



August 10, 2006

Mr. Larry Camper, Director  
Div. of Waste Management & Env. Protection  
US Nuclear Regulatory Commission  
NMS/DWM/DCB  
TWFN - T7F27  
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Dear Mr. Camper:

**SUBJECT: Public Receptor Location in West Valley Performance Assessment Modeling**

The New York State Energy Research and Development Authority (NYSERDA) recently reviewed and submitted comments on *NUREG-1854, Standard Review Plan for Activities Related to U.S. Department of Energy Waste Determinations, Draft Report for Interim Use and Comment (SRP)*. We were pleased to note that the SRP provided guidance on terminology, and appropriate location and lifestyle assumptions for public receptors in performance assessment modeling for waste incidental to reprocessing determinations (see Footnote 1 on Page 1-1 and Section 4.1.1.4, *Receptor Characteristics*). NYSERDA is writing to seek clarification regarding the application of this guidance to West Valley.

At West Valley, a performance assessment model supporting a waste incidental to reprocessing (WIR) determination for the four underground high-level waste tanks (as well as potential WIR determinations for some residual wastes in below-grade piping and cells in the Process Building) must not only support WIR determinations, but must also support: (1) an assessment of the environmental impacts from the application of the license termination rule (LTR) criteria to various alternative decommissioning approaches; and (2) U.S. Nuclear Regulatory Commission's (NRC) determination as to whether the Environmental Impact Statement (EIS) and Decommissioning Plan (DP) preferred alternative meets the LTR criteria. The existing West Valley performance assessment modeling (e.g., 2005 Pre-Decisional Draft EIS) applies different terminology and makes different assumptions regarding receptor characteristics than those set forth in the SRP. Considering the cross-functional purpose and importance of performance assessment modeling efforts to decommissioning decisions at West Valley, NYSERDA is writing to request West Valley-specific guidance so that future performance assessment modeling efforts for the West Valley site can benefit from, and be consistent with, this nationally applicable NRC guidance.

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NYSERDA is requesting this performance assessment guidance while continuing to have serious doubts about whether WIR criteria can be applied to reclassify residual high-level radioactive waste (HLRW) that may remain in tanks at West Valley. The West Valley Demonstration Project (WVDP) Act has a unique definition of HLRW, and West Valley differs from U.S. Department of Energy (DOE) sites in South Carolina and Idaho, where Section 3116 of the National Defense Authorization Act applies, in that West Valley is a state-owned site. Assuming, for the sake of argument, that the WIR process can be applied by DOE and NRC at West Valley, the presence of state-owned, state-managed property adjacent to state-owned, DOE-controlled property, provides a complexity not present at the DOE-owned WIR sites. As such, additional NRC guidance is required to clarify how the physical site components and the administrative boundaries should be treated in the single performance assessment needed to satisfy the three West Valley processes (i.e., WIR, EIS and DP).

We would appreciate NRC's concurrence or clarification as to whether we have correctly interpreted and applied the SRP guidance in the following West Valley-specific statements :

- The term "**DOE site**" refers to the approximately 167-acre WVDP within the chain-link fence.
- The term "**site**" and "**facilities**" refer to the integrated North Plateau Closure Unit, inclusive of the four HLW tanks, the portions of the Process Building, associated piping and any other material or structures that are proposed to be disposed of as part of the integrated North Plateau closure design concept. The engineered barriers, including caps, cutoff walls and the natural features of the North Plateau (i.e., geological features and streams) are also included in the concept of "site."
- The term "**disposal unit**" refers to each individual HLRW tank that is closed in-place, any low-level waste tanks, individual Process Building cells, individual pipe chases, or any other potential HLW radiological source term, etc., which may be closed within the cutoff walls and cap of the North Plateau integrated closure design.
- The term "**disposal area**" refers to the three-dimensional (3D) area defined by and contained within a vertical plane along a fictitious line drawn tangentially to the disposal units and circumscribing the disposal units. This would be a vertical plane interior to or within the North Plateau integrated closure design cutoff walls and the edge of the cap.
- The term "**buffer zone**" refers to the 3D annulus area defined by and contained within a vertical plane along a fictitious line that is drawn 100 m beyond the boundary of the disposal area or a similar distance that is supported by a technical justification, excluding the central disposal area.
- The term "**disposal site**" includes both the disposal area and the buffer zone, as defined above.
- The "**public receptor**" should be assumed to engage in residential, agricultural, or other activities at the boundary of the disposal site, consistent with regional practices. At West Valley, this means that public receptor should be located 100 m outside a line drawn tangentially to the disposal units and circumscribing the disposal units, or at a point of maximum exposure if the point of maximum

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exposure is more than 100 m from the disposal unit.

NRC clarification of performance assessment receptor-related terminology and assumptions as well as a clear establishment of an expectation of equally protective and consistent modeling approaches across all the HLRW sites will benefit the three ongoing performance assessment-based regulatory processes at West Valley by clearly describing unit boundaries, size assumptions for buffer zones and appropriate public receptor locations. For instance, the SRP indicates that an appropriate buffer zone is 100 m beyond the unit boundary and that a public receptor should be located at the edge of this buffer zone. This SRP-proposed buffer zone size assumption and public receptor location is in stark contrast to the public receptor location used in some of the dose estimates in the West Valley 2005 Pre-Decisional Draft EIS where the nearest public receptor was located two miles from the major source-term units on the site. Clarification of these matters now will ensure the efficiency of future performance assessment efforts and reduce the need for multi-agency reviews.

Thank you in advance for responding to this request for clarification; and, once again, we commend the NRC for the high quality of the SRP. If you have any questions regarding this request, please contact Colleen Gerwitz at (716) 942-9960, ext. 4435.

Sincerely,

WEST VALLEY SITE MANAGEMENT PROGRAM



Paul L. Piciulo, Ph.D.  
Director

CLG/amd

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