Working Group No. 1

Can the ALARA principle fully apply in emergency exposure situations for members of the public?
Reasonableness

• Relates to what is ‘achievable’ – best can do under prevailing circumstances

• Who decides?

• Dependence on prevailing conditions
  • Scale (extent of affected area/number of people)
  • Different stakeholders and timescales
  • Different population groups (sensitivity)

• Has many elements – radiological, non-radiological and practicality
Can the ALARA principle be fully applied in emergency exposure situations for members of the public?

• ALARA applies but with added complexity due to unpredictability of the situation (need for flexibility)
  • Complexity depends on scale of the emergency

• It evolves during the emergency situation

• Collective or individual application
  • Urgent actions applied to community as whole (focus on highest exposed)
  • Inhomogeneous reactions of different age/population groups may be taken into account in longer-term

• Need to continuously consider justification
Evolution of ALARA – in preparedness and response

• Process depends on stage, scenario and phase
  • Need to consider long-term perspectives even at early stages, evolution and how the protective actions will be lifted
  • Decision makers and involvement of stakeholders to be considered

• Preparedness
  • Need for flexibility (cannot predict everything)
  • All hazards approach
  • What is ‘low’ – dose or risk (e.g. separate consideration of sensitive groups)?

• Complexity of considerations (weighting depends on situation)
  • Economic
  • Social, psychological and other health consequences
  • Feasibility
ALARA process and evacuation

• Importance of planning phase
  • Feasibility of action and conditions when not feasible need to be taken into account
  • Precautionary evacuation based on plant conditions and emergency planning zones possible
  • Importance of social mobilisation/cross-sector coordination
    • Communication (views of local population)
    • Practical arrangements (vulnerability analysis)

• Transition to relocation or return
  • Psychological and other associated health effects resulting from resettlement an important factor (incl. the other factors identified in ICRP 101).
  • Re-establishment of lifestyle in new community
  • Sustainability/support recovery of social and economic activities
Application to different situations

• Need to consider internal and external dose
  • Food restrictions implemented in early phase
  • Agricultural actions considered at later stage if necessary
    • Complex decision-making (social & economic pressures)

• Radiological emergency or malicious acts
  • Affected areas and number of people less but unknown radionuclides may be involved

• Arrangements focused on large accident in country not neighbouring or other country
  • ALARA may be more challenging and not planned for
Recommendations

• More effort to define ALARA in preparedness phase needed
• Need to facilitate international cooperation
• Choice of dose criteria in advance and plan for evolution of criteria in response
  • Clarity and common understanding of rationale behind criteria among RP professionals and communication with decision-makers and stakeholders IN ADVANCE
  • Post accident – social, economic and political pressures take over (Chernobyl and Fukushima examples)
• Need to continuously consider justification
• Decision makers and involvement of stakeholders to be considered
• Social mobilisation and cross-sector coordination should be included
Fukushima experience

• Dose projection models were not available in urgent phase

• Planning challenges:
  • Protective actions implement in all directions (public reaction & wind direction)
  • Balance between sheltering and evacuation
  • Sheltering period
  • Pre-distribution of ITB
  • Receiving communities not prepared

• Evacuation
  • Hospitals consider in advance
  • Effect on health and communities
  • Screening for personal decontamination (e.g. at evacuation centre)

• Communications
  • International relations and communication between authorities
  • Provision of suitable information to affected population (e.g. length of evacuation etc.)