



{In Archive} Comments on PRG for Radionuclides User's Guide

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to:

Stuart Walker

07/29/2004 09:29 PM

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2 Attachments



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Stuart-

Attached are Anita Meyer's and my comments on the Preliminary Remediation Goals for Radionuclides User's Guide. Please contact us if you have any questions.

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Reviewer: Brian Hearty  
Discipline: Health Physics  
CX Project Review No.: 69186  
Date: July, 29, 2004  
Document Name: EPA Preliminary Remediation Goals for Radionuclides User's  
Guide

A quality control review was not performed, it was assumed that parameter values were verified by ORNL. The review was performed to evaluate accuracy of the text and usefulness to potential users; environmental professionals that are not well versed in radiological risk assessment and other more experienced users such as health physicists and risk assessors.

1. Section 3.3. Fifth Bullet. The presence of multiple radionuclides is presented as a potential problem that should be considered. Since contamination with multiple radionuclides is an extremely common occurrence, it is recommended that guidance be included here or a link to an appropriate reference provided.
2. Section 4. The brief description of the Tapwater scenario contained on its graphical representation states that Tapwater should be considered an element of the residential and agricultural scenarios. It is recommended that Section 4.5 include clear direction on how this should be done. Include guidance on how this risk-based PRG should be used when there is an MCL for a particular radionuclide that may be many orders of magnitude higher.
3. Section 4.8. Revise the paragraph here to state that four parts of the land use equations require further explanation as Section 4.8.4 explains the Area Correction Factor.





Reviewer: Anita Meyer  
Discipline: Risk Assessment  
CX Project Review No.: 69186  
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Guide

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1. Disclaimer, third paragraph. Recommend including a link to the website where the user can find ERAGS. <http://www.epa.gov/superfund/programs/risk/ecorisk/ecorisk.htm>
2. Disclaimer, fourth paragraph. The web calculator is discussed in the context of Risk-Based Corrective Action (RBCA)-type Tier 1,2 and 3 assessments. Such tiered assessments are not discussed in any risk assessment guidance. This comparison is not consistent with the rest of the document and is not appropriate unless it could be linked to a referenced Superfund document. I am unaware of any references that would be appropriate for this specific discussion. Recommend the following text change for the first part of this paragraph:  
"This web calculator may be used to develop generic PRGs for radionuclides for several different land uses. The calculator is flexible and may be used to derive site-specific PRGs as more site characterization information is obtained (EPA 2000a). Models reviewed by EPA in the Soil Screening Guidance Radionuclide Technical Background Document at....."
3. Introduction, third & fourth paragraphs. Recommend combining these two paragraphs and reordering sentences as follows:

"This database tool presents standardized risk-based PRGs and variable risk-based PRG calculation equations for radioactive contaminants. Ecological effects are not considered in the calculator for radionuclide PRGs. PRGs are presented for residential soil, outdoor worker soil, indoor worker soil, tap water, and fish ingestion. The risk-based PRGs for radionuclides are based on the carcinogenicity of the contaminants. Cancer slope factors (SFs) used are from [HEAST](#). Non-carcinogenic effects are not considered for radionuclide analytes, except for uranium for which both carcinogenic and non-carcinogenic effects are considered. To determine PRGs for the chemical toxicity of uranium, and for other chemicals, go to the [Soil Screening Guidance](#) webpage. The standardized PRGs are based on default exposure parameters and incorporate exposure factors that present RME conditions. This database tool presents PRGs in both activity and mass units. Once this database tool is used to retrieve standard PRGs or calculate site-specific PRGs, it is important to clearly demonstrate the equations and exposure parameters used in the calculations. Discussion of the assumptions used to calculate PRGs in the document where the PRGs are presented such as a Remedial Investigation (RI) Report or Feasibility Study. "

4. Section 2.1, first paragraph. In the third sentence clarify that exposure assumptions are used with SFs to generate radiation risk estimates. Suggested text change:  
"In risk assessments these SFs are used in calculations with radionuclide concentrations in soil and exposure assumptions to estimate cancer risk from exposure to radioactive contamination. The calculations may be rearranged to generate PRGs from a specified level of risk."
5. Section 2.3. Again, writing in terms of Tiered assessments is not consistent with the EPA SSL documents nor with EPA RAGS guidance. Delete the Tier 1, 2 and 3 parenthetical statements.
6. Section 3.1, first paragraph. For most projects it is useful to develop a CSM for human receptors and another for ecological receptors. Risk assessors advocate developing preliminary CSMs at the SI phase and refining them as more site characterization is gathered. Recommend that this be reflected in this paragraph.
7. Section 4.1, fourth bullet, and other places the text occurs in the document. Recommend rewriting the small text to:  
"The exposed and root vegetable consumption rates were combined to represent total vegetable consumption."
8. Graphic for outdoor worker. It is not clear why a building with smoke coming from a stack is prominent in the graphic. The PRG calculator assumes that the worker is outdoors 100% of the time and there is no assumed exposure to contaminants from a building source. Recommend moving the building (minus the stack) to the background and the front end loader be moved to the foreground.