

Advance Notice of Proposed Rulemaking 10 CFR Part 20

Health Physics Society Mid-year Meeting
February 11, 2014

History

- ICRP Recommendations announced December, 2007
- Initial Staff Recommendations – SECY-08-0197, December 2008
- Staff Recommendation for direction – SECY-12-0064, April 2012
- Commission direction SRM-SECY-12-0064, December 17, 2012
 - The Commission approved in part, and disapproved in part, the staff's recommendation
- Staff preparing Advance Notice of Proposed Rulemaking

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
- Conforming Changes to other portions of the Regulations

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.
- **Approach:**
 - TEDE becomes TED
 - New W_T and W_R values incorporated into definitions
 - Appendix B revised with new ALI and DAC values

Methodology and Terminology Issues

- Implications of using TED in place of TEDE
- Calculation for “member of the public” using age and gender weighted composite
- Effluents pathways each 0.5 mSv (50 mrem) or change?
- Time frame for calculations to be available
 - Coherence of EPA, DOE, NRC approaches, and use of mathematical vs. voxel phantoms
 - Acceptable alternatives? e.g. FGR-13, ICRP final dose coefficients

Individual Protection - ALARA

- **Commission Direction:**
 - Occupational 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.
- **Approach:**
 - 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 Approach

- Require ALARA planning
- Require licensee to establish mechanism(s) to examine cumulative exposure, and take progressive restrictions on the occupational exposure 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

Individual Protection ACL Options

- 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 xx mSv
- Other Options?

Individual Protection Issues

- Implications of a more structured framework for ALARA planning and implementation in the regulations?
- How might each approach work for different classes of licensed use?
- Different ACL's for different groups of individuals?
- Other mechanisms to look at cumulative exposures?
- How to address concurrent exposure?
- 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
- **Approach:**
 - Reduction to 50 mSv (5 rem) LDE

Lens of the Eye Issues

- **Relative importance of health endpoint?**
- **Methods for measurement or assessment?**
- **Methods for recording dose when eye is protected?**
- **Are there alternatives to keep LDE cumulative exposure below threshold?**
- **Implications for radiation protection programs?**

Embryo/Fetus

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

Embryo/Fetus Issues

- Apply to post declaration or entire gestation period?
- What should be done if 1 mSv has already been reached at declaration?
- Continue to require efforts to avoid substantial variation above a uniform monthly exposure rate?
- Methods for measurement or assessment?

Traditional vs. SI Units

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

Traditional vs. SI Units Issues

- What is the impact of changing order of presentation to SI first, traditional in parentheses?
- Should licensees be allowed to record and report in SI? Under what circumstances?
- Should Appendix B be given in SI, or traditional, or both? Should the SI values be the “regulatory standard”?
- How do we avoid confusion?

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.
- **Approach:**
 - Add additional 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 Issues

- Are the reasons for reporting now valid for other categories of licensees?
- What categories should be added, and why?
- What are health and safety, and/or trans-boundary considerations?
- Should Agreement States be required to adopt reporting requirements? Rationale? Adequacy and Compatibility level?
- How might States incorporate exposure from machine produced radiations?

Next Steps

- **Federal Register Notice with specific proposed options and questions.**
 - Advance Notice of Proposed Rulemaking in concurrence
 - Plans of webinar(s)
 - All comments to be docketed
- **Further opportunities for comment on more specific proposals when draft technical basis is developed.**

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

Questions?




United States Nuclear Regulatory Commission
Protecting People and the Environment

**Revision of
Radiation Protection
Regulations and
Guidance**



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