January 16, 2014

Ms. Joanne E. Hameister
Coalition on West Valley Nuclear Wastes
1051 Sweet Road
East Aurora, NY 14052

Dear Ms. Hameister:

SUBJECT: West Valley Nuclear Facility, Public Participation, Uncertainties, Subject Matter Expert on Scopes of Work, PASs, etc.

Thank you for your continued interest in the West Valley site and the Phase 1 Studies Process. We are writing in response to your September 26, 2013 letter (Reference 1) whereby you expressed concern with the nature of public participation, particularly as it relates to public input on Subject-Matter Experts (SME) work scopes and communication with the SME and Independent Scientific Panel (ISP). You also expressed concern about the nature of contamination at the West Valley site, particularly as it relates to characterization efforts and potential future scenarios of the various waste areas to be evaluated by SME. Finally, your letter detailed concerns about uncertainties that you feel are important to the Phase 1 Studies and Phase 2 Decisions.

Your September 26, 2013 letter states:

> *"Apparently the implied purpose of the Phase One studies is to resolve EIS disagreements between DOE and NYSERDA. The resulting abject dismissal of our comments and expressed issues related to the Phase One process, and therefore our perceived and presumed effect the Coalition could have on the decision process at West Valley nuclear facility have been minimized."*

The Phase 1 Studies are being conducted to facilitate consensus between DOE and NYSERDA on technical components of the Final Environmental Impact Statement (FEIS) on which the agencies have disagreed. NYSERDA and DOE have stated this since the beginning of the process. In conducting this work, the agencies have been holding regular meetings with the public to discuss the Phase 1 Studies Process, Potential Areas of Study (PAS); and individual studies, their implementation, and results. The agencies are considering all input received from the public on the Phase 1 Studies, and the agencies have made changes to the process based on the input we've received. All input received is considered seriously by the agencies. We would also like to stress that the Phase 1 Studies are *information gathering activities*, and do not constitute the Phase 2 *decisionmaking process*. The Phase 2 decisions will be made by DOE and NYSERDA in accordance with the National Environmental Policy Act of 1969 (NEPA) and State Environmental Quality Review Act (SEQRA), and there will be public participation opportunities as part of the Phase 2 decision process as afforded by NEPA and SEQRA and as detailed in the 2010

Decommissioning FEIS Record of Decision and Statement of Findings. We want to assure you that when DOE and NYSERDA make the Phase 2 Decisions, they will be made with full consideration of public input.

We have copied the issues and concerns from your September 26, 2013 letter below, and have inserted specific responses. DOE and NYSERDA value your continued interest in the Phase 1 Studies process.

Issues and Concerns

Based upon our initial impression of the above PAS list and, specifically as it regards the highlighted items, we recommend the following:

- Separate Scopes of Work (SOW) for each of the target areas: HLW Tanks, State-licensed Burial Ground and NRC-licensed Burial Ground

> A generic Scope of Work (SOW) for all PAS was developed in order to ensure that the direction provided to the SME would be neutral and not promote or favor either agency's position on the technical issues. This SOW generally directs the SME to evaluate areas of disagreement between DOE and NYSERDA on components of the FEIS and, as appropriate, recommend additional scientific studies that may serve to facilitate interagency consensus on these components. With respect to the evaluation of the HLW tanks, SDA and NDA, these will be evaluated by the SME groups as separate facilities, as each facility is unique in its location, inventory and configuration.

- Full and fair characterization of each of the target areas be provided to the SME that will be guided by the SOW

> The agencies agree that all available characterization information should be provided and we have made existing characterization data available to the SME who have been tasked to date. Additionally, we have requested and will continue to expect that the SME consider uncertainties associated with the characterization information and recommend additional characterization if they think it is warranted.

- The independent Synapse report, The Real Costs of Cleaning Up Nuclear Waste: *A Full Cost Accounting of Cleanup Options for the West Valley Nuclear Waste Site*, November 2008 be included as a reference document to all SMEs. In the interest of being fair and balanced, NYSERDA's critique of said document and any study contributor rebuttals also should be included as a reference document

> DOE and NYSERDA previously provided the Synapse report to all SME; and in response to your recommendation, we will also provide NYSERDA's comments on the Synapse report to all SME as well as any contributor rebuttals.

- Wording that is not biased toward an *a priori* decision to leave the HLW Tanks and both burial grounds *in situ* as predicated in the Proposed Inference Generalities (PIG)[2] for the PASs and (we anticipate) SOWs.

DOE and NYSERDA have no *a priori* decision toward which to bias the Phase 1 Studies, nor do we believe that we are using biased language in describing the studies.

- Access to medical health professionals to evaluate the risks to workers and to the public for all studies planned to be performed on the HLW tanks and the burial grounds.

An evaluation of occupational doses to workers and doses to the public would be considered as part of considering any exhumation or in-place closure activity. The dose limits used in evaluating these activities are the limits set by the appropriate federal or state regulatory agencies in consideration of the risk associated with exposure to radioactivity. Those dose-based limits are based on extensive scientific work on human health effects from exposure to radiation that have been conducted by numerous organizations and scientists over many years. As such, we do not believe it is necessary to include medical health experts on the Exhumation SME. The Exhumation Working Group does, however, include at least one member with expertise on systems and processes to minimize personnel exposure to radiological and hazardous materials during remedial activities.

- SMEs and ISP be provided with Emergency Preparedness/Response Plans of DOE and NYSERDA

DOE and NYSERDA presently ensure anyone performing work at the site or visiting the site (including SME and ISP) receives the proper safety and emergency response training and briefing. The operational plans and procedures for responding to site emergencies are not part of any outstanding FEIS technical issue, and are not being evaluated as part of the Phase 1 Studies.

Specific Comments

1996-ASER **EXECUTIVE SUMMARY** xxix

The West Valley Demonstration Project was established to demonstrate that technologies could be developed to safely clean up and solidify radioactive waste.

HLW Tanks

Conditions cited in references

The scope of study for High-Level tank lay-up options[3] did not include dismantle and removal of the tanks, in spite of the fact that one report[4] did illustrate that the part of the sludge could be re-suspended and 'homogenized' for sampling accuracy and for inclusion in the vitrification process. Our understanding is that a significant portion of the original radioactive sludge layer remains in tanks that now have lived beyond their design life and are corroding from both the inside and outside surfaces.

For various reasons to be discussed later, groundwater has infiltrated the concrete vault and leak detection pan surrounding Tanks 8D- 1 and 8D-2, subjecting the tanks and pans to a mildly corrosive environment for approximately 31 years. [5]

The 2010 FEIS considered complete tank and vault removal, and the agencies have tasked the EXWG to evaluate alternate approaches to, costs of, and risks associated with waste and tank removal. The WVDP installed a Tank and Vault Drying System (T&VDS) at the Waste Tank Farm (WTF) in 2010. To date, Tanks 8D-1 and 8D-2 are dry and liquid levels in their associated vaults are below the level indicators. Tank 8D-3 and the 8D-3/8D-4 vault is dry. Tank 8D-4 has less than 4,700 gallons. The T&VDS has significantly reduced humidity and associated corrosion in the tanks.

Dr. Bryan Bower has suggested (in private conversation) that nitrocisn might be used to scour the inside of the tanks. This would be a surface treatment only and would not be effective on material or elements that have become radioactive by exposure. Radioactive by exposure must be considered item in any Scope of Work.

The agencies agree that the entire source term, whether fixed or removable, should be considered.

NDA

Status per Source Term Report[6]

The NDA Source Term Report Tables S1, S2 and resulting summary of Activity per volume indicated that the concentration in the NDA is .83 Curies per cubic foot.[7] We believe that this concentration level of almost one full Curie is too dangerous to be confined in simple, plain, dug, unlined, unengineered trenches and holes for any length of time.

The presence of 42 ruptured fuel assemblies[8] in the NDA must be considered an urgency. The burial of such High-level waste never has been considered appropriate, let alone encouraged.

The 2010 FEIS considered, and the Phase 1 studies will consider, the source term and disposal configuration of the waste.

While the risks of exhumation of this level of contamination present significant challenges, DOE already has exhumed from the NDA plutonium-laden kerosene containers that were leaking[9], and, therefore, essentially has done a pilot-based task of the process involved within the configuration of storage in the NDA.

Six plutonium-laden-kerosene tanks were exhumed from Hole #10 in winter of 1986. Two similar tanks were exhumed from Hole #11 in summer 1986.

The recovered solvent, about 429 gallons, from all sources was solidified in cement. The original burial was about 4,000 gallons -- or the unaccounted volume is about 3,600 gallons.[10]

The EXWG will consider past and current exhumation experience at the WVDP and at other facilities around the world as part of their evaluation of potential exhumation options.

SDA

Status per Source Term Report

The radionuclide inventory in the SDA numbers 61, including transuranic elements of Americium (~150 Ci), Curium (~80 Ci), Neptunium, Plutonium (~43,860 Ci).

Each of the 61 elements exists at some level in each trench and special hole.

Notable other inventory totals as of 2000 Wild Report:

	Curies		Curies
Co-58	94,689	Fe-55	347,973
Co-60	510,625	Mn-54	40,474
Cr-51	10,672	Ni-64	73,304
Cs-134	20,621	Sr-90	58,789
Cs-137	57,938		

It is not clear how the SDA waste activity cited above was determined. Based upon our review of the "SDA Radiological Characterization Report," prepared by Dr. Ralph E. Wild, dated September 20, 2002, the total waste activity in the SDA was ~129,615 Ci.

The Coalition on West Valley Nuclear Wastes long has maintained that the facility was sited and operated before NEPA was enacted and 10CFR61 (low-level waste disposal) regulations were promulgated. We are pleased to see our allegations are supported in the Source Term Report.

The agencies agree (and never disputed) that the Western New York Nuclear Service Center was sited and operated before NEPA was enacted and 10CFR61 regulations were promulgated.

The facility was operated and these wastes were disposed of prior to the promulgation of 10 CFR 61. The concern was that the presence of long half lived alpha emitting transuranic isotopes in the waste might limit the ability to close the facility in place. …The isotopic inventory of these disposals, decay corrected to the year 2,000 were used to estimate the gamma radiation field that would exist if an excavation were made to expose the wastes of concern. The results of this analysis indicated that the gamma field from the other disposals would preclude making an excavation using conventional methods. Furthermore, an evaluation of disposal packaging indicated that much of the packing materials would be degraded to a point where the potential for airborne releases would be quite high..[12]

This same document summarized the situations as follows:

Based on the high cost of the removal operation and a comparative pathway analysis (by others) of the long term performance of the facility closed in place with and without the wastes of concern indicated that it was not cost effective to remove these wastes.[13]

The full-cost accounting study,[14] performed by an independent firm, concluded that the cost of exhumation would be cheaper than long-term management and maintenance. Consideration of the fact that these burial trenches contain significant volumes and concentrations of real risk-bearing radionuclides, exhumation must be thoroughly evaluated as the only option to protect downstream environmental resources, including drinking water sources, for current and future generations. This must be regarded as social justice issue, in addition to a proper and prescribed environmental solution.

The Exhumation Working Group has been directed to provide information that will be useful in thoroughly evaluating exhumation options, costs, and risks, including full, partial and pilot exhumation. The recommended studies (Exhumation Working Group Recommendations for Phase 1 Exhumation Studies, November 2013) also seek to characterize and reduce uncertainty with respect to the exhumation evaluation.

What We Need

Beginning with the isolated, closed-door approach used with the Core Team deliberations, stakeholders have been disenfranchised. This approach, obviously, has been extended to the key studies and deliberations under Phase One and will have significant impact on the process for Phase Two. We object to this lack of consideration to our time, dedication and effort to guarantee good decision-making for the West Valley nuclear facility.

- Given the fact that SMEs and ISP are bound to a gag order by contract[15], stakeholders are limited severely with exchanging ideas, information and/or suggestions.
  - ✓ One of the responsibilities of the SME is to "consider stakeholder input and provide updates and responses to stakeholder comments and questions" and of the ISP is to "provide opinions, updates and responses to stakeholder questions and comments"[16].
  - ✓ We have to conclude, based on our experience thus far, that the responses are to the agencies only and not to the stakeholders.
  - ✓ Therefore, we would like to have the opportunity for input to the SOWs, PASs and recommendations and assurances that the stakeholder comments are considered.

The Phase 1 Studies are being conducted to facilitate consensus between DOE and NYSERDA on technical components of the FEIS on which the agencies have disagreed. NYSERDA and DOE have stated this since the beginning of the process. In conducting this work, the agencies have been holding regular meetings with the public to discuss the Phase 1 Studies Process, Potential Areas of Study (PAS), and individual studies, their implementation, and results. The SME have been, and will continue to be, made available to the public to discuss their work and recommendations. The agencies are considering all input received from the public on the Phase 1 Studies, and the agencies have made changes to the process based on the input we've received. We would also like to stress that the Phase 1 Studies are *information gathering activities*, and do not constitute the Phase 2 *decisionmaking process*. The Phase 2 decisions will be made by DOE and NYSERDA in accordance with NEPA and SEQRA, and as detailed in the 2010 Decommissioning FEIS Record of Decision and Statement of Findings. There also have been and will continue to be additional public participation opportunities as part of the Phase 1 Studies process. We want to assure you that when DOE and NYSERDA make the Phase 2 Decisions, they will be made with full consideration of public input.

- We have offered comments on the inadequacies of the SOWs, Climate Change, suggested PASs and received no acknowledgement or evidence of such comments being conveyed to SMEs and/or ISP or considered or even reasons for dismissal.

As stated above, the SOWs were intended to be general in order to ensure that the direction provided to the SME would be neutral and not promote or favor either agency's position on the technical issues. In the SOWs, the SME are directed to the 2010 FEIS, to NYSERDA's View, and to the DOE responses to NYSERDA's View to get a full understanding of the issues that need to be evaluated. DOE and NYSERDA have instructed ECS to ensure the SME and ISP members are provided with all input specific to their tasks for consideration in their work. In addition, we have utilized the Phase 1 Studies website to post all public input and corresponding agency responses.

- We would like to see that the Exhumation SOWs be detailed according to waste unit, i.e., SDA, NDA, Tanks and Groundwater Plume.

A generic Scope of Work (SOW) for all PAS was developed for consistency and to ensure that the direction provided to the SMEs would be neutral and not promote or favor either agency's position on the technical issues. Although the Exhumation Working Group SOW does not detail the specific waste units separately, the Exhumation SME group will thoroughly evaluate each of these areas separately.

- Issues related to Uncertainties (Appendix) must be considered major factors in any discussion/determination of recommendations by the SMEs, ISP and agencies and we need that assurance that uncertainties will be a persistent and significant charge to each SME and ISP.

DOE and NYSERDA agree that such issues of uncertainty are important considerations for the Phase 1 Studies. DOE and NYSERDA have received much input on the importance of uncertainty evaluation in the context of the Phase 1 Studies. Over the past few months, DOE and NYSERDA have tasked EWG and EXWG to explicitly address uncertainty issues. The EWG's current report (*Uncertainty Considerations and Prioritization of Recommended Phase 1 Erosion Studies*) provides detailed information on uncertainty estimation and consideration in erosion prediction technology, including uncertainty introduced by future climate change. The report also reflects on the group's recommended studies and identifies work they believe can proceed: (1) to reduce uncertainty most effectively and (2) regardless of what erosion prediction application and/or analytical framework may be applied at the site in the future.

The EXWG's current report (*Recommendations for Phase 1 Exhumation Studies*) explicitly addresses uncertainty in the proposed studies and addresses how this uncertainty may be characterized, quantified, and/or be potentially reduced.

Sincerely,

Moira N. Maloney, Team Leader
Regulatory Strategy & Environmental Compliance
U.S. Department of Energy

Lee M. Gordon, Ph.D.
Project Manager/Geologist
NYSERDA

LMG/MNM/amd

References:

1. Letter, Joanne Hameister to Moira Maloney and Lee Gordon, *Re: West Valley Nuclear Facility, Public Participation, Uncertainties, Subject Matter Expert on Scopes of Work, PASs, etc.*, dated September 26, 2013.

cc: P. J. Bembia, NYSERDA-WVDP
B. C. Bower, USDOE-WVDP
M. P. Krentz, USDOE-WVDP
E. A. Lowes, NYSERDA-WVDP
A. L. Mellon, NYSERDA-WVDP
Z. Z. Zadins, USDOE-WVDP
File #61806