Update on NRC Implementation Approaches and Schedule for New 10 CFR Part 20

Information System on Occupational Exposure
ALARA Symposium
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Background

- ICRP revised recommendations announced in December, 2007
- NRC staff analysis indicated areas warranting consideration for revisions – SECY-08-0197, December, 2008
- Commission approved staff recommendation to engage stakeholders and initiate development of technical basis materials on April 2, 2009
- Staff Recommendations – SECY-12-0064, April 25, 2012

SRM-SECY-12-0064 Recommendations for Policy and Technical Direction to Revise Part 20

- The Commission issued the Staff Requirements Memorandum (SRM) to the staff on December 17, 2012.
- The Commission approved in part, and disapproved in part, the staff's recommendation from SECY-12-0064.
- The Commission concluded that there was an insufficient risk and safety basis for changes to the occupational dose limits, recognizing the important role played by the ALARA provisions.

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Revise Methodology and Terminology

- **Supporting Information:**
  - **Compliance calculations different for 10 CFR Part 20 and 10 CFR Part 50**
  - **10 CFR Part 20 based upon models and weighting factors from ICRP 26/30**
  - **Methodology for 10 CFR Part 50, Appendix I still based on ICRP 1 and 2**

- **Staff Recommendation:**
  - **Develop Regulatory Basis to incorporate updated terminology and dose calculation methodologies.**
  - **Explore options to provide flexibility during implementation**

Revise Methodology and Terminology

- **Staff Recommendation (continued):**
  - **Pursue parallel regulatory basis development for proposed rules for 10 CFR Part 20 and 10 CFR Part 50, Appendix I**
- **Commission Direction:**
  - **Develop a regulatory basis for a revision to 10 CFR Part 20 and parallel alignment of 10 CFR Part 50, Appendix I, to align with the most recent methodology and terminology for dose assessment.**
  - **Make corresponding changes in other portions of the regulations.**

Limit for Occupational TEDE

- **Supporting Information:**
  - **ICRP recommends a limit of 10 rem (100 mSv) over a 5 year period, with a maximum of 5 rem (50 mSv) in any one year.**

- **Staff Recommendation:**
  - **Develop regulatory basis for reducing limit to 2 rem (20 mSv) per year**
  - **Explore mechanism for flexibility for those licensees who need it through specified approval process**

Limit for Occupational TEDE

- **Commission Direction:**
  - **Disapproved staff's recommendation to develop the regulatory basis to reduce the occupational total effective dose equivalent (TEDE)**
  - **Continue discussions with stakeholders on alternative approaches to deal with individual protection at or near the current dose limit.**

Occupational Limit - Lens of the Eye

- **Supporting Information:**
  - **ICRP recommendation issued April, 2011**
  - **Reduced limit based on evidence that radiation induces cataracts at lower cumulative levels than previously estimated (≈ 50 rem (500 mSv)).**
  - **TEDE and LDE similar in many situations except**
    - **Shielding of body**
    - **Lower energy β/γ**
  - **Already incorporated into IAEA Basic Safety Standard**

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Occupational Limit - Lens of the Eye

- **Staff Recommendation:**
  - **Develop regulatory basis for reducing limit**
  - **Consider single values of 5 rem (50 mSv) or 2 rem (20 mSv)**
  - **Continue dialogue on how prevention of cataracts should be viewed in comparison with the potential induction of cancer**

- **Commission Direction:**
  - **Continue discussions with stakeholders regarding possible revisions to the dose limit for the lens of the eye**

Occupational Limit - Embryo/Fetus

- **Supporting Information:**
  - **ICRP recommendation of 100 mrem (1 mSv) applied after declaration**
- **Staff Recommendation:**
  - **Develop regulatory basis for reducing limit to 100 mrem**
  - **Consider options of applying over entire gestation period, or only after declaration**
- **Commission Direction:**
  - **Continue discussions with stakeholders regarding possible revisions to the dose limit for the embryo/fetus**

ALARA Planning

- **Supporting Information:**
  - **ICRP added emphasis to consistent use of optimization and use of constraints**

- **Staff Recommendation:**
  - **No significant change in rule text**
  - **Explore guidance to provide additional examples of acceptable mechanisms and programs**

ALARA Planning

- **Commission Direction:**
  - **Develop improvements in the NRC guidance for those segments of the regulated community that would benefit from more effective implementation of ALARA strategies and programs to comply with regulatory requirements.**

Units of Exposure and Dose

- **Supporting Information:**
  - Issue raised by stakeholders to move to SI units (Becquerel, Gray, Sievert)
  - Health Physics Society position statement in Feb., 2012
  - Current metrication policy states preference for SI units first, with special units in parenthetical
- **Staff Recommendation:**
  - Explore implications, benefits, and costs of aligning with metrication policy
  - Close interactions needed with other Federal Agencies and States
- **Commission Direction:**
  - Disapproved the elimination of traditional units from NRC regulations. Both units should be maintained.

Reporting of Occupational Dose

- **Supporting Information:**
  - **Seven categories required to report individual occupational doses**
  - **Licensees in Agreement States report as required by the State**
  - **Some categories of licensed use (e.g. medical) do not report**
  - **Database useful for assessment of impacts, inspection and enforcement, dose to an individual from multiple licensees.**

Reporting of Occupational Dose

- **Staff Recommendation:**
  - **Explore implications, benefits, and costs of requiring additional categories to report**
  - **Explore mechanisms to increase sharing of data between NRC and States to move towards national database**

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

Next Steps

- The staff will be preparing for extensive engagement with Federal Agencies (e.g., DOE, EPA, FEMA, and OSHA), States, the wide range of licensee stakeholders under the jurisdiction of the NRC, and with public stakeholders on each of the topics.
- The staff will develop regulatory basis using Commission direction for each technical issue.
- The regulatory basis will be provided to the Commission as a voting matter.
- The tentative date for development of the regulatory basis is December, 2015.

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Challenges

- **Addressing alternative approaches to deal with individual protection at or near the current dose limit.**

- **Improve reporting of occupational exposure by NRC and Agreement State licensees and increase sharing of data between NRC and States to move towards national database**

Questions?

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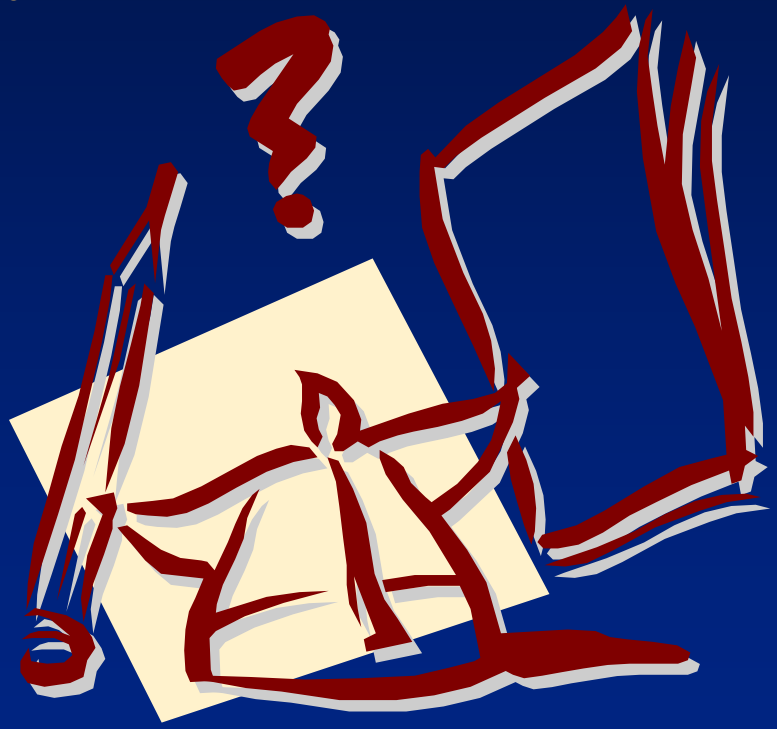

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