; infringement procedure)
- **Ensure the protection of the “environment”**
 - “air, water, soil”
- **Research (fission/fusion Framework Programmes)**
 - radiation biology



Development of a new European Basic Safety Standards Directive

- **Consolidation of existing European radiation protection legislation**
- **Revision of the Euratom Basic Safety Standards (Directive 96/29/Euratom)**



Consolidation of European Radiation Protection Legislation

- Basic Safety Standards, Directive 96/29/Euratom
- Medical Exposures, Directive 97/43/Euratom
- Public Information, Directive 89/618/Euratom
- Outside Workers, Directive 90/641/Euratom
- Control of high-activity sealed radioactive sources and orphan sources, Directive 2003/122/Euratom
- Radon, Commission Recommendation 90/143/Euratom



Motivation for Revision of Euratom BSS

- **More binding requirements on**
 - Natural radiation sources
 - Criteria for clearance
 - Cooperation between Member States for emergency planning and response
- **Review of regulatory control system**
 - Graded approach to regulatory control
- **New recommendations by ICRP**
- **Revision of International Basic Safety Standards**



Impact of new ICRP Recommendations

- **Based on three different exposure situations**
 - Existing
 - Planned
 - Emergency
- **Constraints and Reference levels**
 - Source related prospective tool for optimisation
 - Societal basis – Bands of constraints
- **Forthcoming ICRP Documents on**
 - Emergency exposure situations
 - Existing exposure situations (rehabilitation of contaminated areas)



Topical issues for BSS Revision

- **Natural Radiation sources**
 - NORM industries
 - Building materials
 - Radon
 - Cosmic radiation (aircrew)
- **Exemption and Clearance**
- **Graded approach to regulatory control**
- **Education and training**
- **Emergency preparedness and response**
- **Occupational Exposure (outside workers)**
- **Protection of the Environment**



NORM industries

- **“Positive” list of types of industries**
 - Identification of industries of concern
- **Activity concentrations above 1 Bq/g (10 Bq/g for K-40)**
 - Higher values for segments of the decay chain
 - Not applicable to recycling in building materials
 - Lower values where appropriate in specific cases
- **Assessment of doses to workers**
 - 1-6 mSv: keep under review – apply ALARA
 - > 6 mSv: controlled areas
- **Assessment of effluents and disposal of waste**
 - Constraint of 300 μ Sv – 1 mSv to the public
 - Recycling rather than radioactive waste disposal



Natural radiation sources

- **Planned exposure situations:**
 - identified NORM industries
 - workplaces with high radon concentrations
 - placing on the market of building materials with high activity index
- **Existing exposure situations:**
 - Radon in dwellings
 - “normal” NORM industries and building materials
- **Links:**
 - radon as an exposure pathway in NORM industries
 - recycling of NORM residues in building materials



Radon

- **Requirement for a national action plan**
 - All sources: soil, building material, water
 - Definition of radon prone areas
 - Reference levels for existing dwellings, workplaces and public buildings
 - Building codes for new buildings
- **Provide information**
 - House owners
 - Building Profession
- **Occupational Exposure**
 - Radon measurements
 - Reference levels



Building Materials

- **Identification of types of building materials liable to be in the scope of control measures**
 - List to be established by national authorities
 - based on indicative list given in BSS
- **Categorisation of building materials**
 - on the basis of an activity index and
 - minor or major structural component
 - exemption
- **Placing on the market subject to regulatory control**
 - if the building material is identified by national authorities
 - through assessment on the basis of a reference level
- **Trade, labelling or information**



Exemption and clearance

- **Same levels for both concepts**
 - Basis: IAEA RS-G-1.7
 - Study launched to
 - evaluate differences with EC RP 122,
 - assess impact of lowering the exemption levels



Regulatory Control

- **Graded Approach to Regulatory Control**
 - Exemption
 - Notification
 - Registration
 - i.e. “authorisation in cases of a limited risk”
 - Licensing
- **In line with approach for NORM industries**



Outline of new Euratom BSS

- Preamble
- Title I Subject matter and Scope
- Title II Definitions
- Title III: System of Protection
- Title IV: Responsibilities for Regulatory Control
- Title V: Requirements for Education and Training
- Title VI: Justification and Regulatory Control of planned exposure situations
- Title VII: Protection of Workers, Apprentices and Students
- Title VIII: Protection of Patients and other individuals submitted to medical exposure
- Title IX: Protection of Members of the Public
- Title X: Protection of the Environment
- Title XI: Emergency exposure situations
- Title XII: Existing exposure situations
- Title XIII: Final provisions



Revision process

How to assess the impact of the modifications proposed?

- Presenting concepts and ideas at an early stage
- Discussing potential impact with those who will be involved in the implementation of the new regulations

Where?

- International symposia, conferences, workshops...
- Associations of stakeholders, e.g. authorities, industry, unions, ...
- Specialised networks, e.g. **ALARA networks**



Idea of networking

- **Decentralised support to implementation**
- **Create a platform for sharing information on similar issues, problems, questions (on a voluntary basis)**
- **Link different groups of stakeholders, e.g. regulatory authorities, industry, designers, vendors, workers/unions, ...**
- **Involve those with practical experience in operational radiological protection**
- **Provide the means for communication (workshops, websites, electronic communication, ...)**



European Network Projects

- **European ALARA Network (EAN)**
- **European ALARA Network for NORM industries**
- **European ALARA Network for the non-destructive testing industry**
- **European Study on Occupational Radiation Exposure (ESOREX)**
- **European Training and Education in Radiation Protection Platform (EUTERP)**



Why ALARA networking?

- **Information and experience exchange on dose reduction programmes**
 - Regulatory requirements, administrative and operational procedures, practical experience ...
- **Information and experience exchange on failures, incidents, accidents, ...**
- **Guidance on ALARA, best practices, ...**
- **Establishment of Safety Culture, ALARA Culture**
 - Dissemination of experience



European ALARA Network (EAN)

Created in 1996 by the European Commission

Objectives:

- promote wider and uniform use of optimisation techniques in the various fields of occupational application in Europe
- provide focus and mechanism for the exchange and dissemination of information from practical experience
- propose topical issues of interest that should be subject of European meetings, workshops or research projects



EAN Products

- **Annual topical workshops**
 - 10th workshop, Prague, 12 – 15 September 2006
- **Newsletters**
- **Surveys**
 - e.g. on best practices
- **Network of colleagues – personal contacts**



10th European ALARA Network Workshop on

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

SÚJB



Marie Curie - Skłodowska

EF European Federation for Non-Destructive Testing **NDT**

<http://alara06.jaderne.info/>

September 12 - 15, 2006

Czech Republic
Prague, Brehova 7, 115 19

Pra	ha
Pra	ga
Pra	g



European ALARA Network for Naturally Occurring Radioactive Material (EAN-NORM)

Project initiated and financed by the European Commission

Project Duration: December 2006 – December 2008

Objectives:

- promote the establishment of guidance and recommendations on operational and practical measures to optimise doses to workers and to the general public during industrial applications involving naturally occurring radioactive material
- facilitate the exchange and dissemination of information on regulatory initiatives, industry activities and operational radiation protection measures in the field of naturally occurring radioactive material



Expected EAN-NORM deliverables

- **Identification of, and contact with relevant stakeholders**
- **Review of implementation of optimisation in NORM industries**
- **Assessment of the level of harmonisation of radiological protection in NORM industries**
- **Establishment of a system for permanent information exchange**
 - Workshops, websites, communication fora



EC expectations from this workshop

- **presentation by EC of current ideas on how to improve the EU regulatory framework with regard to NORM industries**
- **Open discussions in breakout sessions**
- **Identify potential impact on different stakeholders - industry, regulatory authorities, workers, public, ...**
- **Receive input for further improvement**
- **Impact assessment**



Conclusions

- **European legislation**
 - Consolidation of existing European radiation protection legislation
 - Revision of the Euratom Basic Safety Standards
 - ⌘ Impact of new ICRP Recommendations
 - ⌘ Integrate natural and artificial sources of radiation
 - ⌘ Graded approach to regulatory control

- **Networking**
 - Optimisation of doses
 - Dissemination of ALARA culture
 - Enhance awareness
 - Stakeholder involvement



Further Information

- www.ec.europa.eu/energy/nuclear/radioprotection
- www.eu-alara.net
- www.ean-norm.net
- www.esorex.cz
- **augustin.janssens@ec.europa.eu**