

Office of Federal and State Materials and Environmental Management Programs

Safety and Security in the Beneficial Applications of Nuclear Materials

Advance Notice of Proposed Rulemaking 10 CFR Part 20

Baltimore Washington Chapter
Health Physics Society
May 9, 2014

History

- **ICRP Recommendations announced December, 2007**
- **Initial Staff Recommendations – SECY-08-0197, December 2008**
- **Staff Recommendations for direction – SECY-12-0064, April 25, 2012**
- **Commission direction SRM-SECY-12-0064, December 17, 2012**
- **The Commission approved in part, and disapproved in part, the staff's recommendation**

Areas of Work

- Updated Methodology and Terminology
- Part 20 (Standards for Protection Against Ionizing Radiation) Technical Issues
- Part 50, Appendix I (Numerical Guidelines for Design Objectives to meet ALARA) Technical Issues
- Comporting Changes to other portions of the Regulations

Overarching Questions to Address

- Cumulative effects of regulation
- Regulatory impact
- State implementation

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

Updated Methodology and Terminology Questions

- **What are the implications of terminology change? Specific costs?**
- **What would be an appropriate implementation time frame and approach to transition of terminology?**
- **How should the calculations of effluent concentration be modified to reflect advances in modeling that are now available? Views on age and gender weighted composite?**
- **What dose level should used for effluent concentrations to demonstrate compliance?**

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) 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

- **What are the implications of adding specific ALARA planning and implementation requirements? What changes to programs would be anticipated?**
- **What regulatory language should be used for an additional ALARA planning requirement, and what is the rationale for this language?**
- **How does each of the described methodologies for addressing when an individual approaches the year work for different classes of licensed use?**

Individual Protection Questions

- **Should licensees be allowed to establish different ACL's for different groups of individuals? Basis?**
- **How do the different options impact the ability of licensees to best address protection within their programs?**
- **Are there other ways to evaluate occupational lifetime cumulative exposure that could be considered?**
- **What are the potential impacts of requiring a licensee to account for exposure from concurrent employment with another licensee?**

Individual Protection Questions

- **Should the NRC consider provisions that would require individual occupational workers to provide their occupational dose information in addition to requiring such information from licensees?**
- **Should States be allowed to use more restrictive or prescriptive requirements if NRC decides to use performance based approach?**

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

Lens of the Eye Questions

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

- **What methods should be allowed for measurement or assessment?**
- **What methods should be allowed for recording dose when eye is protected?**
- **What is impact on licensee activities? State regulatory programs?**

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

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

- **Are there technological implementation issues, such as limits of detection, which would make adoption of the ICRP Publication 103 recommendation difficult in certain circumstances?**
- **Are there data on actual dose distributions to the embryo/fetus of a declared pregnant worker? What are the trends for these data?**

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

Traditional vs. SI Units Questions

- **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?**
- **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?**

Traditional vs. SI Units Questions

- **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?**
- **If both SI and traditional units are provided, which set of units should be considered as the regulatory standard?**
- **If only one set of units is specified, what would be the most effective means to provide the other set of units (e.g. as a NUREG or Regulatory Guide)?**

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

- **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)?**
- **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

- **Should Agreement States be required to adopt regulations that are compatible with the requirements in 10 CFR 20.2206?**
- **If Agreement States are required to adopt the requirements in 10 CFR 20.2206(a)(2), (a)(6) (7), (b) and (c), should the compatibility category requirements be changed from Compatibility Category D to Compatibility Category A, B,C, or H&S and why?**
- **If the compatibility category requirements of 10 CFR 20.2206 (a)(2), (a)(6)-(7), (b) and (c) are changed, then should the 10 CFR 20.1502 requirements be changed from Compatibility Category H&S to Compatibility Category A, B, or C, and why?**
- **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)?**


Next Steps

- **Engage Federal Agencies, States, licensees, and with public stakeholders on each of the topics.**
- **Develop Federal Register Notice with specific proposed options and questions.**
 - Plan to publish for input
 - Category 3 public meetings specific to the six issues – broadcast as informational Webinar(s)
 - All comments to be docketed
 - Further opportunities for comment with more specific proposals.
- **Facilitated Dialogue during HPS Annual Meeting in Baltimore**



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

Questions?
















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**Revision of
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<http://www.nrc.gov/about-nrc/regulatory/rulemaking/potential-rulemaking/opt-revise.html>

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