Advance Notice of Proposed Rulemaking
10 CFR Part 20

NRC Public Meeting
September 24, 2014

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United States Nuclear Regulatory Commission
Protecting People and the Environment

Donald A. Cool, Ph.D.
Senior Advisor, Radiation Safety and International Liaison
Office of Federal and State Materials and Environmental Management Programs

Purpose

- Overview of Issues and Questions in the Advance Notice of Proposed Rulemaking (ANPR)
- ANPR Federal Register Notice - July 25, 2014
  - Specific proposed options and questions
  - Supported by six issues papers on NRC web site

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History

- ICRP Recommendations - December 2007
- Initial Staff Recommendations - SECY-08-0197 - December 2008
- Second Staff Recommendations - SECY-12-0064 - April 25, 2012
- Commission Direction - SRM-SECY-12-0064, December 17, 2012
  - Staff recommendations
    - Approved in part, and
    - Disapproved in part

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General Areas of Work

- Updating Methodology and Terminology to achieve greater Alignment with ICRP 103
- Part 20 (Standards for Protection Against Radiation)
  - Technical Issues
- Part 50, Appendix I (Numerical Guidelines for Design Objectives to meet ALARA) Technical Issues
- Comporting Changes throughout all NRC regulations

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Updated Methodology and Terminology

- **Commission Direction:**
  - Develop a regulatory basis for a revision to 10 CFR Part 20 to align with the most recent methodology and terminology for dose assessment.
- **Proposal:**
  - TEDE becomes TED
  - New W_T and W_R values incorporated into definitions
  - Appendix B revised with new ALI and DAC values
  - Age and Gender average dose coefficient for reference member of public

Updated Methodology and Terminology Questions

- **Q1-1 What are the implications of terminology change? Specifically, what are the associated costs of the change?**
- **Q1-2 What would be an appropriate implementation time frame and an approach to transition into the new terminology?**
- **Q1-3 How should the calculations of effluent concentration be modified to reflect advances in modeling that are now available? What are your views on age and gender weighted composite?**
- **Q1-4 What dose level should be used for effluent concentrations to demonstrate compliance?**

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Lens of the Eye

- **Commission Direction:**
  - Continue discussions with stakeholders regarding possible revisions to the dose limit (150 mSv (15 rem)) for the lens of the eye
- **Proposal:**
  - Reduction to 50 mSv (5 rem) LDE

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Lens of the Eye Questions

- **Q2-1 Is closer alignment or adoption of the ICRP Publication 118 recommendations regarding the dose limits to the lens of the eye appropriate given the scientific information now available?**

- **Q2-2 How should the impact of a radiation induced cataract be viewed in comparison with other potential radiation effects?**

- **Q2-3 What mechanisms could be applied to keep the cumulative exposure to the lens of the eye below the threshold of 0.50 Gy (50 rad)?**

Lens of the Eye Questions

- **Q2-4 What methods should be allowed for measurement or assessment of the dose to the lens of the eye?**
- **Q2-5 What methods should be allowed for recording dose when the eyes are protected?**
- **Q2-6 What are the potential operational impacts?**
- **Q2-7 What are the potential impacts on State regulatory programs?**

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Embryo/Fetus

- **Commission Direction:**
  - **Continue discussions with stakeholders regarding possible revisions to the dose limit (5 mSv (0.5 rem)) for embryo/fetus**
- **Proposal:**
  - **Reduction to 1 mSv (0.1 rem)**

Embryo/Fetus Questions

- **Q3-1 Are there any significant anticipated impacts associated with reducing the dose limit to the embryo/fetus of a declared pregnant woman, including operational impacts?**

- **Q3-2 Are there any benefits or impacts associated with applying the reduced dose limit over the entire gestation period, or only to the period after declaration?**

- **Q3-3 Are there any anticipated implementation impacts on recordkeeping if the dose limit to the embryo/fetus is lowered to 1 mSv (100 mrem)?**

Embryo/Fetus Questions

- **Q3-4 Are there technological implementation issues, such as limits of detection, which would make adoption of the ICRP Publication 103 recommendation difficult in certain circumstances?**

- **Q3-5 Are there data on actual dose distributions to the embryo/fetus of a declared pregnant worker? What are the trends for these data?**

Individual Protection - ALARA

- **Commission Direction:**
  - **TEDE limit to remain at 50 mSv (5 rem)**
  - **Continue discussions with stakeholders on alternative approaches to deal with individual protection at or near the current effective dose limit.**
- **Objective:**
  - **Regulatory requirements and guidance that will ensure that cumulative exposures are examined, and that progressive restrictions can be taken as cumulative exposures increase.**

Individual Protection Performance Options

- Require ALARA planning

- Require mechanism(s) to examine cumulative exposure, and take progressive restrictions on the occupational exposure allowed as cumulative exposures increase.

  - Require licensees to establish one or more administrative control levels (ACL's) as part of their radiation protection program and to establish specific procedures for individual protection.

- Require licensees be provided with record of all other concurrent sources of occupational exposure

Acceptable Approaches

- ACL 20 mSv per year
- ACL average 20 mSv over 5 year period (ICRP-103)
- ACL 10 (mSv) x N (age) (NCRP-116)
- ACL to restrict individuals to 20 mSv if cumulative exposure exceeds xxx mSv
- Other Options?

Individual Protection Questions

- **Q4-1 What are the implications of adding specific ALARA planning and implementation requirements? What changes to licensees' programs would be anticipated?**
- **Q4-2 What regulatory language should be used for an additional ALARA planning requirement, and what is the rationale for this language?**
- **Q4-3 How does each of the described methodologies for addressing when an individual approaches the yearly occupational dose limit work for different classes of licensees?**
- **Q4-4 Should licensees be allowed to establish different ACL's for different groups of individuals? Basis?**

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Individual Protection Questions

- Q4-5 How do the different options impact the ability of licensees to best address radiation protection within their programs?
- Q4-6 Are there other ways to evaluate occupational lifetime cumulative exposure that could be considered?
- Q4-7 What are the potential impacts of requiring a licensee to account for exposure from concurrent employment with another licensee?
- Q4-8 Should Agreement States be allowed to use more restrictive or prescriptive requirements?

Metrication: Traditional vs. SI Units

- **Commission Direction:**
  - Disapproved the elimination of traditional units from NRC regulations. Both traditional and SI units should be maintained.
- **Proposal:**
  - Implement Commission Policy Statement – SI first, traditional in parenthesis

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Traditional vs. SI Units Questions

- **Q5-1 Will promulgation of amendments to the 10 CFR part 20 regulations with dose limits and other measurements shown in dual units, with the SI units shown first, followed by the traditional units in parentheses, cause an undue burden or hardship upon any licensee or class of licensees?**

Traditional vs. SI Units Questions

- **Q5-2 Should 10 CFR 20.2101(a) be revised to allow licensees the option of providing records in SI units or in traditional units? Should licensees be allowed to provide reports in the units used in licensee records? Should licensees be required to record and report in both sets of units?**
- **Q5-3 Should the NRC amend the appendices for 10 CFR part 20 to show values in SI units only, in traditional units only, or in both sets of units?**

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Reporting of Occupational Exposure

- **Commission Direction:**
  - Improve reporting of occupational exposure by NRC and Agreement State licensees, some of which do not currently submit reports.

- **Proposal:**
  - Add categories of licensed use: e.g., Part 35
  - Modify requirements for compatibility
  - Explore mechanisms for central repository of data for all to use.

Reporting of Occupational Exposure Questions

- **Q6-1 What criteria should the NRC use to identify additional categories of licensees that should be required to submit annual occupational exposure reports in accordance with 10 CFR 20.2206(a)?**

- **Q6-2 What are the benefits of collecting occupational exposure information in one central database in order to assess the total annual occupational exposure of those individuals who work at more than one licensed facility or contractor facility during the calendar year and receive occupational exposures at these facilities?**

Reporting of Occupational Exposure Questions

- **Q6-3 Should Agreement States be required to adopt regulations that are compatible with the requirements in 10 CFR 20.2206?**

- **Q6-4 Should the NRC consider a gradual expansion of the 10 CFR 20.2206 licensee reporting categories in a step-wise fashion (e.g., staggered compliance dates for different categories of licensees)?**

- **Q6-5 What are the potential implementation and operational costs associated with expanding the occupational exposure reporting requirements?**

Cumulative Effects of Regulation

- Q1 In light of current or projected CER challenges, what could be considered as a reasonable effective date for any potential 10 Part 20 revisions?

- Q2 What could be done to address current or projected CER challenges?

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Cumulative Effects of Regulation

- **Q3 What current or projected regulatory actions could influence implementation of a potential 10 CFR part 20 rulemaking?**

- **Q4 Are there any possible intended consequences?**

- **Q5 Is there any potential costs and benefits information available at this time?**

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Advanced Notice of Proposed Rulemaking

- Published July 25, 2014
- Request for Comments - Input on the six technical issues and associated questions
- Comments will be accepted until November 24, 2014
  - Federal e-Rulemaking portal at http://www.regulations.gov under Docket ID NRC-2009-0279
  - email to Rulemaking.Comments@nrc.gov
  - fax to Secretary, U.S. Nuclear Regulatory Commission, 301-415-1101
  - mail to Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff

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Next Steps

- **Public Meetings / Webinars scheduled for:**
  - **October 2, 2014**
  - **October 9, 2014**
  - **October 16, 2014**
  - **October 23, 2014**
- **The next three public meetings/webinars will cover two issues, and the last meeting/webinar will provide additional time for discussion of the various issues**
- **Further opportunities for comment in the future will be provided with more specific proposals (Draft Regulatory Basis)**

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http://www.nrc.gov/about-nrc/regulatory/rulemaking/potential-rulemaking/opt-revise.html

Questions?

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Revision of Radiation Protection Regulations and Guidance

http://www.nrc.gov/about-nrc/regulatory/rulemaking/potential-rulemaking/opt-revise.html

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Summary

- **Comments will be accepted until November 24, 2014**
  - **Federal e-Rulemaking portal at http://www.regulations.gov under Docket ID NRC-2009-0279**
  - **email to Rulemaking.Comments@nrc.gov**
  - **fax to Secretary, U.S. Nuclear Regulatory Commission, 301-415-1101**
  - **mail to Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff**
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