

From: Anthony Huffert
To: Robert Meck —RCS
Date: Thu, Jul 10, 2003 12:36 PM
Subject: DS-161 comments

Bob -

Based on my review to date, below are my preliminary comments on the Draft Safety Guide and Draft Safety Report:

1. Surface contamination limits are discussed in the guide and report, but values are not provided reportedly due to the fact that certain factors cannot be taken into account for deriving generic concentration levels in DS-161 (section 3.9 of the report). This statement requires additional explanation. Does this mean that other international or U.S. studies that have derived surface contamination levels are flawed, according to the IAEA?
2. The number of scenarios used for calculating activity concentration levels appears small. Are there other important scenarios that should have been considered in DS-161, based on the experience in developing the final version of NUREG-1640 (including direct reuse)? If there are important (I do not use the term bounding) scenarios identified by the final version of NUREG-1640, they should be submitted to IAEA for consideration in DS-161.
3. The report states that children of the ages between 1 and 2 years of age are the most critical age group for external exposure. For child doses, a factor of 1.2 is applied to account for differences in external exposure to photons above 100 keV. This value appears reasonable. But the exposure duration for children to external radiation sources may need further evaluation. For example, the "realistic" assumption for a 1 to 2 year old child residing in a house for only 4,500 hours per year appears low (section 4.2 of report).
4. In calculating generic concentration levels, an account was taken for the lapse of time between the time an item is "cleared" and the time a radiological exposure occurs (section 3.6 of the guide). This can be an important factor in calculating levels for short-lived radionuclides. However, exemption levels in the BSS do not allow for such decay (no time lapse) because direct handling of the material is assumed by workers in the facilities that use the radioactive material. This appears to be an inconsistency in the dose modeling approaches used for exemption and clearance. Further justification should be provided beyond what is provided in the report and guide.
5. The terms large quantities, moderate quantities, and bulk quantities should be expanded for clarification of methodology.
6. In section 8, the guide states that IAEA is currently preparing guidance on averaging procedures. It recommends that the quantity of material should be considered when a regulator body develops sampling, monitoring and detection procedures. Such implementation considerations should be developed as part of the guide, not separately.

Tony

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Better sentence structure.

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CC: Frank Cardile; Jean-Claude Dehmel; Kim Karcagi; Phyllis Sobel; Scott Moore