

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.)