

NEA Nuclear Energy Agency 

## Emerging Issues in Radiological Protection: An NEA Viewpoint

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Radiation Protection Session  
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NEA Nuclear Energy Agency 

## The NEA Mission

- To assist its member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes.
- To provide authoritative assessments and to forge common understandings on key issues, as input to government decisions on nuclear energy policy, and to broader OECD policy analyses in areas such as energy and sustainable development.

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## OECD/NEA Membership

- Australia
- Austria
- Belgium
- Canada
- Chile
- Czech Republic
- Denmark
- Estonia\*
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Israel
- Italy
- Japan
- Korea
- Luxembourg
- Mexico
- Netherlands
- New Zealand
- Norway
- Poland
- Portugal
- Slovak Republic
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom
- United States

Not member of NEA  
\*Invited to OECD

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## Emerging Issues

- Radiation Biology
- Implementation of New ICRP (BSS)
- Stakeholder Involvement in RP Decisions
- Approach to Optimisation
- Management of Low Doses
- New Nuclear Build

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## Radiation Biology

- Emerging Aspects
  - Radiation-induced cataracts suggest need for new dose limit
  - Radiation Effects on the Circulatory System suggest new risks
- Possible RP Implications
  - Need for new approaches to eye protection (e.g. occupational exposure in medicine)
  - May need new considerations for protection where lifetime doses are high

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## Implementation of New ICRP (BSS)

- Emerging Aspects
  - Use of Dose Constraints
  - Optimisation of Emergency Protection Strategy
- Possible RP Implications
  - Concept needs clarification (by sector)
  - Approaches need study and tools need updating

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## Stakeholder Involvement in RP Decisions

- **Emerging Aspects**
  - Increasing pressure for further decision transparency
  - Increasing focus on consequence management in emergency situations
- **Possible RP Implications**
  - Judgment AND science must be clear
  - Sustained and broad involvement in planning is a necessary challenge
  - Processes and structures for consequence management can be complex

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## Approach to Optimisation

- **Emerging Aspects**
  - Radon: new epidemiology
  - Medical Exposure: significant increases
  - NORM: regulation of new industries being considered
- **Possible RP Implications**
  - Need to revisit focus: highest exposed versus largest number of exposed
  - Develop approaches for more consideration of future risks
  - Consideration of Graded Approach

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## Management of Low Doses

- **Emerging Aspects**
  - Possible outcomes of ongoing research in risks from low doses and low dose rates (US, Europe, Japan) include change
  - Decision making questions (e.g. Tritium: continued public concern)
- **Possible RP Implications**
  - Consider DDREF changes
  - Consider RBE and  $w_r$  changes

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## New Nuclear Build

- **Emerging Aspects**
  - Many new plants planned
  - Evolving RP environment
  - Questions of qualified human resources
- **Possible RP Implications**
  - New tools to assess and characterise buildup, e.g. collective dose or new approach?
  - Review of emergency management strategies

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