Principle of Justification

Historical Overview and Challenges
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Part 1

Justification in ICRP Recommendations
Planning for the future expansion of nuclear energy programs and the more extensive uses of radiation, requires measures intended to protect whole populations. Genetic damage is of greatest concern in this regard. [...] The Commission is aware of the fact that a proper balance between risks and benefits cannot yet be made, since it requires a more quantitative appraisal of both the probable biological damage and the probable benefits than is presently possible. Furthermore, it must be realized that the factors influencing the balancing of risks and benefits will vary from country to country and that the final decision rests with each country (insofar as operations within one country do not affect other countries).

[Publication 1, para.17]
Justification as Basic Principle

• Publication 26

No practice shall be adopted unless its introduction produces a positive net benefit.

The decision to introduce countermeasures should be based on a balance of the detriment which it carries and the reduction in the exposure which it can achieve.

• Publication 103

Any decision that alters the radiation exposure situation should do more good than harm.
The Commission recommends that, when activities involving an increased or decreased level of radiation exposure, or a risk of potential exposure, are being considered, the expected change in radiation detriment should be explicitly included in the decision-making process. The consequences to be considered are not confined to those associated with the radiation – they include other risks and the costs and benefits of the activity. Sometimes, the radiation detriment will be a small part of the total. Justification thus goes far beyond the scope of radiological protection.

[Publication 103, para.205]
Question

Benefits
- Radiation detriment
- Other risks and costs

> 0 ?

Entails value judgments
Part 2

Developments Since 2007
Recommendations
Three Pillars of System of RP

System of Radiological Protection

Science
Ethics
Experience
A particular objective of this publication is to outline what can reasonably be expected from radiological protection to individuals and societies. In so doing, it **helps to clarify the inherent value judgements** made in achieving the aim of the system of radiological protection as underlined by the Commission in Publication 103, and thus hopefully **facilitates decision-making processes and communication** on radiation risk.

[Publication 138, para.8]
Experience in Fukushima

Protective/remedial actions were effective to keep doses low.

However

Health of the elderly deteriorated after the evacuation.

People’s daily life was disrupted.
What matters is not just radiation exposure, but life in the exposure situation.
Widening Scope

Prevent/mitigate detrimental effects of radiation

Ensure/improve well-being in exposure situations
Whose Well-Being?

- My family’s well-being
- My pet’s well-being
- My friends’ well-being
- Future generation’s well-being
- Environmental well-being

... has to do with my well-being
Noteworthy Developments

- Ethical foundations of RP
- Holistic approach to well-being
- Sustainable Development Goals
Part 3

ICRP Task Group 124
Task Group 124

Application of the Principle of Justification

- Task Group of Committee 4
- Approved by the Main Commission on 30 April 2022
- Started activities in October 2022
TG124 Members

- Nobuhiko Ban (Chair)
- Julie Burtt (Secretary)
- Kimberly Applegate
- Michael Boyd
- Jessica Bryony Callen-Kovtunova
- Hefin Wyn Griffiths
- Eunok Han
- Toshimitsu Homma
- Carl-Magnus Larsson
- Mika Markkanen
- Andrew Mayall
- Sergio Salerno
- Adrienne Ethier (Technical Secretary)
- Hazem Suman (IAEA)
- Bernard Le Guen (IRPA)
- Christopher Mogg (OECD-NEA)
- Emilie van Deventer (WHO)
Mandate

• Deliberate on application of the principle of justification in all three types of exposure situations

• Consider all categories of exposure for humans (workers, members of the public, and patients) and non-humans

• Take particular note of situations where radiation exposure is a major concern, and at the same time, societal and ethical values are considered to have important implications

• Emphasise the ethical values described in Publication 138
Work Process

- Develop a short list of situations where societal, ethical values would be of particular importance
- Organise open topical workshops to exchange insights and experiences with those interested

What “more good than harm” means in society today
On what basis the judgement should be made
Part 4

Format of Workshop
Sessions

Session 1: Planned exposure situation, medical application
   Moderator: Kimberly Applegate

Session 2: Planned exposure situation, non-medical sector
   Moderator: Andrew Mayall

Session 3: Emergency exposure situation
   Moderator: Jessica Bryony Callen-Kovtunova

Session 4: Existing exposure situation
   Moderator: Mika Markkanen
Format

- Webinar platform of Zoom is used throughout the workshop.

- During each Session, the moderator gives an introductory presentation, and then leads the discussion.

- In the discussion, participants who want to make comments are asked to type in the Q&A box. The moderator pick them up for the discussion.