The Future of Radiological Protection

20th November 2020

IAEA International Conference on Radiation Safety: Improving Radiation Safety in Practice
Virtual Meeting, 9th - 20th November 2020
ICRP and Radiological Protection

ICRP has been providing recommendations and guidance on radiological protection for over 90 years.
Future of RP for ICRP

- Refining system of radiological protection
- New areas of RP to be considered
- Encouraging recruitment of members, especially younger people
- Need for timely and accurate information to be readily available
Strategic Priorities
2020-2024

ICRP
INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION
GUIDING RADIOLOGICAL PROTECTION SINCE 1928

2020-2024
STRATEGIC PRIORITIES

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Refine the System of Radiological Protection

Ensure ICRP Continues to Operate as a Well-Governed and Forward-Looking Organisation

Strengthen our Engagement with Professionals, Policy Makers, and the Public
Strategic Priorities 2020-2024

REFINE THE SYSTEM OF RADIOPHYSICAL PROTECTION

Key Actions
- Regularly evaluate:
  - Advances in science
  - Technological developments especially in medicine
  - Emerging domains needing radiological protection guidance (e.g., veterinary patients and space travel)
- Identify and encourage research to support radiological protection
- Review the system of radiological protection, working towards an update of the general recommendations to ensure it remains fit for purpose

STRENGTHEN OUR ENGAGEMENT WITH PROFESSIONALS, POLICY MAKERS, AND THE PUBLIC

Key Actions
- Work with stakeholders, especially in the review of the system of radiological protection, through ICRP symposia, open workshops, and consultation
- Engage with patients, workers, and the general public using ICRPedia, social media, and other means
- Increase outreach worldwide, with special attention to:
  - The medical sector and nuclear installations
  - Affected populations
  - Under-served regions of the world
Fundamental Recommendations

Latest:
ICRP Publication 103
2007 Recommendations of the International Commission on Radiological Protection

Total 14 sets of fundamental recommendations since 1928
ICRP Publication 103

- Long gestation, commencing 1998
- Technical discussion IRPA meetings 2000 & 2004
- Draft web consultations 2004 & 2006
- Two progress reports
- Publication in 2007
System of Radiological Protection

- Over 20 years since last major system review commenced
- Main Commission initiated brief overview May 2016
- System basically sound
- Recognised need for some clarification and explanation
System of Radiological Protection

Now commenced more in-depth review

Route to new fundamental recommendations is a journey on a long and winding road
Changes since *Publication 103*

- More than 40 ICRP Publications since *Publication 103*
- Statement 2009: Radon
  - Upper value reference level radon in dwellings $300 \text{ Bq m}^{-3}$
- Statement 2011: Tissue Reactions
  - Equivalent dose limit 20mSv per year lens of the eye
• Ongoing development of RP of the environment and its integration into the overall system

• Ethical aspects of RP and applying the concepts across the scope of the recommendations
New Areas of RP

- **Veterinary practice (TG110)**
  - First time ICRP has considered RP of the ‘veterinary patient’

- **Risk and dose assessment for RP of astronauts (TG115)**
  - Collaboration with International System Maturation Team (ISMT) and several of its radiation experts from international space agencies
• Continue work to support current recommendations
• Consider publications that need updating
• Recognise gaps in the system
• Identify ‘building blocks’ and essential work required for the next recommendations
• Prioritise programme of work
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## Committee 3 Work in Progress

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Topics Under Consideration

- Effects of ionising radiation on circulatory diseases
- Effects of ionising radiation on offspring and next generations (update *Pub 90*)
- RBE, Quality and Weighting factors
- Updates to the concept of detriment
- Dose coefficients for embryo/fetus and newborn child
Topics Under Consideration

- Optimisation in medicine
- Biomedical research (update *Pub 62*)
- Exposure situations
- Categories of exposure
- Conceptual considerations of dose limits, constraints and reference levels
Mentorship Programme
Mentorship Programme

- Engage early- to mid-career professionals as mentees in Task Groups with ICRP member as mentor (usually member of TG)
- Part-time arrangement with mentees continuing to work at home organisation
- Committee Chairs, in consultation with TGs and Scientific Secretariat, identify suitable TGs and mentors
Mentorship Programme

- Mentee for one year, with possibility of renewal
- Assigned a specific task
- Initial trial phase and now 17 mentees working on projects with 8 different Task Groups
- Open application process available on the ICRP website
- Important initiative to encourage young people to work in radiological protection and with ICRP
• Web based information on RP

• Still in its infancy with much work to be done

• Aim is for plain-language summary with more in-depth information available for those who require it
Welcome to ICRPædia, the home for information on The System of Radiological Protection developed by The International Commission on Radiological Protection (ICRP)®. ICRPædia is the work of ICRP members.

The System of Radiological Protection is the basis of all standards, regulations, and practice of radiological protection worldwide for the protection of patients, workers, the public, and the environment from ionising radiation.

The definitive reference for the recommendations and guidance of ICRP® is the dedicated journal Annals of the ICRP®.

ICRPædia is still in its infancy, and growing. Come back regularly to see what’s new.

ICRPædia Guides

If you’re looking for somewhere to start, our guides are the perfect place! Each guide contains a few modules that cover the topic at a high-level. ICRPædia contains much more than is linked directly in these guides but they are a great way to start learning and exploring.

Latest Topics

ICRPædia is always being updated. Take a look at our newest pages here!

Cosmic Radiation in Aviation
Major Topics

- System of radiological protection
- Radiological protection in healthcare
- Radiation effects and risks

Under Development

- Ethical foundations
- Airport screening
- NORM
- Protection of the environment
Possible Timeline System Review

- **Remainder of 2017-2021 Term**
  - Preparation of system review

- **2021-2025 Term**
  - Development of building blocks

- **2025-2029 Term**
  - Development of revised fundamental recommendations
Review & Refinement of the System of Radiological Protection

Identify areas that need attention

Develop specific areas through wide and deep engagement

Draft and consult on new fundamental recommendations

about a decade
• **ICRP 2021**: Focus on launching process, seeking feedback facilitated by paper on areas to be addressed published in advance

• **ICRP 2023 & 2025**: Presentation and discussion of building blocks

• **ICRP 2027**: Presentation, discussion, consultation on draft fundamental recommendations

• **ICRP 2029**: Launch of new fundamental recommendations?
ICRP 2021
1-4 Nov • Vancouver
6th International Symposium on the System of Radiological Protection
ICRP2021.COM
Remainder of 2017-2021 Term: Preparation

- Minimise establishment of new TGs and finish work of TGs not related to revision
- Broadly announce the beginning of the review & revision
- Take advantage of opportunities to obtain input on issues to be addressed
- Identify areas needing further work for the revision
- Round 1 of building-block TGs, focusing on fundamental issues (mainly TGs 79, 91, 102, 111, 114)
2021-2025 Term: Building Blocks

Enhanced engagement during development

- Hold open workshops* in connection with TG meetings
- Present work-in-progress at conferences and seek feedback
- Publish papers in peer-reviewed journals

* In particular, collaborating with liaison organisations according to the topics
2021-2025 Term: Building Blocks

Enhanced consultation

• Extended consultation periods
• Open workshops* during consultation
  * In particular, collaborating with liaison organisations according to the topics

Enhanced engagement during development

• Hold open workshops* in connection with TG meetings
• Present work-in-progress at conferences and seek feedback
• Publish papers in peer-reviewed journals
  * In particular, collaborating with liaison organisations according to the topics
2021-2025 Term: Building Blocks

- **Round 2 of building-block TGs**
  - Focusing on topics that rely on earlier results

- **Enhanced consultation**
  - Extended consultation periods
  - Open workshops* during consultation
  * In particular, collaborating with liaison organisations according to the topics

- **Enhanced engagement during development**
  - Hold open workshops* in connection with TG meetings
  - Present work-in-progress at conferences and seek feedback
  - Publish papers in peer-reviewed journals
  * In particular, collaborating with liaison organisations according to the topics
2025-2029 Term: ‘New 103’

• Complete all building-block TGs

• Plan multiple rounds of consultation on the new fundamental recommendations
  ➢ Aim for one consultation period to align with ICRP 2027

• Hold several regional workshops for feedback during each consultation
  ➢ Work with liaison organisations and others to hold workshops
2025-2029 Term: ‘New 103’

ICRP 2029 → launch of new fundamental recommendations?
Revision and Funding

- Broad ENGAGEMENT in the revision of the system is essential but not without cost
  - The system of RP will be revised over the coming decade
  - An unprecedented level of engagement is essential for the success of this process
  - ICRP is ready to take on this challenge, but as a charity we need your financial support to ensure full engagement for all
  - Together we ‘Freed the Annals’ – now together let’s revise the system of radiological protection

- ENGAGE in the revision of the system: contact us at chair@icrp.org
Nominations for Committee Membership

• Committees operate on four-year terms

• The next term is 1 July 2021 – 30 June 2025

• Nominations for Committee membership will be open approximately December 2020 to March 2021
  ➢ Need two nominators (anyone) and a brief CV (2 pages)

• The ICRP Main Commission will vote on Committee membership in May 2021
Future Main Commission

- Members retiring at end of 2017-2021 term
  - Claire Cousins (Chair)
  - Jacques Lochard (Vice-Chair)
  - John Harrison (C2 Chair)
  - Carl-Magnus Larsson

- At least new Chair, Vice-Chair and Committee 2 Chair for the next term

- New leadership taking forward the work for the next recommendations
ICRP International Conference on Recovery After Nuclear Accidents
Radiological Protection Lessons from Fukushima and Beyond

1 - 4 December, 2020

icrprecovery.org