EUROPEAN ALARA NETWORK

17th EAN Workshop

Summary and Recommendations

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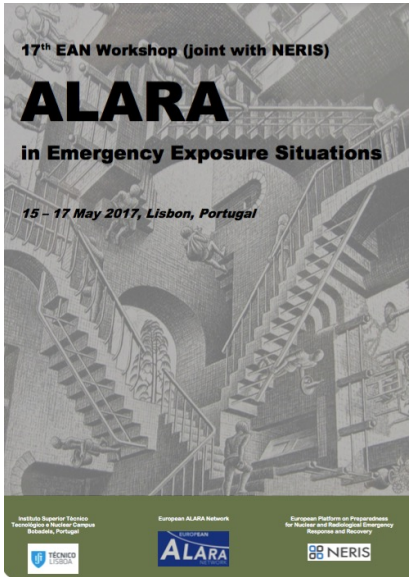
"ALARA in Emergency Exposure Situations"

Lisbon, Portugal 15-17 May 2017

Workshop on ALARA in emergency situations

- Why?
  - ICRP and BSS emphasis to apply ALARA in emergency situation and post-accident situations
  - reexamine the challenges in applying the ALARA principle, taking the lessons learned from Fukushima into account
- Context
  - ICRP, discussion on acceptability of risk
  - IRPA discussion on reasonableness
  - Collaboration with NERIS



Objectives of the Workshop

- To show, in particular from the experience of Fukushima accident, the challenges posed by the optimisation of exposures in emergency and post-accident situations

- To review the national arrangements for assessing, monitoring and mitigating the radiological consequences of an emergency, especially with regard to applying the ALARA principle to public and occupational exposures

Objectives of the Workshop

- To review the arrangements for managing emergency doses to workers
- To review the arrangements for providing ALARA-based training for the different types of stakeholders who would be engaged in the emergency response and long-term recovery actions
- To bring together stakeholders
  - to exchange practical ideas and experience
  - to identify further improvements
  - to produce recommendations

Working Group Topics

WG1 - Can the ALARA principle be fully applied in Emergency Exposure Situations for the members of the public

WG2 - Can the ALARA principle be fully applied in Emergency Exposure Situations for the occupationally involved individuals?

WG3a and WG3b - Predict the unpredictable!? How to ensure that emergency plans are optimal from a radiation protection point of view?

Report back from Working Groups

Oral Presentations and discussions

Summary of topics and themes

1. Guidance on Emergency Preparedness

- IAEA, ICRP, WHO, EC
- Justification, optimisation and stakeholder involvement are key factors but their individual importance varies with time (stage of emergency) and prevailing circumstances
- Which circumstances have most influence on decision making?
- Emphasis on these factors will evolve
- Tools for decision making – OILs, Reference Levels, modelling and monitoring

2. Mitigating measures

- National arrangements – protection strategies
- Protective measures/countermeasures
- Early/late measures
- Aim to protect – not driven by fear of criticism
- To obtain the ‘best’ outcome – most reasonable taking into account societal/economic factors
- Flexibility of strategy/planning
  - Avoid linear planning
  - Improve resilience of emergency plans

3. Reference Levels

- A tool for :
- - selecting and assessing protection strategies
- - driving optimisation of residual dose and restricting dose to individuals
- Enable flexibility and adaptation to a changing situation
- Poorly understood and applied

4. Dose assessment and monitoring

- Preparedness and predictions
  - Enable preparation of protection strategy
  - Uncertainties in dose modelling and assessment
  - Protective measures

- Real time measurements
  - Characterisation of source term/modelling
  - Personal dose monitoring
  - Environmental sampling

4. Dose assessment contd)

- Forecasting….future predictions

- The issue of conservatism – application of protective measures, impact on lifting of protective measures i.e. food restrictions, return to home
  - Reducing uncertainties

5. Stakeholders

- Preparedness / pre-accident
  - Identification of key stakeholders
  - Education of risk
  - Involvement and engagement
  - Policy makers (lessons learned – be proactive)

5. Stakeholders contd)

- Accident phase
  - Compliance with protective measures
  - Workers/responders – ongoing involvement

- Recovery phase
  - Education, training tools
  - Self-sufficient to management own needs

6. RP Culture, information and training

- Establish a uniform knowledge base to aid communication, interpretation and understanding, build trust and security
- Enable workers to make informed choices
  - Specific groups may need additional information
- Increase RP culture in peacetime
- Reference Levels as a tool for planning – expect revisions
- Expectations in relation to protective actions
  - Recovery – implies a return to original state

6. RP Culture, information and training contd)

- Channels for dissemination of information
  - Website (Q&A)
  - Social media
- Engagement with experts in social sciences/ humanities

Initial Recommendations

- All relevant workers to be identified as radiation workers with clear guidance and monitoring provided for comparison to relevant reference level
- For all workers optimisation to be driven towards a dose limit of 20 mSv in the late phase
- Protection measures should be applied to the population collectively although differentiation may be needed for specific exposed groups (age, habits, diet)

Initial Recommendations

- Further guidance/advice needed for the justification of countermeasures ie evacuation
- Arrangements for advance distribution of iodine prophylaxis due to small time window for administration

Initial Recommendations

- Where a largescale accident has implications outside of borders, there should be co-operation and co-ordination between neighbouring countries to ensure timely action and equitable outcomes
  - Incorporation into protection strategy
  - Harmonisation of information to stakeholders

Initial Recommendations

- Radiation protection awareness and training for wide variety of stakeholders in peacetime – with suitable provision for ad-hoc, update training during emergency
- Emergency plans/arrangements to be exercised with emphasis not only on procedures but also suitability of equipment to help drive optimisation at preparedness stage

Future Work

- Consideration of ALARA in relation to transport accidents, accidents involving high activity industrial and hospital sources, malicious uses of radioactive materials, and other events
    - Security of radioactive material / sources
- Development of information and training resources, decision support centres for advice during emergencies

Thanks to

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Thank you for your participation

Feedback request will be sent