

## **Citizens' Environmental Coalition**

### **Nuclear Information and Resource Service**

June 5, 2009

Rebecca Tadesse, Chief  
Materials Decommissioning Branch  
Division of Waste Management and Environmental Protection  
Office of Federal and State Materials and Environmental Management Programs  
Nuclear Regulatory Commission  
Washington, DC 20555-0001

Re: Proposed Decommissioning Plan & EIS for the West Valley Nuclear Site

Dear Ms. Tadesse,

We appreciate the NRC's technical review of the Decommissioning Plan and the comments provided. We believe that the public process and major portions of the documents before you are fatally flawed and require major corrections, which we discuss below. First we want to bring to your attention the fact that the DOE submitted a Decommissioning Plan containing one cleanup alternative for Decommissioning simultaneously with the release of the Draft EIS to the public which contained four possible cleanup alternatives. NRC's decisions cannot therefore be informed by the public hearings, testimony and written comments that are provided to the DOE. It would appear that DOE is intent on proceeding with its preferred alternative, no matter what the public has to say about it. However, since the NRC has not made its decision, we urge you to take the public comments into account when making your decision. This initial public process has been followed by a clear lack of public disclosure for important elements of the plan and the public is being left out of any future decision-making process under a lengthy Phased Decision-making option.

The Decommissioning Plan goes through a tortuous analysis of various legal and regulatory structures related to West Valley, in which DOE implies that the uniqueness of the West Valley situation leaves it in a regulatory limbo, where few legal and regulatory requirements are currently applicable. DOE describes an unusual role for itself with far less responsibility than the West Valley Demonstration Project Act would seem to indicate. We hope the NRC will see through this charade and hold DOE more accountable. NYSERDA while a co-lead agency for the EIS is obviously not an equal partner; this is illustrated by NYSERDA's very strong statements in the Foreword to the EIS concerning the adequacy of the long term analyses.

Below we review the major problems we have found thus far. These major problems indicate that the Decommissioning Plan and the EIS are fatally flawed and cannot be used for Decommissioning or Long Term Stewardship. One cleanup alternative stands out in the EIS as having been adequately analyzed and presented to the public: the Sitewide Removal Alternative, which we support.

While the Decommissioning Plan and EIS are fatally flawed for the other alternatives, this does not mean that cleanup activities at the site need to be halted. All cleanup and remedial measures are legitimate means to contain spreading radioactivity and the agencies involved have sufficient authority to engage in such activity to protect the public. We naturally expect adequate monitoring and oversight of these activities.

Thank you for your consideration. We would appreciate being kept informed of future meetings and deliberations on this important matter.

Sincerely,



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Executive Director  
Citizens' Environmental Coalition

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Radioactive Waste Project Director  
Nuclear Information & Resource Service

**Comments on the West Valley Decommissioning Plan and  
Draft Environmental Impact Statement**

**I The Environmental Impact Statement and the Public Process are fatally flawed and cannot support moving forward with any option other than Sitewide Removal for the following reasons:**

- A. An Environmental Impact Statement should contain these major and essential elements:
- **A Complete Plan or Project**  
An EIS should start with a complete plan or project and then fully describe all elements of the project.
  - **Identification of all Potential Environmental Impacts and then full Analysis of those impacts.**
  - **Full Public Disclosure involving a legitimate public process with information made available and an adequate opportunity for the public to have some influence on the decisions that are made.**
  - **A reasonable rationale for any decision, such as the choice of the Preferred Alternative**
- B. The only cleanup option that has been fully analyzed and disclosed to the public is the Sitewide Removal Alternative-- full excavation and cleanup of the radioactive material. As a result this is the only cleanup option that is legally eligible under NEPA, National Environmental Policy Act, for consideration by the agencies for adoption.
- C. For all of the other options, there is no detailed description of the monitoring of containment for leaks or failures, no assessment of the impacts associated with a containment failure, no plan for rapid response to containment failure and as a result there is little public information about an essential element of any cleanup option that allows buried waste to be maintained on site. Similarly there is no detail regarding the engineering and institutional controls needed to maintain buried waste on site. Items B & C here appear to be the result of the agency viewing only concrete actions, such as excavation, as something to be covered in the EIS. Neglecting or taking no action to cleanup major facilities at the site gets little attention in the EIS.
- D. In the case of the Phased Decision-making Alternative, the preferred alternative, the situation is even worse, because there is no complete plan or project described in the DEIS.
- **Phased Decision-making is not a complete plan or project. Agency personnel engaged in thinking over a long time period can not be considered a project.**
  - **The action portion of Phase 1 only addresses 1.2% of on-site radioactivity. There is no explanation regarding why Phase 1 is limited to such a small amount of cleanup.**

- Decisions regarding 99% of dangerous radioactive material needing cleanup are delayed for 30 years. The complete plan or project for cleanup is unknown.
- 30 years of Data Collection-- absolutely necessary additional studies, according to the agencies involved-- but only cursory information provided to the public in the DEIS. The public has received no justification as to why these studies are needed in lieu of an approach that plans to fully cleanup the site and completes needed studies while other cleanup tasks are in progress. If these studies are necessary for determining a safe and adequate work plan in Phase 2, we should have received more detail so that we could comment.
- At the end of Phase I, future final decisions on the remaining 99% of the cleanup will be made by the Agencies involved with no public input.
- No monitoring and maintenance of on-site facilities during the 30 year period is described—a fatal flaw- when the high level waste tanks are at the end of their 40 year life span and there is no plan for replacement as initially envisioned.
- An immediate cleanup of just 1% of the radioactive materials on site, with no rationale provided in the DEIS for why 10%, 20% or more of the radioactive waste was not slated for cleanup in Phase I.
- A reasonable person would naturally approach the two issues of limited clean-up and 30 year delay with a lot of questions regarding the wisdom of such an approach as it relates to safety, health and environmental contamination. A reasonable person would be disappointed that the major documents provided, the Decommissioning Plan and the Environmental Impact Statement, fail to adequately discuss appropriate care and maintenance for the major radioactive facilities that are being put off to Phase II.
- There is no definitive statement that Phase II is the final phase. If only 1% of radioactivity is dealt with in each phase we might have 100 phases before completion of the work at the site.

**II The Draft Environmental Impact Statement is identified as for Decommissioning and Long Term Stewardship at the West Valley Site, yet fails to adequately analyze and discuss decommissioning or long term stewardship. The Decommissioning Plan also suggests that DOE will no longer be involved at the site after Phase I activities are completed.**

- A. An immediate cleanup of just 1.2% of the radioactive materials on site could have been accomplished as a necessary remedial measure without wrapping it into a package identified as Decommissioning and Long Term Stewardship.
- B. Decommissioning and Decontamination of the site and the majority of the dangerous radioactive material, including those activities covered under the West Valley Demonstration Project Act, were not presented in any detail. In fact the Decommissioning Plan went to great lengths to emphasize that future Decommissioning would be the responsibility of New York State as the owner

of the site. The objectives identified therefore are much narrower than decontamination and decommissioning. As stated by DOE their primary objective is not prejudicing final decisions in Phase II.

- C. Long Term Stewardship and a complete description of what the Agencies consider to be necessary engineering and institutional controls were similarly not presented in the Decommissioning Plan and DEIS. The only possible explanation, we can find, for identifying the DEIS as covering Decommissioning and Long Term Stewardship is to attempt to avoid requirements under NEPA, the National Environmental Policy Act, for public involvement in critically important decisions about leaving radioactive material on site and the necessary engineering and institutional controls.

**III Health Impact analyses are distorted by non-conservative assumptions. The examination of alternatives is not enlightening because DOE set up comparisons that were non-comparable.**

- A. It is not conservative for DOE to assume minimal air and water releases subsequent to decommissioning under any of the alternatives, p. 4-51 EIS.
- B. It is not conservative to assume that the cessation of maintenance and other activities under the Close-in-place alternative will have little effect on the rate of release of contamination, P. 4-73.
- C. Table 4-12 of the EIS calculates the population dose for 64 years for Sitewide removal, 7 years for Close-In-Place and 8 years for No Action alternatives. Thus even before beginning the analysis you would know a priori that the highest person-rem would occur under the Sitewide removal alternative, but the answer would be incorrect.
- D. We also question the absence of any analysis of dairying, since it is a principle farm usage and there is potential for radionuclides to enter the human food chain in milk.

**IV The DOE has chosen one option, Phased Decision-making as its preferred alternative. This alternative is the most INCOMPLETE of all the alternatives and yet it is the focus of the entire Decommissioning Plan. Indeterminate future decision-making cannot be considered an Action Plan for NEPA purposes.**

Future indeterminate decision-making does not constitute a comprehensive Action Plan. NEPA is geared to Agency actions not long term decision-making and possible decisions. Specific agency actions, plans or projects must be analyzed for their potential environmental impacts. This is very difficult to accomplish in the absence of specific plans or projects. In this case the public has been denied basic information about the long term action plan, and essential information about environmental monitoring and studies that will inform Phase II. Indeterminate future decision-making with no public involvement and inadequate disclosure of the potential for environmental and health impacts cannot possibly meet the requirements of NEPA.

- A. Phase I activities at the site will handle just 1.2% of the radioactive contamination on site. These activities could constitute Actions under NEPA.

- B. Little Information on Phase I studies. Phase I studies and data collection are critical to the decisions about the scope of Phase II. As such these studies could be considered an Agency action. However, the Draft EIS describes such studies very briefly and in vague terms. As a result the public has not been informed regarding the essential foundation for future decision-making.
- C. No detailed information regarding Environmental monitoring. There will be an up to 30 year delay in decision-making about handling almost 99% of the buried highly radioactive waste. Three major facilities will be untouched by Phase I—the NDA, the SDA and the High Level waste tanks. Leaving radioactive waste in the ground untouched by cleanup plans requires an examination of the potential for environmental impacts during this period. However, detailed information about the environmental monitoring that will be conducted to monitor for leaks, groundwater contamination and other untoward events was not presented in the Draft EIS. For two alternatives- No Action and Phased Decision-making—we are told only that existing monitoring and institutional controls will continue. We doubt that any elected public official or any member of the public could identify what this means. For the Close-in-Place Alternative there is a slightly expanded statement; we are told a series of monitoring devices would be installed for various environmental and geotechnical parameters and performance assessment reviews would take place. How many monitoring devices? Installed where? Which environmental and geotechnical parameters? What kind of performance assessment? Obviously a half page on this topic is not sufficient. We are not reassured regarding the adequacy of planned monitoring and institutional controls for 3 alternatives.
- D. There is no future defined public process where information will be presented for public consideration. There will be no opportunity for public comments. Presumably the DOE will make its future decisions in secret without further public input. This opens up the possibility that even new information about spreading contamination could be ignored by the Agency.

**V The Documents, DEIS and Decommissioning Plan, are inadequately grounded in the on-the-ground realities at the site and other factual scientific information. Here we discuss information from the Independent Full Cost Accounting Study, NYSERDA comments in the Foreword to the EIS, the CHEJ report regarding Climate impacts, and earthquake potential.**

- A. In December an independent, state-funded study, *The Real Costs of Cleaning Up Nuclear Waste: A Full Cost Accounting of Cleanup Options for the West Valley Nuclear Waste Site*, was released. That study started from an obvious place: the existing conditions at the site. It found that:
- Erosion is a powerful and fast moving force at the West Valley site as it sits on a geologically young landscape which is undergoing a relatively rapid rate of erosion. Michael P. Wilson, Ph.D., SUNY Fredonia Professor of Geosciences found in the FCA study that "Nuclear wastes, radioactive for tens of thousands of years, will be

consumed by erosion and discharged downstream to Lakes Erie and Ontario in less than 3,000 years and may be dangerously exposed in less than 200 or 300 years."

- Scientists found the site poses a significant danger to people through their drinking water. If just 1% of radioactivity leaked from the site, Lake Erie water users would be exposed to substantial radiation, causing hundreds of cancer deaths, and Buffalo and Erie County water replacement would cost hundreds of millions of dollars.
- The study looked closely at the necessary engineering and institutional controls that would be needed in order to contain the radioactive material on-site given the powerful forces of erosion. Then the study compared these costs to the cost of a full waste excavation cleanup. The study revealed leaving buried waste at the site is both high risk and expensive while a full waste excavation cleanup presents the least risk to a large population and the lowest cost. Over 1000 years, waste excavation costs \$9.9 billion while trying to contain buried waste onsite would cost \$13 billion, and \$27 billion if a catastrophic release occurred.

B. In the Foreword to the DEIS, NYSERDA raises the problems that an independent scientific panel had with the analyses done by DOE, particularly the long term analyses. We summarize most of the points here.

- The Draft EIS analysis of Soil Erosion over the Long Term is not Scientifically Defensible and should not be used for Long-Term Decisionmaking. Predictions of population doses to the public will not be accurate, if using the current erosion models, to support decisions for the long term.
- The Draft EIS analysis of Contaminant Transport by groundwater needs improvement. Similarly the groundwater modeling used cannot be relied on in predicting radiation doses to the public and for making long term decisions about site cleanup.
- The Draft EIS Assumptions used for the performance of Engineered Barriers have not been substantiated and may be overly optimistic. Engineered barriers such as caps, slurry walls, grout, and other materials are "critical" to containment of radiation on site under the Close In-place Alternative. Since there is inadequate support for the performance of these barriers over the long term, the radiation doses to the public could be underestimated.
- The Connection between the Draft EIS Analyses and the Applicable Regulatory Framework must be strengthened. Here NYSERDA points out that the License Termination Rule is the applicable regulation not portions of NRC's low level disposal regulations. "It does not seem logical to prepare an EIS to assess the impacts from decommissioning actions that must meet the requirements of the NRC's LTR, and use regulations and guidance that are not part of the LTR regulatory framework to structure the analyses." The EIS should be reframed to reflect the LTR requirements.
- The Draft EIS Approach for Exhumation may be Overly Conservative. The approach for exhumation is overly conservative and based on extreme conditions, resulting in maximal costs. NYSERDA highlights that alternative methods could reduce the costs of exhumation and waste disposal. ( This would add further support for the Site Removal Alternative.)

- The Existing Long-Term Performance Assessment is not Adequate to Support the In-Place Closure of the Waste Tank Farm or any Other Facilities.  
“NYSERDA believes that the Draft EIS long term performance assessment for the in-place closure alternative is seriously flawed and scientifically indefensible.”
- C. The Center for Health and Environmental Justice addressed the threats that climate change and its attendant severe weather events have had on superfund sites around the nation in a report this year, *Superfund: In the Eye of the Storm*. We are enclosing Chapter One of that report as part of the official record. The report can be accessed at [http://www.besafenet.com/media/superfund\\_2009.shtml](http://www.besafenet.com/media/superfund_2009.shtml) The parallels to the West Valley site are obvious. With landslides a frequent occurrence in this area, extreme rainfalls are likely to exacerbate erosion. However, DOE, rather than dealing with reasonably likely scenarios such as climate change and accepting what thousands of reputable scientists and the federal government have accepted as fact, instead engages in wishful thinking that global warming will not occur for the next 10,000 years.
- D. Concerning seismic activity in this area, the original operator shut down the operation in order to increase the seismic stability of the Facility. The operator decided not to continue with the project. However, we would like to know whether a seismic evaluation of the burial grounds and the HLW tanks has been done in relation to current criteria for seismic stability.

## **VI The Long Term Containment of Radioactive Material that is Dangerous for Thousands of Years Poses Extraordinary Management Challenges.**

About 50 years ago the federal government embarked on a plan to reprocess the nation's nuclear waste using private entities. The government was very enthusiastic and optimistic that its plan would work successfully and as a result sold the public and the state on the plan.

Fifty years later it is pretty clear that the plan was a stupendous failure:

- The private operator walked away from the project.
- A long list of accidents and spills have left the site extensively contaminated.
- The government now has responsibility for the site.
- The perpetual care fund was never adequately funded to deal with the massive amount of radioactive material that must be isolated and contained for thousands of years.
- The risks to groundwater, surface water, the Great Lakes and public health are enormous.

The actual record of spills, mishaps, accidents and contamination spreading offsite provides a realistic picture of just a few decades of active management of highly dangerous radioactive materials and the abilities of regulatory agencies to safely contain



these materials. The delay between discovery of the strontium leak and the extensive strontium plume that now must be dealt with at taxpayer expense is just one example of containment failure and inadequate management. The DOE approach for the long term assumes a degree of control never achieved by private companies and multiple federal and state agencies that have been actively involved at the site. If active management and control have not been successful historically in containing and controlling mishaps, spills and leaks it is difficult to imagine how DOE can justify a dramatically reduced level of control in the future for thousands of curies of buried radioactive waste. The Draft EIS makes the assumption that engineering and institutional controls will be successful for over a thousand years.

We believe that the historical record is a much more reliable indicator of the types of incidents that can occur in the future. If sophisticated models (with little public disclosure of inputs) display results that are optimistic or rosy compared to the historical record, there should be warning flags hoisted for everyone concerned.

Sophisticated models run by PhD mathematicians were used by Wall Street to assure themselves that the financial risks were being diluted when instead their financial instruments were linked, exposing them to very high systemic risks. We still don't have a clear path out of this financial meltdown and its economic impacts. Models are only as good as the care, judgment and wisdom of the people running the models and reviewing and reporting the results.

The public may have been fooled once by the optimism and salesmanship related to reprocessing, but it is unlikely to be fooled again. Fifty years of experience with the on-the-ground realities at West Valley has undermined trust and increased skepticism.

Rather than flippancy and vague assurances that dangerous radioactivity will be safely contained, we need a careful, realistic and sound approach to the difficulties of containing this material over the long term. Beyond the Sitewide Removal Alternative, that approach is absent for all of the other alternatives.

**VII The Draft Environmental Impact Statement and the Proposed Decommissioning Plan are grossly inadequate for their stated purposes: decontamination, decommissioning and long term stewardship.**

It should also be noted that the title of the EIS, *Revised Draft Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center*, does not reflect the contents of the EIS.

- A. Decontamination. Only one Cleanup Alternative would decontaminate the site and make it available eventually for unrestricted use. However, that Alternative: Sitewide Removal is not examined in the Decommissioning Plan which was submitted to the NRC. The Decommissioning Plan only presents the Phased Decision-making Alternative and makes two important contrary statements:

that the High Level Waste Tanks will be empty at the Start of Phase I and that they contain over 320,000 curies of radioactivity. In fact there are no plans to remove the remaining material that is stuck at the bottom of these tanks, thus they will not be empty at the beginning or at the end of Phase I. In addition, both the waste tanks and the NDA should be subject to the requirements of the West Valley Demonstration Project Act. The Decommissioning Plan offers no plan to decontaminate or decommission the NDA —fuel rods and cladding as well as reprocessing waste are buried in holes 50-70 feet deep over a sole source aquifer.

- B. Decommissioning. Despite the titles of the documents prepared by DOE, the Agency has very carefully constructed a limited legal framework for itself. DOE's own Decommissioning Plan states that long term decommissioning of the site will be the responsibility of NYSERDA. So the Decommissioning Plan is supposed to address only the requirements of the West Valley Demonstration Project Act, but ignores the Act's requirements to decontaminate and decommission facilities involved in reprocessing and solidification. The Plan also suggests that DOE's involvement at the site will end after Phase I is completed. We are concerned that DOE has constructed a 2 phased decision-making process with no intent to be involved in any work beyond the work defined for Phase I.
- C. Long-Term Stewardship. In all scenarios where buried waste must be contained on site for thousands of years, proper stewardship is essential. Sitewide Removal avoids such long term monitoring, engineering and institutional controls because the radioactive material is dug up and removed. The analyses in the EIS related to long term engineering controls, monitoring and containment at the site have been called into serious question by both the independent state-funded study, *The Real Costs of Cleaning Up Nuclear Waste: A Full cost Accounting of Cleanup Options for the West Valley Nuclear Site*, released in December, and by NYSERDA's comments in the Foreword to the EIS, where it called the EIS' long term analyses fatally flawed and scientifically indefensible. DOE wants to avoid the immediate costs of a full cleanup as well as the long term costs necessary if buried waste is left on site. We believe DOE cannot be allowed to have it both ways.

**VIII High Level Waste Tanks. The potential for serious environmental impacts from the failure of these HLW tank and the release of highly radioactive material has not been studied adequately in the EIS. Failure scenarios begin now and continue as long as the tanks remain in the ground.**

Underground tanks used to store High Level Waste are also NOW nearing the end of their useful life ( 40-50 years) and have been subjected to extraordinary conditions during their installation and subsequently in operation with acidic liquids, then chemical reactions with bases, and sodium salts. The public is obviously concerned about the

potential for the waste tanks to leak, contaminating the sole source aquifer, and potentially going undetected for some period of time.

Starting the Decommissioning Plan from an untruth— that the High Level Waste Tanks are empty at the start of Phase I— does not eliminate the responsibility to analyze potential environmental impacts of leaving these tanks in the ground for another 30 years. The tanks cannot both be empty and contain over 320,000 curies of radioactivity, yet according to the Decommissioning Plan, this contrary situation will be the condition for the waste tanks at the start of Phase I. We would like to understand where all this radioactivity resides if the tanks are empty.

The Decommissioning Plan indicates that Phase I is being limited to facilities and equipment used under the West Valley Demonstration Project for reprocessing and DOE's responsibilities under the WVDP Act. However the whole purpose of the Act was related to the vitrification of high level waste that was contained in the HLW tanks and its disposal. Why then is the remaining HLW in the underground tanks not being dealt with in Phase I?

p. ES-2 Decommissioning Plan

**The WVDP Act and the WVDP**

This decommissioning project is being conducted under the WVDP Act of 1980. The WVDP Act directed DOE to carry out the following activities: (1) solidify the high-level waste (HLW) at the site, (2) develop containers suitable for permanent disposal of the solidified HLW, (3) transport the waste to a federal repository for permanent disposal, (4) dispose of low-level radioactive waste and transuranic waste produced in the solidification of the HLW, and (5) decontaminate and decommission the tanks, facilities, materials, and hardware used in the project in accordance with requirements prescribed by the NRC. The WVDP was initiated to allow DOE to carry out its responsibilities under the WVDP Act. This plan focuses on the fifth activity – decontamination and decommissioning.

As stated on p. 2 of the Executive Summary of the Decommissioning Plan, the WVDP Act directed DOE to solidify HLW, transport it to a federal repository, dispose of LLW and decontaminate and decommission the tanks, facilities, materials and hardware used. It would appear that the DOE has not fulfilled the majority of its responsibilities under the Act, starting with the fact that high level waste in the form of sludge remains in the tanks. DOE was unable to remove this material at the bottom of the tanks during the vitrification project. Yet on p. ES-2 of the Decommissioning Plan, we are told that the Plan focuses on the fifth activity under the Act- decontamination and decommissioning. In fact the fifth activity under the Act refers to the tanks and this Plan proposes to do nothing with the remaining HLW and these tanks.

Is it possible under the WVDP Act and other NRC and DOE requirements to decontaminate and decommission the HLW tanks by claiming that they will be empty at the start of Phase I? We are unaware of any plan to actually remove sludge from the HLW tanks between now and the start of Phase I. If there is no plan to remove sludge from the HLW tanks, how exactly will DOE decontaminate and decommission the tanks

in accordance with this fifth activity in the Act, when the Phase I plan states it will do nothing with the tanks? And when the DOE states it will no longer be involved with the West Valley site after Phase I?

DOE stated its objective as fulfilling its responsibilities under the WVDP, yet DOE is not dealing with the HLW waste tanks. What then are DOE's objectives? What was the rationale for choosing not to remove the tanks?

We note that the Decommissioning Plan indicates very little environmental monitoring in the area of the Waste Tank Farm, despite transfer leaks having occurred. (p. 4-40) No surface or subsurface soil monitoring has been done despite findings related to groundwater contamination and very few samples have been taken. The single groundwater monitoring well in the vicinity of the HLW tanks record a depth of only 22 feet, when the tanks are 27 feet deep. As a result monitoring could entirely miss a leak occurring at a depth beyond that of the monitoring well. It is possible that the tanks could be contributing to the Strontium plume.

Pumps remove excess groundwater near the tanks. Equipment that will aid the drying of the vaults will be installed in Phase I. Several problems exist. Apparently the work on the strontium plume and the barrier wall will alter groundwater flow potentially significantly increasing the water in the area of these tanks. Climate change could increase the occurrence of severe weather events such as flash flooding following downpours. Existing pumps and planned drying equipment may be totally inadequate under these circumstances in preventing flooding of the vaults.

## **IX The NRC Disposal Area**

This area is under DOE control and has been undergoing measures to limit surface water flow into the area and to cap the site. A large amount of radioactive material is buried at this site including high level wastes. NFS used the NDA prior to 1972 to bury high level solid waste from reprocessing. Unprocessed fuel from a Hanford reactor and cladding from processed fuel have been buried in deep holes the NDA. Sludge from vitrifying activity was being disposed at the NDA post 1975. The deep holes are from 50-70 feet deep. These deep holes that reach the Kent Recessional Sequence pose significant risks of leaks to the sole source aquifer, that could go undetected for some time. In addition, the 2004 monitoring data indicate high contamination levels near the NDA. A responsible decommissioning plan should address this.

## **X The Work Plan, Construction Impacts and Facilities Being Removed**

We have noted the absence of a detailed work plan. The absence of a Work Plan is however consistent with all the other elements that have not been adequately disclosed to the public. We naturally had questions about the proximity of the HLW tanks to the excavation for the source of the Strontium plume. Construction impacts ordinarily are the subject of an entire Chapter in an EIS. Despite extensive construction activity we are provided with very brief descriptions. Extensive demolition and excavation will be

occurring in WMA-1 and 2. As a site map clearly shows the High Level Waste Tanks are in an adjacent area known as WMA-3. The potential for demolition and excavation to impact the waste tanks is real, yet the EIS fails to explore the potential for damage to the tanks and groundwater contamination impacting the sole source aquifer. No precautionary measures are discussed.

Facility Removals. DOE states its primary objective for Phase I as not prejudicing any options in Phase 2, however, there is inadequate explanation of the planned site activities to assure us that these actions won't actually preclude a complete excavation and cleanup later. Waste water treatment capacity is being removed. The remote handling facility is being removed. Pumps are being removed in the High Level tanks. We are not told when in the sequence of things these are being done, or why they are not needed for remaining activities. Won't removing the pumps and the lines increase the potential for leakage?

Similarly, it is not clear why facilities that have not been impacted by radioactivity are a priority for removal under Phase I of the Preferred Alternative such as the new Warehouse in WMA-10. We are concerned that eliminating this facility and others could hinder a full excavation and cleanup of the NDA and the SDA in the future. Also included in this area and slated for demolition are an administration building, an environmental laboratory, and a waste management storage area. If the Preferred Alternative is chosen, we object to any buildings, facilities or equipment being removed in phase I that pose no radioactive or hazardous material problem, because we can see no benefit to prioritizing such facilities for removal and we fear it could hinder or foreclose reasonable and cost-effective options for full clean-up. In the hearings others testified that they believed a purpose might be to reduce the visual presence of the facility to its neighbors. While not actually cleaned up the facility would have less of a presence with more buildings removed.

A complicated procedure will probably be necessary to remove the vitrified canisters from the Process building to the new interim storage facility given the very high radiation emissions of as much as 1760 Rads per hour. Yet we are not provided any detail about how this will be undertaken and remote handling is not even mentioned.

## **XI Cost Analysis**

**A Full Cost-Benefit Analysis was not done in this EIS. Instead only a limited cost analysis was done.**

DOE avoided thorny questions related to Cost-Benefit Analysis by simply not completing one. However, a cost analysis alone provides a one-sided picture of the issue by looking only at the costs of an action without considering the benefits. We acknowledge that the mechanisms for cost benefit analysis do not take account of our values and as a result undervalue priceless assets, like the Great Lakes, the sole source aquifer and the health of future generations -- children and grandchildren. Some things are priceless.

DOE's Cost- analysis devalues future priceless assets by calculating a present value for expenditures today to protect priceless assets. Present values are calculated using

discount rates. For long time periods priceless assets and future generations can only be protected by assuming a discount rate of zero.

Discounting was used in the cost analysis of the cleanup options. The total costs of their analysis should be an undiscounted cost. The economists who authored the Full Cost Accounting Study critiqued the use of discounting in nuclear waste cleanups over long time periods for the following reasons. In standard shorter investments, a discount rate is applied to account for future interest earnings. For instance, at a 3 percent discount rate, \$103 next year has a present value of \$100 today, because \$100 is the amount one would have to put in the bank today at 3 percent interest, in order to end up with \$103 next year. But, since West Valley's waste is radioactive for tens of thousands of years, a cost analysis should start out with at least a review over the next 1,000 years as a first step.

Over periods of 1000 years, any substantial discount rate implies that the health and wellbeing of future generations has no present value—or no worth to us today. Since the cleanup options are meant to protect the public for many generations, we cannot reasonably assume that there is no value to public health in the 1000<sup>th</sup> year. Also, the existence of regulatory requirements for protection of sites that will remain dangerous for 1,000 years must imply that we care today about health hazards that will be experienced in 3008. Costs and benefits incurred in that distant year must have a significant present value; otherwise, we could ignore them and we could “prove” via discounting that it is not cost-effective to spend anything today on our successors a thousand years down the road. At a discount rate of 1.4 percent, considered low by many economists, \$1 million in 3008 has a present value of \$1 today. Thus it would not be worth spending more than \$1 today to prevent \$1 million of harm in 3008. To validate the commonsense idea and the moral imperative that outcomes in 3008 matter today, the discount rate must be no more than zero. If we care about the long-term impacts of today's nuclear waste, then the only supportable discount rate is zero. While the choice of a discount rate for short term decisions is an economic question, the choice of an intergenerational discount rate is a matter of ethics and policy.

It is also worth noting in relation to the West Valley site that prevention is usually a fraction of the cost of response, remediation and clean-up. Protecting New Orleans from storms and flooding would have prevented hundreds of billions of dollars in damages from Hurricane Katrina at a fraction of the ultimate cost. The FCA Study showed that a catastrophic release could have costs far exceeding a full cleanup, \$27 billion and this estimate is based on replacing the water supply for only one drinking water system taking water from Lake Erie.

Sitewide Removal or Full Cleanup could be considered prevention of future catastrophic outcomes.

## **XII The Sitewide Removal Alternative is the ONLY Alternative that:**

- Provides a complete and comprehensive cleanup of the entire site through excavation of radioactive and toxic waste, including any off-site contamination;

- Provides a permanent and safe solution that removes radioactive waste from a site with serious erosion problems, earthquake hazards, and a sole source aquifer;
- Prevents any catastrophic releases which could pollute community drinking water supplies, Lakes Erie and Ontario, harm public health and cost billions of dollars;
- Significantly lowers health risks to nearby communities, leaving behind a contamination-free area after 64 years;
- Provides the most cost-effective approach over the long term according to a recent study (An independent, state-funded study, *The Real Costs of Cleaning Up Nuclear Waste: A Full Cost Accounting of Cleanup Options for the West Valley Nuclear Waste Site*, revealed leaving buried waste at the site is both high risk and expensive while a full waste excavation cleanup presents the least risk to a large population and the lowest cost. Over 1000 years, waste excavation costs \$9.9 billion while containing onsite buried waste costs \$13 billion, and \$27 billion if a catastrophic release occurred);
- Is not jeopardized by the powerful forces of erosion, weather, water, earthquakes or human intruders;
- Eliminates the worry for nearby residents and public officials;
- Does not require maintenance of emergency radiological services in nearby towns;
- Does not require a financial set aside to guarantee care at the site for thousands of years; and,
- Has been adequately disclosed to the public, so they can have some confidence in the outcome.

**Finally, the Sitewide Removal Alternative is the only Alternative that has our Full support for all the reasons contained in these comments.**

Enclosures:

*The Real Costs of Cleaning Up Nuclear Waste: A Full cost Accounting of Cleanup Options for the West Valley Nuclear Site, 2008.*

*Superfund: In the Eye of the Storm, CHEJ, 2009.*