

U.S.NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Options to Revise Radiation Protection Regulations

*2009 ISOE North American ALARA Symposium
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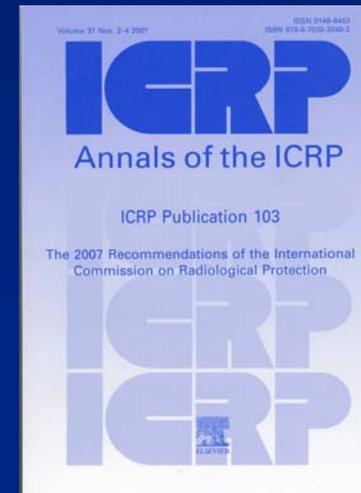
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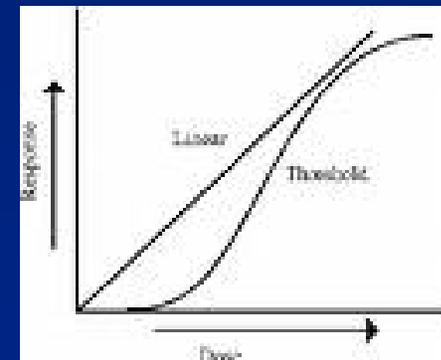
Background

- NRC staff recommends in 2001 that the Commission wait for next set of ICRP recommendations, and begin Technical Basis development
- Commission agreed in April, 2002, but did not approve Technical Basis efforts
- ICRP Recommendations published in December, 2007 as Publication 103, following considerable public consultation



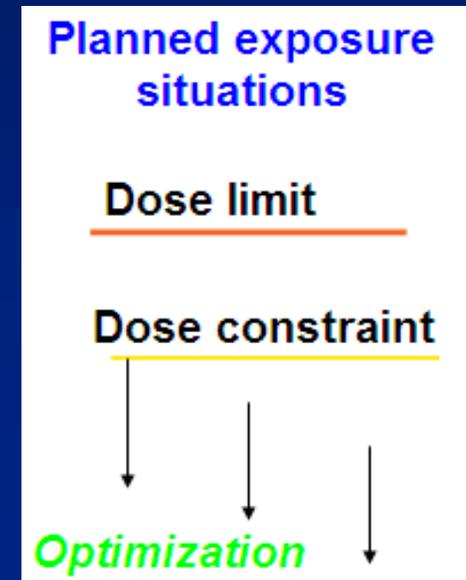
ICRP Publication 103

- Consolidated material from ICRP Publication 60 and subsequent publications
- Maintained fundamental principles of:
Justification, Optimization, and Limitation
- Radiation risk remains as $\sim 5 \times 10^{-4}$ per rem
- LNT for prospective radiation control programs



ICRP Publication 103

- Moved to a “situation” based framework
 - Planned Exposure Situations
 - Emergency Exposure Situations
 - Existing Exposure Situations
- Emphasized Optimization using Dose Constraints
- Retained Dose Limits and values
 - Occupational Exposure: 10 rem / 5 years, max of 5 rem in any one year
 - Public Exposure: 100 mrem
 - Embryo/Fetus: 100 mrem



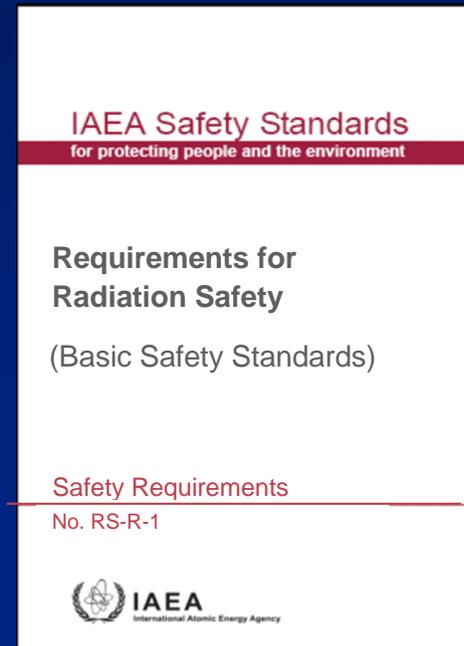
ICRP Continuing Work

- Assessment of new scientific information has resulted in new tissue and radiation weighting factors
- Efforts now underway to calculate new dose conversion factors using updated models and information
- Commonly used radionuclides to be available in 2011 ... Complete set 2014



International Standards Work

- IAEA continuing revision of Basic Safety Standards.
 - Draft reviewed by RASSC in November
 - Additional drafting in topical meetings
 - Further review at RASSC in June, 2009
 - Eventual Member State comment
- Draft moves to adopt ICRP Recommendations



International Standards Work

- **Revision of Euratom Basic Safety Standards**
 - Revision of BSS Directive 96/29
 - Incorporate new ICRP recommendations
 - Consolidate all existing legislation
 - Integration of natural and artificial sources
 - Protection of the Environment
- **Draft to Article 31 Group of Experts Plenary
October, 2009**



Considerations

- Commissioners and staff have been asked on numerous occasions when the U.S. would update their regulations
- Some portions of regulations and guidance date back to ICRP Publication 1 and 2
- Rationale for action may include adequate protection, updating scientific information, trans-boundary implications, and achieving consistency of approach



Next Steps

- NRC staff developed options for Commission consideration in December 2008
- Options include:
 - No Action
 - Begin process to revise regulations not updated in 1991
 - Begin process to increase alignment of Part 20
- Information needed on benefits and impacts



Technical Issues for Part 20

- Total Effective Dose
- Constraints
 - Occupational Exposure
 - Public Exposure
- Dose limits
 - Occupational
 - Public
 - Embryo/fetus of Declared Pregnant Woman
- Numerical values of weighting factors and Appendix B



Moving Forward

- **NRC staff is looking to engage stakeholders on the technical issues and options for resolution**
 - **What are YOUR thoughts on the technical issues identified?**
 - **What are the impacts of different options?**
 - **Are there other options that should be considered?**
 - **What other issues need to be put on the table?**
 - **What information is needed to make decisions?**



Questions? Questions?

