

November 23, 2010

Mr. Bryan C. Bower, Director
 U.S. Department of Energy
 West Valley Demonstration Project
 10282 Rock Springs Road
 West Valley, NY 14171-9799

Dear Mr. Bower:

SUBJECT: Responses to NYSERDA Comments on the *Phase 1 Characterization Sampling and Analysis Plan (CSAP) for the West Valley Demonstration Project (WVDP)*

Thank you for providing written responses to NYSERDA's comments on the Department of Energy's (DOE) *Phase 1 Characterization Sampling and Analysis Plan for the West Valley Demonstration Project*, dated October 21, 2010. Unfortunately, your response regarding decisions of whether or not soil sample results are inconsistent with background (Comment #21), does not alleviate our initial concern. To that end, NYSERDA has provided additional information to substantiate our view on this issue (see attached table). Further, we would like an opportunity to resolve this matter prior to the commencement of CSAP activities.

Please contact me, or Andrea Mellon of my staff, to arrange a convenient time to discuss the subject and identify a path forward.

Sincerely,

WEST VALLEY SITE MANAGEMENT PROGRAM



Paul J. Bembia, Director

PLP/amd

Enclosure:

1. NYSERDA Unresolved Comment on the *Phase 1 Characterization Sampling and Analysis Plan for the West Valley Demonstration Project*

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Messr. Bryan C. Bower

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cc: K. I. McConnell, NRC (w/att.)
C. J. Glenn, NRC (w/att.)
M. S. Bellis, USDOE-WVDP (w/att.)
M. N. Maloney, USDOE-WVDP (w/att.)
D. A. Munro, NYSERDA-Alb. (w/att.)
P. L. Piciulo, Ph.D., NYSERDA-WV (w/att.)
A. L. Mellon, NYSERDA-WV (w/att.)
File: 60205 (w/att.)

NYSERDA Unresolved Comment on the *Phase I Characterization Sampling and Analysis Plan for the West Valley Demonstration Project*
Dated October 21, 2010

#	Page/Section Paragraph/ Line/Bullet	Comment	Reviewers Proposed Resolution	NYSERDA's Unresolved Concern
21	59/Sect. 8.3/ Para.1	<p>This section states that surface soil sample results are considered "inconsistent with background" if the activity concentrations exceed their 95% Upper Tolerance Level (UTL) "by more than three times the reported error associated with the result." Using the 95% UTL in addition to three times the uncertainty for the anthropogenic surface soil radionuclides, could potentially create much larger background concentration levels for the non-naturally occurring radionuclides.</p>	<p>Provide the technical rationale for using the 95% UTL in addition to three times the uncertainty for the anthropogenic surface soil radionuclides.</p> <p><i>Response: Throughout the CSAP there are references to determining whether sample results are consistent with background conditions. An example is determining whether sampling to depth should be pursued in response to surface soil results that indicate contamination. The goal of the described comparison is to minimize false positive results (i.e., flagging a sample as having impacts for one or more radionuclides when in fact conditions are at background levels) while still confidently identifying contamination when it truly is present. In general, a 95% UTL comparison should provide a false positive rate that is less than 5% in the case where there is only one contaminant of concern. However, false positive rates rapidly increase when a background comparison includes multiple contaminants of potential interest, which is the case for</i></p>	<p>NYSERDA appreciates the complexity of sampling for multiple radionuclides to determine the difference in survey unit and reference (or background) locations. The CSAP identifies a 95% UTL for the Type I or α-Error associated with these measurements, and includes the addition of three times the uncertainty to determine whether the sample result is consistent or not with background. The addition of three times the uncertainty will result in the acceptance of higher concentrations in the survey unit being identified as consistent with background. This may mean that a sample or survey unit could be identified as being consistent with background, when in fact, it contains contaminants of concern that exceed background.</p> <p>Because initial background or survey unit sampling has not been conducted, the proposed approach for the comparison of these populations seems premature. The proposed approach does not appear to be conservative and is not consistent with Appendix D of the MARSSIMS.</p> <p>Finally, based upon the October 21, 2010 response, the data evaluation process for</p>

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			<p><i>the WVDP. Adding the additional 3x uncertainty requirement is an attempt to provide acceptable false positive rates for comparisons involving multiple radionuclides. In almost all cases, this rule would still allow identification of radionuclides being inconsistent with background at levels well below the Phase 1 surface soil DCGL_w values. The exceptions to this are I-129 and Np-237 – these two radionuclides are simply a significant analytical challenge with the Phase 1 DCGL_w values.</i></p>	<p>I-129 and Np-237 for background and survey units has not been identified and should be included in the CSAP.</p>