

References



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NMED  
Hazardous Waste Bureau



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July 13, 2013

DCN: NMED-2013-10

Mr. David Cobrain  
NMED - Hazardous Waste Bureau  
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Building One  
Santa Fe, NM 87505

RE: Draft Technical Review Comments on "Derivation and Use of Radionuclide Screening Action Levels, Revision 2," Los Alamos National Laboratory (LANL), dated October 2012.

Dear Mr. Cobrain:

This letter serves as a deliverable and addresses the technical review of the above-reference document.

The primary difference noted with Revision 2 to the radionuclide screening action levels (SALs) was a change in the selection of the target dose limit. In previous versions of these screening levels, the driving regulatory document that LANL followed was the National Nuclear Security Administration Service Center (NNSA SC), which dictated that site-specific radiation dose not exceed 15 millirem per year (mrem/yr). In addition, the use of a 15 mrem/yr dose was demonstrated by the Environmental Protection Agency (EPA) as being equivalent to an approximate increased lifetime cancer risk of 1E-04. However, Revision 2 of the radionuclide SALs follows the guidance outlined in 2011 Department of Energy (DOE) Order 458.1 (<http://nnsa.energy.gov/sites/default/files/nnsa/inlinefiles/doe%20order%20458.1.pdf>).

Following DOE Order 458.1, a site-specific modeled radiation dose up to 25 mrem/yr for cleanup guidelines and the release of real property is allowed. However, the Order also specifies that the principles of As Low As Reasonably Achievable (ALARA) also be applied. LANL has proposed (Section 4) that for sites where public access is or will be available and the radiological dose is above 3 mrem/yr and equal to or below 25 mrem/yr, a quantitative ALARA analyses is conducted.

In researching EPA's position with the DOE Order 458.1, it appears that EPA's understanding is that ALARA will achieve cleanup levels that will be within the risk range EPA considers protective (<http://pbadupws.nrc.gov/docs/ML0126/ML012670035.pdf>). The EPA risk range, as established in the 1990 revisions to the National Contingency Plan and EPA guidance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) for cleanups and remedial actions under the Superfund program, is 1E-04 to 1E-06 excess lifetime cancer risk from all radiological and non-radiological carcinogens. Documentation has

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not been found requiring sites to comply with the previous applied 15 mrem/yr dose, however, EPA has strongly suggested that DOE to meet the Superfund/EPA risk range.

While the use of a 25 mrem/yr dose limit does result in less conservative radiological SALs, the guidance specifically states in Section 4 of the SAL guidance that "if the analysis determines the dose is not ALARA, additional remediation is warranted to lower the dose further or an alternative scenario may be used to restrict activity and land use for that property, if transferred." The application of ALARA should ensure adequate evaluation and assessment of risk is conducted and provide for flexibility in requiring additional actions and/or controls on sites to be released for public use.

If you or any of your staff have questions, please contact me at (801) 451-2864 or via email at [paigewalton@msn.com](mailto:paigewalton@msn.com).

Thank you,



Paige Walton  
AQS Senior Scientist and Program Manager

cc: Neelan Dhawan, NMED (electronic)  
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