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February 1, 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: New York State Energy Research and Development Authority (NYSERDA) Comments on the Phase 1 Final Status Survey Plan (FSSP) for the West Valley Demonstration Project (WVDP)

NYSERDA is providing the enclosed comments on the Department of Energy's (DOE) *Phase 1 Final Status Survey Plan for the West Valley Demonstration Project,* dated December 16, 2009.

NYSERDA respectfully requests that DOE provide a written response to the enclosed comments.

Any questions regarding the enclosed comment package should be directed to Paul L. Piciulo, Ph.D., at (716) 942-9960 extension 4378.

Sincerely,

WEST VALLEY SITE MANAGEMENT PROGRAM

Paul J. Bembia, Director

JCK/amd
Enclosure:
1. NYSERDA Comments on the *Phase 1 Final Status Survey Plan (FSSP) for the West Valley Demonstration Project (WVDP)*

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NYSERDA Comments on the *Phase 1 Final Status Survey Plan for the West Valley Demonstration Project,* Dated December 16, 2009

February 1, 2010

Cmt. #	*Page/Section No.*	*Comment*	*Reviewers Proposed Resolution* (If your comment is a point of clarification it probably doesn't need a proposed resolution.)
1.	General	Based on the Characterization Sampling and Analysis Plan (CSAP) data collection, this Final Status Survey Plan (FSSP) may need to be revised. NYSERDA requests an opportunity to review the CSAP when it is finalized in February 2010, and subsequently comment on the revised FSSP.	Prepare and submit the CSAP work plan and results to NYSERDA for our review prior to the resubmitting the final FSSP to us for comments.
2.	Page viii, Line 12	The Executive Summary states that "The plan uses gamma scans combined with biased soil samples to address $DCGL_{emc}$ concerns." Given the 18 Radionuclides of Interest (ROIs) for this FSSP, is the use of gamma scans adequate for field measurements in deciding biased soil sample locations or in determining $DCGL_{emc}$ for all 18 ROIs?	Clarify how the gamma scans performed in the field will provide the necessary accuracy in determining biased sample locations as well as ensuring compliance with the $DCGL_{emc}$ for all 18 ROIs. Further, if all 18 ROIs cannot be detected using Gamma Walkover Surveys (GWS), explain how those radionuclides (e.g., C-14, Sr-90, Tc-99 and Pu-241) will be analyzed or accounted for during the field measurement process.
3.	Page 3/ Section 2.1/Paragraph 2	Section 2.1 identifies the excavation depth planned for the remediation activities in Waste Management Areas (WMAs) 1 and 2. Given that the depth of Lagoon 2 exceeds the proposed 14-ft excavation, reconsider the excavation depth for WMA 2.	Reconsider the depth of the excavation necessary for WMA 2.
4.	Page 4/Section 2.2	As stated in Section 2.2, the Derived Concentration Guideline Levels (DCGLs) for each ROI are based on a 25 millirem (mrem)/year (yr) dose requirement. If the goal is the unrestricted release of WMA 1 and 2 (i.e., the sum total dose from all 18 ROIs is less than 25 mrem/yr for WMA 1 and 2), are the DCGLs calculated low enough to achieve less than 25 mrem/yr in these areas? Specifically, as defined in the Phase 1 DP, the cleanup goals for soil and stream sediment are 22.5 for soil and 2.5 for stream sediment, for a total contribution of 25 mrem/yr (see Tables 9-1 and 9-3 of Rev. 2 of the Phase 1 DP). Clarify the contribution to the dose from the subsurface soils and how these DCGLs are included in the less than 25 mrem/yr for WMAs 1 and 2.	Clarify how the proposed DCGLs for WMAs 1 and 2 are adequate (i.e., less than 25 mrem/yr) for contributions from all 18 ROIs as well as each of the sample media (e.g., soils, stream sediments and subsurface soils).
5.	Page 4/Section	The paragraph is truncated after the word "stream." The	Relocate the fragmented paragraph on Page 7 to Page 4.

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	2.2/Last sentence	remainder of this section, currently on Page 7, should be moved to Page 4.	
6.	Page 7/Section 2.2	The final set of DCGL values listed in Table 5-14 of the Phase 1 DP is projected for year 2041 (after one additional half-life decay of Cs-137 and Sr-90). The FSSP does not mention that the DCGL values are for year 2041. As the Final Status Surveys for WMAs 1 and 2 will likely occur before year 2041, the cleanup goals for Cs-137 and Sr-90 should reflect the time of remediation, and if these units are not below 25 mrem/yr unrestricted release, this should be clearly stated, along with the tentative date that these units will be below 25 mrem/yr unrestricted release.	Incorporate the DCGL values for Sr-90 and Cs-137 at the time of remediation, and for year 2041.
7.	Page 9/Second bullet/*Chemical Contamination*	Although the paragraph acknowledges the potential need for chemical analyses of soil samples collected as part of the Phase 1 FSSP, it states that it is "not directly within the scope of the Phase 1 FSSP." If RCRA sampling will be required and it is anticipated that FSSP samples will be used, either the CSAP or the FSSP should incorporate sampling plans so that holding times and/or other RCRA-parameter specific requirements will be met.	Identify the need for RCRA samples, and plan accordingly for sampling and analyses in the FSSP. If RCRA sampling will be covered by a separate SAP, identify when that SAP will be available for review. Also, provide a crosswalk between the CSAP and FSSP with a separate RCRA SAP. There should be little separation in time between completion of the CSAP and preparation of a RCRA SAP as the field work should be done concurrently according to approved plans by the requisite regulatory agencies.
8.	Page 10/First bullet/Last sentence	The sentence states: *"If the CSAP data results indicate only a subset of the ROI are pertinent for specific areas, then the FSSP sample analyses for those individual areas may be limited to the smaller set of relevant ROI."* The criteria for reducing the number of radionuclides should also include location historical knowledge and inventory records.	Identify all of the decision criteria in the FSSP for assessing CSAP sample results used to determine the appropriate ROI list.
9.	Page 14/Section 3.4	The defined boundaries of this study indicate that the soil laydown areas will undergo Phase 1 FSS data collection to document their contamination status regardless of whether subsurface soil contamination is known to be present. This data collection will only focus on the upper one meter of soil for the area. How will this data be incorporated into future biased sampling efforts that will be completed during Phase 2 decommissioning activities?	Add language in this section regarding future sampling of the soil laydown areas during the Phase 2 decommissioning activities.

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10.	Page 22/Section 4.3	Targeted areas for biased sampling should also include areas with elevated contamination identified during the CSAP data collection activities.	Include contamination areas identified during the CSAP data collection as targeted areas in which biased sampling will be performed.
11.	Pages 27-28/Section 4.7/Line 1	As stated in the last paragraph on Page 27, "As a point of comparison, there are limited data available for subsurface soil samples collected from the Lavery till interface." Given the limited data available for WMAs 1 and 2, additional data should be collected to increase the relative shift for these areas.	Perform additional subsurface soil sampling in WMAs 1 and 2 during the CSAP to increase the relative shift for these areas.
12.	Page 43/Section 5.4/*Gamma Surveying Protocols*	This section describes daily quality checks for detectors capable of detecting low energy gamma-emitting radionuclides such as Am-241. The Quality Control (QC) protocol will be used for CSAP and FSSP GWSs. While the protocol described are appropriate, an additional measurement from the "calibration" location should be taken to determine the detector's efficiency for detecting ROI source term at depth (i.e., if contamination is 2 or 5 cm below grade, will the detector identify the ROI?), to fully understand the limitations of the GWS data.	Identify GWS instrumentation limitations associated with contamination at discrete depth intervals.
13.	Page 43/Section 5.4/*Gamma Surveying Protocols*	As defined in the DP, CSAP and FSSP, surface soils are soils to a depth of one meter. As such, it is unclear how the proposed field screening methods (e.g., gamma survey using FIDLER and/or NaI detectors) could identify most of the 18 ROI if they are covered with even a few cm of soil. Consequently, unless surrogate isotopes are present in the upper 5 cm of soil that have gamma or x-ray energies well above the Compton edge (e.g., Cs-137), as documented during the off-site Cesium prong investigation (Dames and Moore, 1995), most of the ROI would not be identifiable at depths exceeding a few centimeters. How will this factor be incorporated into the CSAP or FSSP planning for interpreting GWS data results?	Identify the limitations associated with using GWS data for decisions concerning what ROI to sample for or for identifying localized hot spots within a unit.
14.	Page 44/Section 5.4/ *Gamma Surveying Protocols*	The QC Check for each detector consists of stationary readings at the start and end of each day the detector is in use. The detector is determined to be "out of control" if the detector result exceeds plus or minus two standard deviations. If an "out of control" measurement is obtained, the measurement is	Amend this section to include language regarding detector bias.

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		repeated. If the results are still outside plus or minus two standard deviations, additional investigation is required. How is detector bias tracked? Specifically, if a detector consistently reports low values for a historical location, how is this bias addressed?	
15.	Page 46/Section 5.6.1/*Contractor Quality Assurance Program*	This section identifies the radiological quality control (RQC) program requirements for the FSSP. However, since the CSAP data will be an intrinsic part of the information used and assessed during the FSSP, this section should describe how the CSAP data will comply with equivalent QA/QC requirements.	Identify other data sources and incorporate the requirement that these sources will meet equivalent QA/QC requirements as detailed in the FSSP.
16.	Page 58/Table 5/Estimated MDCs of ROI in Soil	It is assumed that the table identifies what might be expected for the detectors if contamination is in a specified geometry (1m x 1m, depth thickness 0.5 to 2 cm) as noted in MARSSIMS Appendix H. MARSSIMS also notes that contaminated soil depths greater than a few centimeters result in an increased scan MDC because the increase in contamination depth does little to increase detectability of these low energy photons. To better evaluate detector results, it will be necessary to determine how much of an ROI in a specific geometry (i.e., depth and areal extent) is needed to produce a specific count rate. Since the FSSP defines surface soils as soils to a depth of one meter, in the absence of near surface contamination, it is highly unlikely that GWS data can be used to identify Cleanup Goal exceedances or even elevated subsurface (> 2 cm in depth) locations.	Note the geometry configuration used to determine detector MDCs for various ROI and the limitations of the GWS data for unit decisions.

References

1) Dames and Moore, *Western New York Nuclear Service Center Off-Site Radiation Investigation*, December 1, 1995.