Enclosure #1: "NYSERDA Comments on the *Phase 1 Decommissioning Plan for the West Valley Demonstration Project* to the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy"

NYSERDA Comments on the Department of Energy's *Phase 1 Decommissioning Plan for the West Valley Demonstration Project,* Dated December 3, 2008

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
1.	General	NYSERDA employed the technical support of an Independent Expert Review Team (IERT) to assist in the review of the *Phase 1 Decommissioning Plan for the West Valley Demonstration Project* (DP). The IERT report, entitled *"Independent Review of the Phase 1 Decommissioning Plan for the West Valley Demonstration Project,"* describes the approach and results of their review. NYSERDA is providing the IERT report as well as our comments (below) for consideration by the NRC in their review of the DP and development of a request for additional information. The IERT report and an expanded version of NYSERDA's comments are being provided to the Department of Energy (DOE) to be addressed in a future revision of the DP.	NYSERDA would appreciate written responses describing how NYSERDA's comments, as well as the concerns raised by the IERT, were considered in NRC's review of the DP.
2.	General	The Derived Concentration Guideline Levels (DCGLs) identified for Sr-90 and Cs-137 are the DCGL values at year 2041, and not the values at the completion date for Phase 1 as indicated in the DP. Per the DP, Phase 1 is expected to begin in year 2011 and be completed in year 2018. Since the DCGLs are based on the concept of active management of the site until 2041, NYSERDA expects that DOE will provide the necessary monitoring, maintenance and security controls until year 2041.	
3.	General	The text on Page ES-19 (and in other sections of the DP) states that *"and upon NRC approval of this plan, DOE would begin Phase 1 of the proposed decommissioning in 2011 and it would last until 2018."* This does not accurately describe NRC's role and responsibility under the West Valley Demonstration Project (WVDP) Act. Consistent with the WVDP Act, NRC has stated (publicly) that they	Update the language in the DP to more accurately reflect NRC's role.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		will conduct an *"informal review and consultation,"* after which they plan to issue a Technical Evaluation Report. Similar text on Page 7-48 references *"NRC's approval of this plan."*	
4.	General	The DCGLs and cleanup goals in the DP are established such that the entire 25 mrem dose limit of the License Termination Rule can be allocated to the Phase 1 removal actions. If the cleanup of the facilities and soils included in the scope of this DP achieves the DCGLs as presented, could that severely limit the allocation of dose to the Phase 2 decommissioning activities?	The DP should describe how the Phase 1 DCGLs allow for possible Phase 2 actions that may leave radioactive material in place.
5.	General	Section 9 of the DP describes a process for developing and implementing Final Status Surveys of remediated areas. The DP states that arrangements would be made for any confirmatory surveys that NRC desires. Since it is NYSERDA's intent that the units decommissioned per the WVDP policy statement would also be considered decommissioned for the termination of the NYSERDA CSF-1 license, NYSERDA requests that NRC perform confirmatory surveys during Phase 1 decommissioning activities. Such surveys would be particularly important for excavations for Waste Management Areas (WMAs) 1 and 2 as well as the fill material for each excavation.	NRC should be prepared to perform confirmatory surveys of the decommissioned areas of the WVDP.
Conceptual Models: The validity of the DCGLs to be used to demonstrate compliance with the NRC policy statement and 10 CFR 20 Subpart E depends, in part, on the adequacy of the site conceptual models. Uncertainties in, or lack of accurate information on, the source terms and physical features of the site can limit the development of exposure scenarios used to establish adequate site conceptual models. Questions and comments presented below are aimed at clarifying factors that can affect the site conceptual models as presented in the DP. The IERT report presents additional observations regarding the adequacy of the conceptual models and engineered barriers presented in the DP.			
6.	General	The IERT report raises several concerns regarding the site conceptual models and the basis for certain	See the IERT report for additional details regarding their analysis of the conceptual models and engineered barriers.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		assumptions. For example, a feature of the West Valley site critically important to the transport and release of radionuclides is erosion. The conceptual models ignore the potential impacts of gully erosion on dose calculations. Further, the conceptual model for steam bed sediments assumes an unrealistic static condition of the river channel perimeter for extended periods of time. The conceptual models exaggerate the extent to which contaminants originating in the surface soil are diluted in the farmer's well by groundwater. The conceptual model for calculation of subsurface soil DCGLs ignores any dose contribution from groundwater transport of residual contamination in subsurface soils other than a limited quantity brought to the surface as cistern cuttings. Dr. Neuman, in the IERT report, presents a mathematical proof demonstrating that not only would contaminants at the top of the Lavery till be drawn to the well intake, the concentration would actually increase towards the well. The hydrologic connections between the conceptual models employed, as per RESRAD, are physically unrealistic since they do not consider coupled surface-subsurface processes and resultant release scenarios. The presence of actively-eroding gullies would greatly facilitate the communication of water downward into the subsurface or upward and outward onto the ground surface. A major concern regarding the effectiveness of the	Either additional discussion is needed in the DP to support the basis for assumptions used or further calculations must be performed to demonstrate the potential impacts of processes identified by the IERT on the dose calculations and establishment of DCGLs. The technical basis to support the effectiveness of engineered barriers should be enhanced.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		engineered barriers is that at the interface of the barrier bottoms and the till, groundwater could seep back into the excavation of WMA 1 and 2, become contaminated and continue to contaminate the excavation surfaces and till floor. Also, design details are lacking such as the thickness of the thickness of the barrier for WMA 2, the method of maintaining the necessary slope and support on the excavation side of the barrier wall, and the consideration of possible seismic loads and severe storms on the excavated walls.	
7.	Section 3.5.5, Page 3-51, Table 3-13	This section indicates that erosion rates near the WVDP will vary over time due to various factors (e.g., stream valley widening, knick point advance, etc.). It is unclear from the data, however, whether the listed erosion rates are only applicable for the actual period used to determine the rate, or if they can (or will) be used to extrapolate future rates.	Clarify the limitations of the data provided in Table 3-13.
8.	Page 5-14, Bullets and Page 5-23 through 5-28	The bullets on Page 5-14 summarize results from the EIS erosion modeling, which NYSERDA believes to be significantly flawed and not technically defensible. The EIS erosion modeling results should not be used to limit the exposure scenarios that are used to develop DCGLs in the DP. In addition, even though these bullets recognize that the area of the lagoons could be impacted by erosion during the 1000-year evaluation period, a scenario where erosion uncovers buried contaminants is not considered in the derivation of subsurface DCGLs.	Modify the DCGL exposure scenarios to include a scenario where erosion impacts to the North Plateau bring subsurface contaminants to the surface. The uncertainties in long-term erosion modeling, as described in EIS Appendix F (e.g., Pages F-30, F-59-60), should be presented in the DP.
9.	Section 5.1.7 Page 5-16	This discussion of potential impacts to the Kent Recessional from residual contamination doesn't mention the 473 "H" piles that were driven through the Surficial sand and gravel, through the Lavery till and	Discuss the potential for the 473 steel "H" piles to serve as a transport path for contaminants to the Kent Recessional Sequence.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		into the Kent Recessional Sequence. There is potential that these steel piles could serve as a pathway for contaminants to the Kent Recessional Sequence. While Section 7.3.8 (Page 7-26) recognizes the importance of sampling around the "H" piles, Section 5.1.7 should include a discussion of the "H" piles as a potential transport path for contaminants to the Kent Recessional Sequence.	
10.		Seismically induced slope failure could cause the exposure of buried contamination. Has the issue of seismically induced slope failure been evaluated for the North Plateau?	Discuss whether seismically induced slope failure could expose buried contamination.
11.		In describing the *"Subsurface Conceptual Model,"* the DP states that the scenario whereby a house constructed with a basement extending into contaminated areas was considered implausible because the contaminated subsurface soil would be more than 10' below the surface. Although not directly stated, this scenario assumes erosion on the North Plateau would not thin the zone of clean fill and subsequently move the contamination closer to the surface.	The basis for the contaminated soil zone remaining more than 10' below the surface should be clearly stated. The uncertainties in long-term erosion modeling, as described in EIS Appendix F (e.g., Pages F-30, F-59-60), should be presented in the DP.
12.		The text identifies the manner in which buried radioactive material is addressed in the DP. Although not directly stated, this discussion assumes that there will be no erosion on the North Plateau that would thin the zone of clean fill, and subsequently move the contamination closer to the surface.	The uncertainties in long-term erosion modeling, as described in EIS Appendix F (e.g., Pages F-30, F-59-60), should be presented in the DP. The basis for the contaminated soil zone remaining buried should be clearly stated.
13.		The Streambed Sediment Conceptual Model (Page 5-29) assumes a recreationist as the average member of the critical group. By design, the DP limits the recreationist to streams within the WVDP premises (Page 5-9). While the resident farmer is limited to	Discuss the potential impacts to a recreationist that may hike along the streams both on and off the WVDP premises, and calculate DCGLs for such a situation.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		only the remediated area of the Main Plant Process Building (MPPB) or the lagoons, the same requirement does not need to be applied to the recreationist who could very well hike beyond the boundary of the WVDP premises. Expanding the area for the recreationist activities would support the evaluation of cumulative impacts as it would consider seeps associated with the North Plateau Groundwater Plume (NPGP). Such an analysis may provide DCGLS for remediation of accessible creeks throughout the Center.	
RESRAD Parameter Selection for calculating DCGLs: DOE has elected to perform a deterministic analysis using RESRAD rather than performing a probabilistic analysis. The defensibility of the dose assessment is in part dependent upon the defensibility of the RESRAD input parameters. The DP lists the parameter values used for the dose assessment and references general information about the site to support the parameter selection. Certain parameters, such as K_d values, can have a significant effect on the results of the DCGL calculations. The comments below question the adequacy of the level of justification presented in the DP to support the selection key parameters used for calculating DCGLs. The IERT report also presents concerns about the technical basis for parameter selection and the adequacy of the sensitivity analysis and lack of a probability based uncertainty analysis.			
14.	General	The IERT expressed concern that the DP provides inadequate information to support key assertions affecting the dose calculations and DCGL development. The technical basis for changes of RESRAD default parameters are poorly documented, and in some cases (especially for K_d values), generic literature values appear to have been used where site specific values were available. The point estimates for parameter values used in RESRAD may not have appropriately bounded the results of the analysis in which case an uncertainty analysis is necessary to have confidence in the results. There is no evidence that the point estimates used were derived from any such analysis and are therefore	The technical basis for parameter selection should be expanded. Once the conceptual models are reviewed and revised as appropriate, a sensitivity analysis must be repeated. Consideration should be given to including a probabilistic uncertainty analysis perhaps using the probabilistic capability of the RESRAD code.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		assumed to be the analysts' "best estimates", not bounding values. Although the analysis is supported by substantial sensitivity analysis, that analysis varies only one parameter at a time.	
15.	Page 2-35, second paragraph	In describing the source of the NPGP, the DP states that "*Less mobile radionuclides such as Cesium-137 are expected to have remained beneath the immediate source area due to the high cesium sorption capacity of the minerals in the sand and gravel.*" Sorption capacity is typically expressed in terms of a distribution coefficient or K_d value. While it may be true that the K_d value for Cesium in the Sand and Gravel Unit is high, no reference is given to support this statement. Further, Table 3-20 (Chapter 3, Pages 3-76 through 3-78) presents no data for a Cesium K_d in the Sand and Gravel Unit.	Provide a reference or other technical basis to support the premise that the Sand and Gravel Unit has a high sorption capacity for cesium.
16.	Appendix C, Section 1.0 Tabulated Data, Page C-2, second paragraph	In discussing the assignment of distribution coefficients for the three RESRAD zones, the statement is made that the contaminated zone in the stream sediment analyses and the subsurface soil analyses are assigned the K_d values for the Lavery till. One could argue that poorly consolidated stream sediments would have sorption properties that were more similar to the sand and gravel unit rather than the Lavery till. The assumption that the K_d value for stream bank sediments can be represented by the Lavery till needs further discussion in this section. Given the sensitivities of the stream bed sediment scenario to distribution coefficient (see Table C-99) the approach needs to establish that conservative values have been selected and analyzed.	Use more conservative distribution coefficient values to represent stream bed sediment partitioning or provide better justification as to why the Lavery till values are representative.
17.	Appendix C, Section 1.0 Tabulated Data, Page C-2,	The text states that "*The K_d values were selected to represent the central tendency of the site-specific data.*	Provide a justification for using nonconservative values for distribution coefficient in a deterministic analysis.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
	second paragraph	. . ." In its discussion of Deterministic Analyses, NUREG-1757, Volume 2, states that "*it is important for the licensee to demonstrate that the single reported estimate of peak dose is likely to be an overestimation of the actual peak dose.*" It is unclear how choosing K_d values based on the central tendency of data will result in "*an overestimation*" of dose.	
Radiological Status of the Site: Understanding the nature and extent of contamination is vital to planning for decommissioning. The following comments identify data gaps and suggest a path for resolution. (Comments specific to the source and radionuclide inventory of the NPGP are provided below.)			
18.	General	In the Phase 1 DP, there are multiple references to specific radionuclide ratios and inventory projections (i.e., source-term assumptions) and suppositions regarding the associated inter- and intra-transport mechanisms for the various WMA/units on the North Plateau. The basis for establishing ratios is not well defined.	Describe the basis for developing anticipated/expected radionuclide ratios, inventory projections and transport mechanisms for WMAs on the North Plateau. Site wide characterization surveys will improve the radionuclide inventories and can support the definition of radionuclide ratios and the understanding of transport mechanisms for each WMA.
19.	Pages 4-35 and 4-36, Table 4-12	Table 4-12, "*Above-Background Concentrations of Radionuclides in Subsurface Soil at WMA 1,*" identifies three sampling activities that provided the subsurface soil data for WMA 1. Due to the limited data and the variability of this data (e.g., Cs-137 is not present in one location, and is two orders of magnitude different in the other two locations, etc.), conclusions related to radionuclide distributions are speculative. Additional sampling in WMA 1 is needed to confirm the different isotopic waste profiles present in this area.	Describe how representative isotopic profiles for WMA 1 will be established. What surface and subsurface soil characterization will be performed?
20.	Page 4-36, second paragraph	The second paragraph states "*No gross alpha concentrations or concentrations of alpha-emitting radionuclides were observed at concentrations above background in surface soil from WMA 2.*" This	This statement should be revised or removed.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		statement is inaccurate as surface soil samples were obtained from Borehole Nos. 1, 2, 4, 8, 10A, 13, 14 and 33A in WMA 2; and of these locations, the only alpha analyses performed were for radium (224 and 226) (see RFI, Volume 4, Low-Level Waste Treatment Facility, Radiological Data).	
21.	Pages 4-36 and 4-37, Table 4-13	Table 4-13, *"Above-Background Concentrations of Radionuclides in Surface Soil From WMA 2"* lists only concentrations of Cs-137 and Sr-90 for a number of borehole locations in WMA 2. No data, however, are provided for alpha-emitting radionuclides in the surface soil. Additional sampling and analyses of different soil depths and locations can provide more accurate information on the radionuclide concentrations and distribution in the WMA.	Additional characterization of soils in WMA 2 (including analyses for alpha-emitting radionuclides) is needed to better understand the nature and extent of the contamination.
22.	Page 4-41, fourth paragraph	This section states that *"As seen in other areas, elevated levels of Cs-137 in surface soil were most likely attributable to airborne deposition (see Section 2)."* Due to the small number of surface soil samples taken, and the even smaller number of analyses performed on these surface soil samples, it is speculative to identify the source of Cs-137 solely as the airborne releases.	Additional characterization of the radionuclide distribution in surface soils from all WMAs is needed. Include the new background surface soil data along with the one existing background location as this will support the defensibility in determining a representative background sample.
23.	Page 4-42, Table 4-18	Table 4-18, *"Above-Background Concentrations of Radionuclides in Surface Soil, Sediment, and Subsurface Soil at WMA 5,"* lists the background location (BH-38) as being above-background for radionuclides in surface soil, sediment and subsurface soils in WMA 5. Why is the background location listed as being above-background? Also, in 2008, additional background soil samples were obtained to determine more representative values for background.	Revise Table 4-18 to include the data from the 2008 background sampling activity. If BH-38 values are above the newly calculated background values, include BH-38 in the table, but add a qualifying statement indicating that it is one of the locations used to calculate background.
24.	Page 4-43,	The paragraph states *"Ratios to Cs-137 for Pu-238,*	Provide clarification for the assertion that the Fuel

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
	third paragraph	*Pu-239/240, and Am-241 were similar for subsurface soil samples taken near the Utility Room and the Fuel Receiving and Storage Building (about 0.03 to 1, 0.04 to 1, and 0.2 to 1, respectively). However, the Sr-90 to Cs-137 ratios for each were strikingly different. Near the Utility Room, the ratio was about 1 to 1, but near the Fuel Receiving and Storage Building the ratio was 133 to 1, suggesting that the Fuel Receiving and Storage Building subsurface location was more central to the north plateau groundwater plume.*" Given the historical leaks and spills associated with the general area between the Utility Room and the FRS, the groundwater flow paths for these areas, and the partition coefficient (K_d) values for Cs-137, Pu-238, Pu-239/240 and Am-241 being significantly different than Sr-90, it is difficult to definitively state that the difference in the ratio of Cs-137 to Sr-90 is due to the Fuel Receiving and Storage Building being more centrally located to the NPGP. Specifically, Cs-137, Pu-238, Pu-239/240 and Am-241 are relatively immobile radionuclides and would not be expected to have traveled far from their source. The radionuclide ratios are approximately equal for both areas, but the reputed source of the NPGP is located closer to the Fuel Receiving and Storage Area. Why are the radionuclide ratios for the relatively immobile radionuclides similar near the Utility Room (which is located cross-gradient to the reputed source and at a greater distance from the source)? Either the source of these radionuclides is larger than anticipated (i.e., larger volume) or there are other sources that contributed these radionuclides throughout this region.	Receiving and Storage Building subsurface location is more central to the NPGP.
25.	Page 4-44,	Table 4-19, "*Above-Background Concentrations of*	Perform additional sampling/radionuclide analyses of the

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
	Table 4-19	*Radionuclides in Surface Soil, Sediment, and Subsurface Soil at WMA 6"* lists sediment and borehole locations that exceeded background concentrations. Given the limited data for this area and that the relative ratios for these radionuclides vary by location, additional sampling of WMA 6 is necessary.	areas in WMA 6 for inclusion in the scope of this DP.
26.	Page B-7, Section 1.4, first paragraph and Page B-15, Table B-7	The use of groundwater well WNW0204 as the background sample location for the Lavery Till-Sand Unit is incorrect; WNW0402 has been identified in the quarterly groundwater reports as the background location for this geologic unit. This well also appears to be downgradient of a number of areas/facilities that could influence this location. Finally, the more recent data suggests that WNW0204 is higher in activity for gross alpha and tritium, which could potentially bias the background values high. Remove WNW0204 from the data set and data source locations in Table B-7, *"Groundwater Background Radionuclide Concentrations for the WVDP."*	Use WNW0402 as the background sample location for the Lavery-Till Sand Unit data and recalculate the background data using this location. Revise Table B-7. Reevaluate the groundwater data originally identified as not having exceeded background, and verify that the revised data still does not exceed background.
27.	Section 5.1.3 Page 5-10	The DP focuses on the remediation of WMAs 1 and 2, and leaves the remediation of other soil and sediment as an option (Footnote 3, Page 5-10). Figure 4-6 (Page 4-31) shows gross alpha and gross beta contamination in surface soil in the area (WMA 10) to the west of WMA 1. Given the direction of groundwater flow (Figure 5-4), surface contamination could impact the groundwater in this area that flows into WMA 1 can contribute, over time, to the dose in WMA 1. What does the potential effect of contamination in the WMA 10 have on calculating DCGLs for WMA 1? In the mid-1990s, several "AA" trailers and trailers on	Include the northern end of WMA 10 in the sitewide characterization. If contamination is present, remediation of the area, as a Phase 1 activity, can reduce the potential of additional contamination migrating into WMA 1. Incorporate remediation of areas (i.e., that may recontaminate/impact WMA 1) as part of the Phase 1 activities. Describe available data for the area west of "Trailer City"

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		the west side of "Trailer City" were removed, and a portion of the chain-link fence was moved east. The area between the main parking lot and the fence was covered with grass. Are there existing data to verify that this area will meet the site decommissioning criteria or will a Final Status Survey of the area be performed?	(i.e., where trailers were removed and the fence relocated). Include this area in the sitewide characterization as appropriate.
Source and Radionuclide Inventory of the North Plateau Groundwater Plume: The planning for the removal of contaminated soils from WMA 1 is supported by the understanding of the events contributing to the contamination and data describing the extent of the contamination. The following comments focus on clarifying information and data that help to characterize the source area of the NPGP.			
28.	Page 2-35, third paragraph	The first sentence in this paragraph states that "*An order-of-magnitude estimate of the radionuclides and amounts released by the acid leak, and the estimated remaining amount in 2011, are presented in Table 2-16.*" In the preceding paragraph, the argument was made that the more mobile isotopes (e.g., Sr-90 and tritium) were migrating away from the source; therefore, the remaining inventory (at the source) is actually a function of two physiochemical processes: (1) decay, and (2) mobilization in the saturated zone. Table 2-16 (Pages 2-35 and 2-36) attempts to estimate inventory solely based on decay. The text and the table should clearly indicate that the estimate of current inventory (in 2011) is based on decay-corrected values from the Westcott report and does not account for any inventory that has already migrated downgradient or off site.	Clarify that Table 2-16, an estimate of the remaining inventory, only presents the decay-corrected values from the Westcott (1998) report.
29.	Page 2-35, Table 2-16	Table 2-16, "*Released Radionuclide Activity Estimates for the North Plateau Plume*," cites a reference by Westcott 1998. The D. R. Westcott work utilizes characterization data that was available for Tank 8D-2 to estimate the radioactivity present in the NPGP. The	As characterization data from the source area of the plume are obtained, the radionuclide inventory and radionuclide ratios should be updated. The revised inventory and ratios need to be used in the modeling and projections of the nonsource area of the plume.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		plume is a result of one or more leaks in the acid recovery system, which may not be accurately represented by Tank 8D-2 data. Data obtained in the leaking source areas of the acid recovery system are likely more indicative of the radionuclide inventory and radionuclide ratios for the NPGP.	
30.	Page 2-36, second paragraph	The statement that "*In addition to the known acid spill affecting the north plateau, during NFS operations several incidents such as inadvertent transfers of higher-than-intended activity occurred in the interceptor basin system upstream of the lagoon system (Lewis 1967, Taylor 1967, Wischow 1967). Documented accounts of leakage and spills in the area (Lewis 1967, Carpenter and Hemann 1995) corroborate the generally elevated observed subsurface soil contamination in the area west of Lagoon 1 to the vicinity of the Process Building. Such localized subsurface contamination can be attributed to these unintended operational releases,*" needs clarification. Are the documented releases/spills that contaminated the subsurface soil from the Process Building to the interceptor system and Lagoon 1 considered contributors to the total radionuclide inventory of the NPGP?	Provide justification to support the assertion that these "unintended operational releases" are so localized that they have not contributed to the plume.
31.	Page 2-39, Table 2-17	In Table 2-17, "*Principal Radionuclides in Major Spills Occurring During NFS Operations,*" the last column in the last row states that: "*Leakage did not result in any known release to the environment.*" While it is unknown whether this release affected the environment, arguably, it is also unknown that it did not. Specifically, the transport mechanism (i.e., an expansion joint) discussed for the primary leak also exists in this location. This leak occurred on the first	Revise this section to be consistent with the information provided in Chapter 3, Section 3.11.5.1 of the DEIS.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		floor, not the fourth floor of the building (as with the primary leak), and the volume recovered by the interceptor (in addition to what remained in Tank 7C-5) accounts for approximately one third of the total volume released by this event. Finally, historical accounts attribute the poor condition of the floors and common wall between the Acid Recovery Pump Room and the Off-Gas Blower Room to numerous acid leaks/spills. These accounts detail the addition of six inches of concrete to level the floor in the southwest corner of the Off-Gas Blower Room after it was destroyed by acid. In addition to leveling this floor, the concrete provided shielding from the high dose emanating from this corner (Riethmiller, 1981).	
32.	Section 3.7.7 Page 3-72	*Numerical Analysis Techniques* includes a brief reference to modeling of the NPGP using both 1994 plume concentration data and source activity of 500 Ci of Sr-90. The text goes on to describe how model calibration was performed. Based on Section 2.3.1, Page 2-35, the source of the plume in 1972 included approximately 200 curies. The text in Section 3.7.7 lacks a discussion of how a variation in the source concentration affects the calibration of the groundwater model.	Discuss the groundwater model calibration and describe the sensitivity of the model to changes in source concentration. How does the sensitivity of the groundwater model affect the calculation of DCGLs?
33.	Page 4-13, third paragraph, *Spent Fuel Distribution*	The text states "*These data were used for all radionuclides of interest in spent fuel except U-235 and U-238, which were derived from NFS records for recovered and unaccounted for losses of uranium, and U-232, U-233, U-234, and U-236, which were established based on analytical results showing the U-232 to U-235/236 ratios from samples collected in the Acid Recovery Pump Room of the Process Building.*" What is the technical basis for using the ratios from	Provide the technical rationale for using acid recovery/recycling lines and data from the Acid Recovery Pump Room to calculate the spent fuel profile ratios. Also, provide the technical rationale for why the Acid Recovery Pump Room data are conservative.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		the acid recovery/recycling portion of the reprocessing activities, instead of using ratios from areas where product extractions occurred (e.g., Extraction Cells 1, 2, and 3, and the Product Purification Cell)? The analytical data obtained from sampling the Acid Recovery Pump Room would likely represent contaminants in spent acid that leaked or spilled from process lines, rather than higher concentrations of product materials prevalent in other areas of the Main Plant. Also, what is the basis for stating that these ratios are conservative?	
Site Features: A description of site features is required in the DP. The following comments focus on data gaps in the information describing site features.			
34.	Section 3.6.3, Page 3-65	In discussing the probable maximum flood, the cited reference is a report that was generated in 1983. Why doesn't this plan use the most recent probable maximum flood model developed in 2008 and cited in the current DEIS? The reference is URS, 2008, "Memorandum to Science Applications International Corporation, Subject: Probable Maximum Flood Inundation Study," West Valley, New York, August 28.	Use the most current information to describe the influence of flooding at the site.
35.	Section 5.1.6, Page 5-15, Figure 5-5	The first paragraph of this section and Figure 5-5 reference the 1994 Dames and Moore *North Plateau Groundwater Seepage Survey*. A text box in the Figure states that *"the 3 seepage points near the lagoons . . . exhibited little or no flow in 1994."* The information shown on this figure is now 15 years old. What is the significance of the flow characteristics in 1994? Have the locations of seeps been checked in the field to confirm that the information on this map is still accurate?	Provide a framework for the significance of the 1994 work by Dames and Moore, and comment on flow observed today from seepages along Erdman Brook and Frank's Creek. Incorporate more recent flow data for the seepage points, if available. Update the map as necessary.

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
Site Characterization: Adequate site characterization is needed in the planning for remediation and defensible final status surveys verifying that any residual contamination meets the requirements of the West Valley policy statement and10CFR20 Subpart E. The following comments identify limitations in characterization data.			
36.	Page 9-6, Section 9.2.4, second paragraph	Characterization Surveys are identified in Section 9.2.4. The second paragraph states, "*Four WVDP characterization survey programs have been completed: (1) the characterization program for the underground waste tanks, (2) the Facility Characterization Project, (3) a series of Resource Conservation and Recovery Act (RCRA) facility investigations performed in the 1990s, and (4) investigations of the north plateau groundwater plume using a Geoprobe®.*" The survey activities completed thus far do not appear to have the necessary components as specified under NUREG-1575, the *Multi-Agency Radiation Survey and Site Investigation Manual* (MARSSIM) to be identified as "Characterization Surveys." Specifically, these activities did not include survey designs that ensured that: representative background/environmental media specific measurements were obtained, acceptable Type I and Type II errors were identified, and contaminant variation in each survey unit was adequately addressed (using statistical testing of the survey unit). Similarly, language on Page 8-8 references the underground waste tank farm data as being similar in quality to MARSSIMs. Clarification of what "similar" means should be provided.	The four cited survey activities should be considered scoping surveys and the data from these survey activities can be used to design the Characterization Surveys as defined in MARSSIMs.
37.	Page 9-15, Section 9.5.	This section defines the use of "In-Process Surveys" and states that these surveys would be performed to ". . . *determine when remediation to field goals . . . has*	Provide the detailed Quality Assurance requirements for conducting "In-Process Surveys."

#	*Section, (Table, Figure) Page # (Paragraph, Line)*	*Comment*	*Proposed Resolution*
		been attained." What are the QA requirements for conducting this type of survey? Specifically, since this type of survey is not defined in MARSSIMs, are the QA requirements consistent with Characterization Surveys and/or Final Status Surveys, and how will the results be utilized for final status of the survey unit?	
38.	Page 9-31, last paragraph and Page 9-32	Characterization of the soils remaining in WMAs 5 and 6 (after the excavation of the foundations, slabs, hardstands and gravel pads were removed, prior to the start of decommissioning) need to be conducted. Historical records identify these areas as potentially impacted by radiological constituents. Little data exists to help determine the extent of the contamination and whether the radionuclide distribution is the same or different than other areas of the site.	The soil areas remaining from excavation of the foundations, slabs, hardstands, and gravel pads in WMAs 5 and 6 need to be characterized.
39.	Page 9-32, Section 9.7.5	Section 9.7.5 details the characterization activities defined for WMA 6: the Central Project Premises, which encompasses the Sewage Treatment Plant, the Equalization Basin, the Equalization Tank, the two demineralizer sludge ponds, the south Waste Farm Test Tower, floor slabs and foundations and the underground structure of the Cooling Tower (which has been identified as being impacted by radioactivity). The DP does not, however, identify the characterization process for the subsurface piping associated with this waste management area.	Describe the process for characterizing the subsurface piping the WMA 6.