ICRP: Developments since the 1st International Conference on Occupational RP in 2002

International Conference on Occupational Radiation Protection: Enhancing the Protection of Workers – Gaps, Challenges and Developments

Session 1: International recommendations and standards on occupational radiation protection: Recent changes and the challenges in their practical implementation

Vienna, 2014 December 1-5

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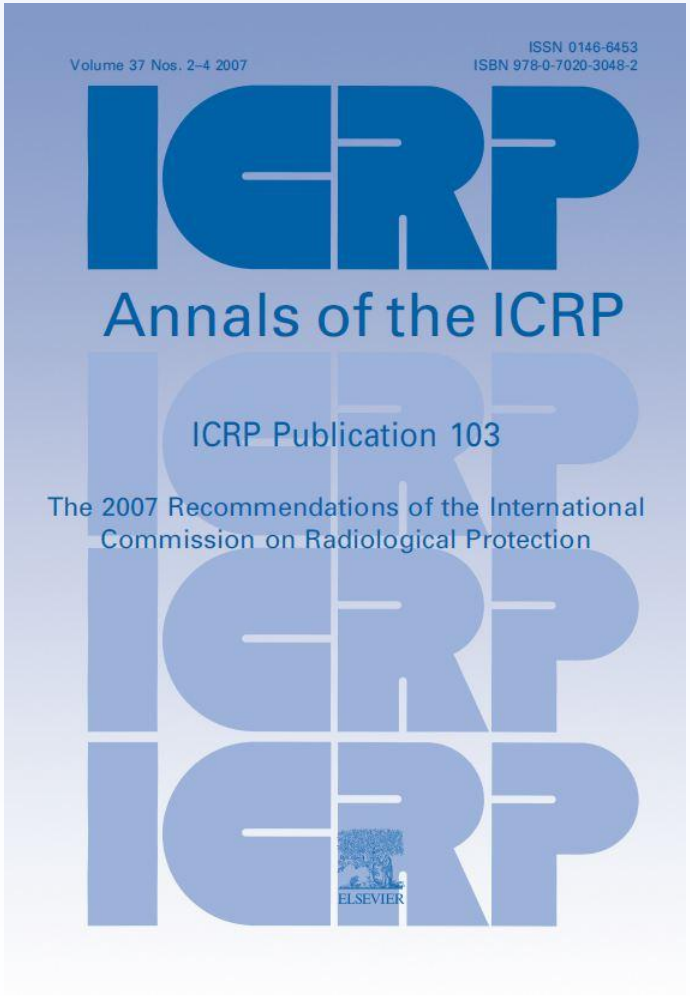
Publication 103
2007 Fundamental Recommendations



- Move to planned, existing, and emergency *exposure situations*
- Optimisation applies <u>universally</u>
  - Use constraints to aid optimisation
- Declared pregnant workers:
  - Dose to embryo/fetus < ~1 mSv
  - Avoid accidental doses and radionuclide intakes
  - Avoid emergency actions with high dose

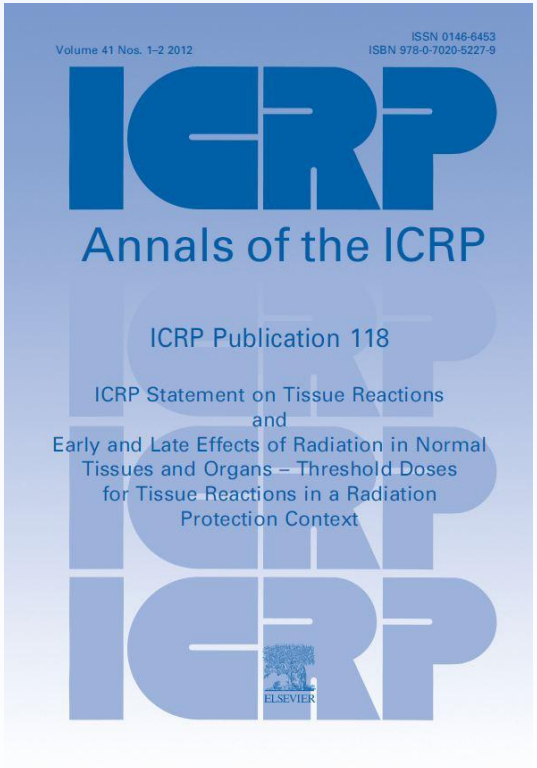
Publication 118
Dose Limit to the Lens of the Eye

Threshold for cataract of the lens of the eye now considered to be 0.5 Gy

- Acute or protracted
- About 10x lower than previously thought

Eye dose limit for occupational exposure in planned exposure situation:

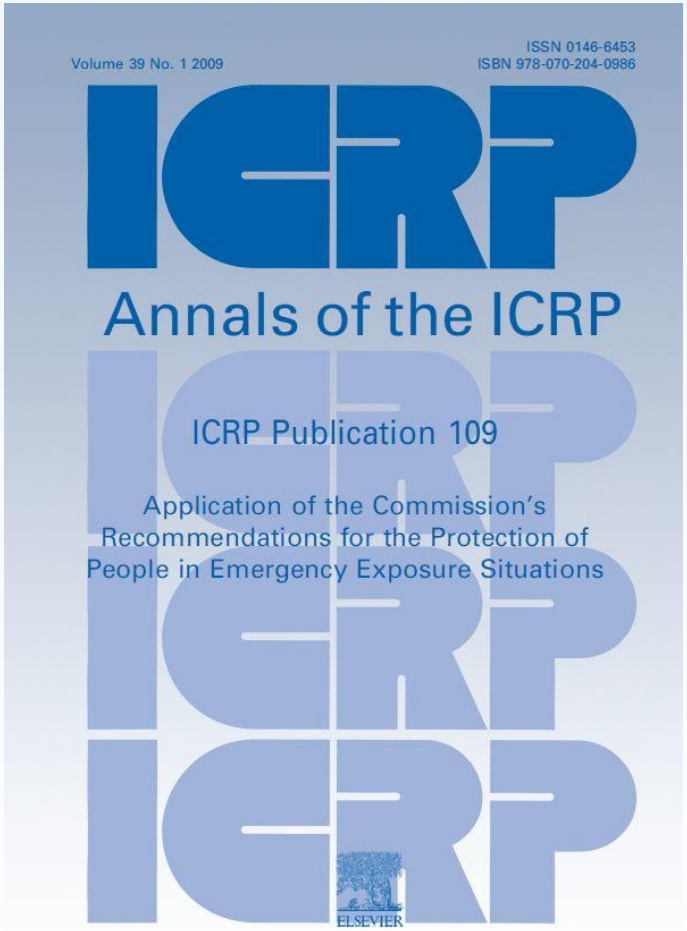
- 20 mSv/y, averaged over 5 y, no single year exceeding 50 mSv
- About 8x lower than previous 150 mSv/y
- Equal to whole-body dose limit
- Optimisation is explicit



Emergencies

- Ideally, manage protection as in normal circumstances
- Flexibility and possibly relaxation of normal controls may be needed
  - Avoid doses > 0.5 or 1 Sv except for voluntary life-saving
- Once the emergency is under control, remedial work should be treated as “normal” occupational work
  - Doses in emergencies should be treated separately from any normal doses

Publication 109
Emergency Exposure Situations



- For early protective actions (not urgent actions on site or recovery actions):
  - Optimize protection below a reference level equivalent to occupational dose limit
- Pregnant/nursing avoid emergency role with doses >1 mSv or significant contamination

ICRP Task Group 93: Update to *Publications 109* and *111*

"…occupational protection is not specifically tailored to workers who are not 'radiation' workers … [e.g.] rescuers ... volunteer workers …" (TG84)

Some key issues

- Distinctions between responders on and off site
- Distinctions between phases of emergency/recovery
- Levels of preparation of responders prior to emergency
- Handling recovery workers who received >100 mSv in the emergency

An ongoing effort – expect public consultation in 2015/16

Summary

- The ICRP System of Radiological Protection for occupational exposures is robust, and has been stable for decades
- This is particularly true for planned exposure situations (previously “practices”) where there has been almost no need for change
- Drawing on experience from the Fukushima Daiichi accident, refinements are underway for occupational exposure in emergency and existing exposure situations

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