

Options to Revise Radiation Protection Regulations SECY-08-0197

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Background

- Most recent rulemaking to incorporate the recommendations of the ICRP into 10 CFR 20 was completed in 1991, and was based primarily on ICRP Publication 26 (1977)
- Regulations that contained explicit dose criteria, rather than cross-references to Part 20, were not updated in 1991, and remain based primarily on ICRP Publications 1 (1958) and 2 (1959)

Background (continued)

- NRC staff recommended 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

Considerations

- Numerous inquiries to Commission and Staff about the status of updates to U.S. radiation protection regulations
- Globalization of economy and industry places greater importance on regulatory consistency
- Other countries and international organizations already starting process of update
- Interest from nuclear power industry to update standards and increase consistency



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Initial Interactions

- Staff has engaged States, nuclear industry, medical community, ACRS, ACMUI
- General agreement that updates and modifications are warranted
- Impacts of technical issues are highly dependent upon approach taken for resolution
- Lack of information for some licensee segments, particularly industrial and medical
- States will use revision as basis to regulate both AEA and non-AEA radiation activities



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SECY-08-0197

- Policy Issue Notation Vote paper provided to Commission on December 18, 2008
- Provides Options for next steps regarding NRC radiation protection standards
- Provides Background on key technical issues in 10 CFR Part 20 and 10 CFR Part 50
- Recommends Commission approval for staff to undertake stakeholder dialogue and technical basis development



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Regulatory Options

- **Options include:**
 - No Action
 - Update 10 CFR Part 50 and Part 50 Appendix I
 - Engage Stakeholders & Develop Technical Basis to Increase Alignment of NRC Radiation Protection Framework with ICRP 103
- **Factors considered**
 - Schedule for technical information
 - New reactor licensing
 - Other issues that may be raised outside ICRP changes
 - Resources



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Recommendation

- Option 3, begin process of moving towards greater degree of alignment
- Begin stakeholder dialogue with stakeholder communities on technical issues and options
- Begin technical basis development Interact with other Federal and State Agencies to foster consistency in directions and approach
- Provide recommendations for rulemaking when technical basis available



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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



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Moving Forward

- Pending Commission approval, NRC staff are 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?



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Questions? Questions?



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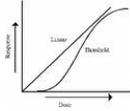
Background Materials



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ICRP Publication 103

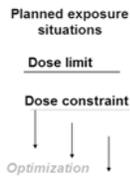
- Consolidated material from ICRP Publication 60 and subsequent publications
- Maintained fundamental principles of: Justification, Optimization, and Limitation
- Radiation risk remains as $\sim 5 \times 10^{-4}$ per rem
- LNT for prospective radiation control programs



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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



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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



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