

OPTIMISATION OF RADIATION PROTECTION (ALARA): A PRACTICAL GUIDEBOOK

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EAN WG ON ALARA CULTURE

Created in 2009 (first meeting in October)

- Elaboration of a paper on « The Development and Dissemination of ALARA Culture »
 - Presented at IRPA 13- Glasgow in May 2012
- Decision to elaborate an update version of the book « ALARA from Theory towards Pratice » (published by EC in 1991)



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Role and Responsibilities of Stakeholders

Positive attitudes towards radiological risk at the individual and/or organisational level

A questioning attitude

Did I do what I could to save doses? is the management committed to the introduction of new technologies to save doses or prevent accidents?,...

Openness and transparency

Open to changing habits, reporting mishaps, explaining radiation protection options,...

Commitment to dose reduction

Appropriate individual behaviour in the presence of radiation sources, willingness to invest in protection measures,...



Role and Responsibilities of Stakeholders





ALARA Tools









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Specificities of ALARA Process According to Exposure Situation

Planned Exposure Situations

Occupational exposures in nuclear and industrial field

- Long experience
- Specific RP/ALARA organisations
- Structured approach

Public exposure from planned activities

- Usually less formal approach
- Search for "minimisation"
- Use of dose constraint

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Specificities of ALARA Process According to Exposure Situation

Existing Exposure Situations

- Natural background of radiation (radon, ...)
- Residual radioactive material from a nuclear or radiological emergency
- Potential for optimisation varies a lot according to the situations
- National, regional and sites specific reference levels
- Pro-active identification of stakeholders
- Self-help protective actions

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Specificities of ALARA Process According to Exposure Situation

Emergency Situations

- Public Exposure
- Emergency workers / responders

- Integration into the planning stage of protection strategies and during emergency
- Active involvement of stakeholders (authorities, police, fire fighters, etc.) in the planning stage
- Lessons learned from past accidents



Specificities of ALARA Process According to Exposure Situation

The Medical Field

Education and training

Occupational exposures

- Dose reduction techniques according to the type of procedure and technique applied
- Radiology, nuclear medicine, radiotherapy

Patients

- Justification of exposure
- Dose reduction techniques

Comforters and carers

- Usually very low doses
- Information, appropriate instructions



Examples

- Illustration of all exposure situations
- All examples come form presentation / publication during various Congresses / Workhop

> Try to adopt a similar structure

- $\circ\,$ What is the example illustrating
- o Context
- o Methodology
- o Results
- \circ Lessons learned

APPENDIXES

Basic concepts of radiation protection and their origins

- Health effects
- Justification
- Optimisation
- Limitation

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• Exposure situations

Major Organisations Involves in RP System

- Elaboration of scientific basis
 - UNSCEAR, BEIR
- Elaboration of system of protection
 - ICRP, ICRU
- Other organisations involved in standard, regulation, recommendations
 - EURATOM, IAEA, WHO,...
 - Networks, Professional Associations,...

Example of Check-Lists

- Identification of protective actions
- Audits,

• ...



Next Steps

- Finalisation of the book
- Sent for comments to EAN
- Publication as a PDF format to be downloaded on EAN Network



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Thank You!!!

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