



Overview of Proposed Update of the Dosimetry Basis to 10 CFR Part 50, Appendix I Design Objectives

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Rationale for Update

- Outdated Appendix I numerical guides for design objectives
 - dose criteria based on ICRP 2 dosimetry concepts
 - criteria inconsistent with current Part 20 (ICRP 26/30)
 - criteria inconsistent with ICRP 60 and 103 recommendations
- Difficult to defend a dual system of radiation protection
- Inconsistent with global approach in licensing new plants
- Inefficient for licensees and NRC staff
- Potential challenges in design certification & plant licensing
- See *SECY-08-0197* and *SECY-12-0064* for details

Update of Appendix I to Part 50

- Focus in Updating Appendix I & Guidance
 - align App. I criteria with Part 20 if revised to ICRP 103; if not,
 - align App. I criteria with current Part 20 and ICRP 26/30)
 - reconsider criteria in Sections II.A, II.B, and II.C
 - update cost-benefit criteria in Section II.D – ongoing effort by NRR
 - update definition of dose receptors in Sections II and IV
 - revise Section I in differentiating applicability between LWR and other non-LWR designs
 - review and update NRC guidance and regulatory guides
 - voluntary vs. mandated implementation of revised regulations
 - consider parallel rulemakings, Part 20 and Part 50, Appendix I
 - implement revised regulations on a common effective date

Update of Appendix I to Part 50

- Dose criteria - Sect. II.A, II.B, & II.C
 - update dose definitions and express doses as ED or TED
 - keep the 3 & 5 mrem annual total body dose criteria for liquid and gaseous effluents
 - assess whether gamma and beta air dose criteria should remain
 - assess need to retain provisions for releases and doses dominated by noble gases and radio-iodines
 - assess whether to omit reporting requirements for organ doses, e.g., skin and thyroid
 - assess definition of thyroid dose contributors, e.g., ^3H and ^{14}C
 - assess whether organ dose results be available for inspection, but not submitted in annual reports

Update of Appendix I to Part 50

- **Cost-benefit criteria - Section II.D**
 - revise the cost-benefit ratio of \$1,000 per person-rem to post-2012-dollars, based on recent NRR study
 - evaluate effluent treatment system designs and effectiveness in new reactor design certifications
 - reconsider process in determining the need for system augmentation in order of diminishing cost-benefit returns
 - redefine “items of reasonably demonstrated technology” for effluent treatment systems
 - restructure listings of effluent treatment systems in RG 1.110, as potential system augmentations
 - revise the associated maintenance, operating, and other costs of treatment systems in RG 1.110 appendices

Update of Appendix I to Part 50

- Other Associated Revisions
 - redefine compliance requirements for “licensed operation” for sites with multiple licensees under Part 20.1301(a)(1)
 - provide further elaboration on compliance with Part 20.1301(e) [40 CFR Part 190] in Part 20 or guidance
 - update NRC licensing guidance & documents:
 - > NUREG-0800 (SRP Chpt. 11), RG 1.206, 1.109, et al.,
 - > GL 89-01, NUREG-1301, -1302, -0543, and -0133
 - > Computer codes and supporting documents

Homework!

- Should the NRC update Part 50, App. I as considered above?
- Should the focus be only on radiation dosimetry and dose nomenclatures and associated DCFs, with no other changes made to the balance of Part 50, App. I?
- What are the benefits and impacts to the industry?
- What impacts should the NRC consider in moving forward?
- For the stated impacts, are there estimates of costs and cost-offsets for BWR and PWR plants?
- Is there a preferred industry option, voluntary vs. mandated implementation of revised regulations?
- If mandatory, what should be the duration of the implementation phase, e.g., 2, 4, or 6 years?

Outreach Activities

- Fed. Reg. notice inviting input (Vol. 75, No. 186, p.59160)
- Held public workshops in Oct. and Nov. 2010
- Industry meetings (NEI, HP Forum, HPS, RETS/REMP)
- FSME Newsletter (No. 09-1)
- Press release (No. 09-078)
- All State Letter (FSME 09-025)
- NRC website for press releases and links:

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

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What Have We Heard So Far?

- Wide range of views on policy, regulatory, and technical considerations
- General support for an integrated alignment of Part 20 and Part 50, App. I with ICRP 103 recommendations
- Strong recommendations in including EPA in the alignment and integration process, given 40 CFR 190
- Some concerns expressed as to the justification for the proposed revision of Part 50, App. I
- Since Part 50.34a is not a safety standard, why align Part 50, App. I design objectives with Part 20?
- Concerns expressed on implementation time and costs to the industry

Future Plans

- Continue public and industry interactions
- Interact with EPA on its plans to revise 40 CFR 190
- Monitor international developments (ICRP, IAEA, & EU)
- Monitor progress in development of ICRP 103-based DCFs
- Evaluate public and industry comments
- Staff recommendations to Commission – SECY April 2012
- Respond and evaluate Commission SRM on SECY paper
- Prepare a rulemaking plan, if allowed to proceed by Commission
- Conduct public meetings and industry workshops
- Develop technical basis justifying a Part 50, App. I update

Update of Appendix I to Part 50



- Thanks for your attention
- Any questions?
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