Incorporation of Dose Constraints

International Recommendations

- ICRP Publication 103 places an emphasis on optimization in all exposure situations
- ICRP recommends the use of constraints as planning values for optimization.
- Constraints are not limits
- Ongoing dialogue on regulatory approach

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IAEA Basic Safety Standards

The regulatory body shall establish requirements for optimization of protection and safety, require documentation addressing optimization of protection and safety, and establish or approve constraints, as appropriate, for dose and risk, or the process for establishing constraints, that are used for optimization of protection and safety.

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EC Basic Safety Standards

In the optimization of protection in planned exposure situations related to a given radiation source, dose constraints shall be established, as appropriate, for workers and members of the public.

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EC Basic Safety Standards

- **(a) For occupational exposures, the dose constraint shall be an upper bound on the individual dose to define the range of protection options considered in the process of optimization, to be established as an operational tool in cooperation between the employer and the undertaking under supervision of the competent authorities.**
- **(b) For public exposure, the dose constraint shall be an upper bound on the individual dose that members of the public receive from the planned operation of a specified radiation source; competent authorities shall set constraints in such a way as to also ensure compliance with the dose limit for the sum of doses to the same individual from all authorized practices;**

NRC Regulations

- Licensees required to develop, document, and implement a radiation protection program
- Licensees required to use … procedures and engineering controls … to achieve doses that are ALARA
- NRC does not require licensees to establish planning values in their RP programs or ALARA analysis
- Planning values are used by many licensees as a good practice

NRC Regulations

- Part 20 defines a constraint as “a value above which specified licensee actions are required”
- Constraint for airborne effluents from non-reactor facilities
- Actions are to report, and take appropriate corrective action
- Violation is not the exceeding of the constraint, but if actions are not taken

Options

- **4.a: No change. Do not incorporate the use of constraints into NRC's radiation protection framework.**

- **4.b: Change the current regulation to specify that licensees establish and use constraints as part of their radiation protection program and the implementation of the ALARA requirement.**

Options

- **4.c: In addition to requiring the establishment and use of constraints, require that the licensee use a numeric value that does not exceed some specified value. One such value for occupational exposure could be the 2 rem (20 mSv) per year level.**

Questions

Q4-1: Are there any significant anticipated benefits and impacts associated with imposing the use of constraints in a licensee's radiation protection program?

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Questions

Q4-2: Are there any anticipated implementation impacts on inspection, compliance, and reporting anticipated?

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Questions

Q4-3: What relationship should a constraint have to the dose limit, if any?

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Questions

Q4-4: Is a requirement to establish and use constraints an appropriate, or inappropriate, insertion of a regulatory requirement?

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Questions

Q4-5: How familiar are you with the use and implementation of constraints or planning values in a radiation protection program?

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Questions

Q4-6: Are constraints (planning values) used in your current licensed activities, and if so, can you share insights on the use of these constraints?

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Other Questions ?

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