Principle of Justification

Session 4: Existing exposure situations

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Justification in existing exposure situations

- **Publication 103: The 2007 Recommendations**

  - *"**The principle of justification**: Any decision that alters the radiation exposure situation should do more good than harm."*
  - *"This means that, by introducing a new radiation source, by reducing existing exposure, or by reducing the risk of potential exposure, one should achieve sufficient individual or societal benefit to offset the detriment it causes." (Paragraph 203)*

  - *"..., the principle of justification is applied in making the decision as to whether to take action to avert further exposure. Any decision taken to reduce doses, which always have some disadvantages, should be justified in the sense that they should do more good than harm."* (Parahraph 207)

Justification in existing exposure situations

- **Publication 126: Radiological Protection Against Radon Exposure**

  - *"… the principle of justification is applied in making the decision regarding whether or not a protection strategy against radon exposure is implemented. ….)".*

  - *"The characterization of the situation, such as the assessment of radon concentrations and the identification of radon-prone areas, as well as considerations about public health priorities and social and economic factors, are necessary for national authorities to determine whether or not a radon protection strategy is justified in a country.*

    (Paragraph 64)

Justification in existing exposure situations

- **Publication 132: Radiological Protection from Cosmic Radiation in Aviation**
  - *"… the principle of justification is applied in aviation in making the decision about whether to implement a protection strategy against exposure to cosmic radiation."*

(Paragraph 44)

Justification in existing exposure situations

- **Publication 142: Radiological Protection from NORM in Industrial Processes**
  - *"…the principle of justification is primarily applied in industries involving NORM when deciding whether to implement a protection strategy for radiation exposures." (Paragraph 47)*
  - *"For industries involving NORM on the national list, when a new process using NORM is to be implemented, the principle of justification should be applied in the same way as for ongoing processes (i.e. primarily when deciding whether to implement a protection strategy for radiation exposures)."*
  - *"Industrial processes will usually produce significant economic and social benefits, and the radiological risks involved are unlikely to result in a decision that the NORM process, as a whole, would need to be considered unjustified. Exceptions can be dealt with on a case-by case basis." (Paragraph 51)*

Justification in existing exposure situations

- **Publication 146: Radiological Protection of People and the Environment in the Event of Large Nuclear Accidents**
  - *Justification is part of radiological protection which is not just about avoiding or reducing exposure, but may also encompass non-radiological health effects, and societal, economic, and environmental considerations. (Paragraph 52)*
  - *Justification is in accordance with the overall ethical goal of societies, which is to contribute to the well-being of individuals, the quality of life of affected communities, and the preservation of the quality of the environment for future generations. (Paragraph 52)*
  - *Past experience has demonstrated the importance and benefit of involving stakeholders in these decisions, particularly representatives of local authorities, professionals, and inhabitants of affected communities, to improve the decision-making process. (Paragraph 57)*

Example scenarios

- Existing exposure situations caused by radiological emergencies
  - Clean up of contaminated premises or areas
  - Access or use restrictions for contaminated premises or areas
  - Recycle or reuse of contaminated objects, materials and waste
  - Use of contaminated foodstuff
- Legacies from previous practices
  - Remediation of legacy mining or milling site
  - Use of premises with remaining contamination from discontinued or legacy practice

Example scenarios

- Radon in dwellings and workplaces
- Natural radioactivity in
  - drinking water;
  - building materials, and
  - other commodities
- NORM-industries
- Cosmic radiation in aviation
- Areas with high natural background radiation

Examples of factors to be taken into account

- Radiation exposure of individuals before and after remedial measures
  - Occupational (remediation workers) and public exposure (affected population)
- Public health priorities
- Fairness in the distribution of advantages and disadvantages, including future generations
- Fear of radiation, stress, impact on mental health
- Disturbance to normal life and uncertainty of future
- Costs and available resources and infrastructure (e.g. for waste management)

Key questions for discussion

- What scenarios require in-depth consideration?
- What factors need to be taken into account in the relevant scenarios?
- How can experts and stakeholders be involved in the justification process?
- What guidance would be helpful to improve the application of the justification principle?

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