

**Citizens' Environmental Coalition
Coalition on West Valley Nuclear Wastes
Nuclear Information & Resource Service**

November 6, 2017

Paul Bembia, Lee Gordon
New York State Energy Research and Development Authority

Bryan Bower, Moira Maloney
US Department of Energy, West Valley

Ashford Office Complex
10282 Rock Springs Rd
West Valley, NY 14171

Re: Comments on the Conceptual Site Model (CSM) for the West Valley Site,
June 23, 2017, Rev. 3.

Dear Paul Bembia and Bryan Bower, Project Directors &

Lee Gordon and Moira Maloney, Official Phase 1 Communications Contacts:

We appreciate the extensive work done by Neptune & Company, Inc. contractors to develop and record some of the history of the Reprocessing Project and the nature of the Site Selected. West Valley has an extensive history including notable mistakes in judgement involved in the selection of this particular site for major hazardous operations. We appreciate the opportunity to raise important omissions and to recommend inclusion of realistic conditions and scenarios.

Neptune & Company, Inc. contractors describe early in the document a need for a science-based model to inform decision-making. This science-based model is the Conceptual Site Model (CSM) which will form the foundation for the second step of the analysis- the West Valley Probabilistic Performance Assessment (PPA) Model. The

purpose of the PPA model is to evaluate Long Term performance of the site, including uncertainty. The PPA model is “a tool intended to provide support for decision making in the context of uncertainty, in a manner that is transparent, defensible and robust.” p. 2 (Introduction). The Decision-making supported is Phase 2 Decisions about Final Cleanup activities at the West Valley site.

As a consequence of the importance of the Conceptual Site Model to Final Decisions, these comments should also be considered as Scoping Comments for the Supplemental Environmental Impact Statement (SEIS). Please note that a new draft report of the Erosion WG is extensively cited in the CSM, but we have not seen this document yet. Therefore we are unable to comment on that material at this time.

I It is essential that the science-based model be clearly and factually well-defined. It serves as a foundation for the second model, the Performance Assessment. The Conceptual Site Model should be a reasonably accurate depiction of the West Valley site and the parameters that reflect the actual current circumstances or on-the-ground realities at the site. A tool to evaluate uncertainty cannot start with so many uncertainties related to decision-making.

At this point in time there are an extraordinary number of uncertainties associated with the Conceptual Site Model (CSM). It appears that Neptune and perhaps DOE and NYSERDA are undecided about a host of parameters. Some uncertainties are to be expected but the current number and scope are excessive.

Too many decisions about the CSM are still to be made and await the development of a decision-making structure. However, we are not comfortable with so much uncertainty associated with the parameters of a science-based tool. The science-based tool should be a fixed point in order to evaluate other uncertainties. We want to avoid a situation where you can lose track of what was actually modeled to obtain a particular result.

There are already major uncertainties associated with the Phased approach: 1) when Phase 1 will actually be completed and 2) how remaining Phase 2 facilities will continue to be a source of contamination. The completion of all Phase 1 projects will be at an unknown date in the future, partially dependent on federal funding, but also from on-the-ground realities of complex radiological cleanups. At the same time multiple projects to be decided as part of Phase 2 Decision-making are adjacent to other Phase 1 projects. These Phase 2 projects include the non-source area of the plume, which spreads across six WMAs (Waste Management Areas), the Permeable Treatment Wall,

the Construction & Demolition Landfill, and the Waste Tank Farm. Phase 1 projects are not separated by reasonable distances from future Phase 2 projects. Therefore so called “residual contamination” will not necessarily be fixed but subject to potential ongoing contamination from multiple projects that are unfinished.

The model itself should be well-defined with fixed parameters so all of us know immediately what exactly was evaluated in the modeling.

The following are not yet determined:

- **The Decision-making structure.** This is certainly puzzling and should have been clarified for Neptune.
- **The Spatial Boundary or Region of Interest ROI**
- **The Time Frame of the Evaluation. 4.2.2**

In Section 4.2.2 an assumption is being made that potential contamination will only occur after the loss of institutional control. The time frame is not determined. “The specific duration of the modeling performance period will follow development of a decision-making structure to help focus the scope and endpoints of the Model.” p.150.

We cannot figure out what Neptune is saying in this section. Does the evaluation begin in 2020 and include the period of active agency control or does it focus only on impacts after the loss of institutional control?

The “PPA Model’s timeframe will begin in 2020.” “The radionuclide and chemical contaminant inventories present at the end of Phase 2 decommissioning, including any residuals from Phase 1, are to be evaluated for as long as necessary in order to determine the value and timing of peak doses and risks.” p. 150 There is considerable uncertainty associated with deciding the levels of Phase 1 residual contamination based on DOE goals or intention and more uncertainty for the end of Phase 2 decommissioning since final cleanup decisions have not yet been made and completion of Phase 2 could be a century away.

- **Goals are needed. A Performance Assessment should establish the goal for the Performance of a Nuclear Waste Site undergoing decommissioning.**

Simple statements of goals and objectives for the various facilities are appropriate. They should answer the question of what desired performance should achieve. The primary overarching goal for performance should be preventing the loss of containment of radioactive materials that could result in environmental contamination and human exposure. It is very important that goals and objectives be made explicit.

- **Scenarios have not been adequately identified for the West Valley modeling. The FEPS document gave almost no attention to potential scenarios. Scenarios are the fourth item in “FEPS” – features, events, processes and scenarios.**

According to the Neptune FEPS document (Dec. 9, 2016), the International Atomic Energy Agency (IAEA) further developed the concept of FEPS in a 1985 document (IAEA 1985).p.8

“...a scenario is defined as a quantified description of a waste disposal system, including its environment and how this will change with time. Scenarios depend on the system characteristics and on events and processes [that] could either initiate release of radionuclides from waste, and cause their transport through the geosphere and the biosphere to humans, or influence release and transport rates. The choice of appropriate scenarios is very important and strongly influences subsequent analysis of the waste disposal system. The first step in identifying which of the many phenomena are relevant to a safety or performance analysis is to establish a check-list. For this purpose it is usual to divide phenomena into the following categories: (a) natural processes and events, (b) human activities, and (c) effects of the waste and the repository.”

Neptune raises the significance of human interaction with the site over the importance of basic site characteristics- high plateaus with steep slopes that are vulnerable to erosion and weather extremes, and also criss-crossed by streams and wetlands. Site characteristics interact with natural processes and weather to affect on-site radioactive wastes. We need to have a serious discussion of scenarios including those that could occur during a lengthy period of active control with Agencies still on site. Sudden, unexpected events must be included that could expose the public to offsite contamination.

Additional comments are needed related to the FEPS document. However, we believe the Conceptual Site Model and a List of Scenarios need more development first.

- **Exposures and potential health impacts are largely dismissed for a lengthy period of active Agency control.** Just 2 sentences describe 4.3.1 Potential Site Exposure Scenarios between the End of Phase 1 Decommissioning and Site Closure. This potentially decades-long period is dismissed as only involving worker exposures, who will have a safety and health program. Major excavations and facility dismantling could result in offsite exposures to the general public. In addition it has not been determined that there will be Site Closure – certainly not until the High Level Radioactive Waste has been moved to a repository. One option is maintenance of a license.

The Model needs well-defined parameters developed with appropriate rationales, and documented clearly so everyone knows what was done and how. The current Conceptual Site Model is not even close to this place.

II Important Factual Information is Missing.

- A. More Information on the Regulatory Context is needed. Licensing at West Valley preceded the passage of all major environmental laws. Early consideration of key site characteristics might have resulted in a better site selection and avoided widespread contamination.**

The reprocessing facility at the Western New York Nuclear Service Center (WNYNSC) was originally licensed by the Atomic Energy Commission and operated by Nuclear Fuel Services from 1966 to 1972. It was the first and only commercial nuclear fuel reprocessing facility in the US. These facts are important because major environmental laws were not passed until the 1970s. The site was chosen without considering key characteristics of the site that clearly would have disqualified it for any hazardous operation, due to the potential for future environmental impacts. Within just six years the site had been severely contaminated and, due to the likely imposition of additional environmental regulation, the commercial entity withdrew from the project.

The discussion of regulatory context begins on p. 3. Since 1972 federal and state agencies have been trying to contain, control and cleanup contamination at the site- 45 years. No end to the clean-up is in sight. An important fact is that the entire West Valley Demonstration Project (WVDP) is operating largely under interim enforcement orders (Consent Orders) which have directed studies and interim measures or controls to reduce the spread of contamination under RCRA Subtitle C hazardous waste management and eventual clean-up of the site. The original Consent Order was issued by EPA and the state DEC is involved in assuring compliance. While the NRC licenses most of the WVDP site the normal specific requirements of a NRC license are held in abeyance until DOE has completed its decommissioning obligations under the 1980 West Valley Demonstration Project Act and the site is turned over to the owner, NYSERDA.

It should also be noted that regulatory issues are identified as a single FEPS, yet there are many regulatory issues associated with this lengthy cleanup project – the DOE EM budget, the overall national burden of nuclear waste at many other sites, the impact of new related initiatives and directives, serious accidents such as at WIPP, etc. We recommend that various regulatory and financial issues be identified and handled individually by the CSM and the FEPS document.

B. The Findings of The Independent Expert Review Team are Important Background Information pertaining to the Site and also Provide the Rationale for Current Studies. (See the NYSERDA VIEW in the Forward to the FEIS.)

Therefore the Findings should be discussed in the CSM. Here we have listed the topic sentences to those sections:

1. The Final EIS Analysis of Soil Erosion is Not Scientifically Defensible and Should Not Be Used for Long-Term Decisionmaking
2. The Final EIS Analysis of Contaminant Transport by Groundwater Needs Improvement
3. The Final EIS Assumptions Used for the Performance of Engineered Barriers have not been Substantiated and may be Overly Optimistic

4. The Uncertainties in the Final EIS Long-Term Performance Analyses are not Adequately Presented or Discussed
5. The Connection between the Final EIS Analyses and the Applicable regulatory Framework Must be Strengthened
6. The Final EIS Approach for Exhumation may be Overly Conservative
7. Current Methods for Assessing Nonradiological Risk from Transportation Have Limitations and are Likely to Overestimate Fatalities
8. The Existing Long-Term Performance Assessment is not Adequate to Support the In-Place Closure of the Waste Tank Farm or any Other Facilities

C. EPA's 40 CFR 191 is an applicable requirement not mentioned in the CSM.

The Environmental Protection Agency regulations at *40 CFR Part 191 – Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High Level and Transuranic Radioactive Wastes* apply to the West Valley site and the high level radioactive waste there. EPA's current role was articulated in a March 2010 letter by John Filippelli, Chief, Strategic Planning and Multi-Media Programs Branch to Catherine Bohan, the DOE WV EIS Document Manager. In the letter, EPA references the "Waste Confidence decision" that sufficient mined geological repository capacity will be available approximately by 2100. Yet the DEIS released in 2008 stated capacity would be available by 2040. In the absence of disposal capacity, "HLW, SNF and GTCC will need to be stored on-site for a longer period of time than anticipated..." (High Level Waste, Spent or irradiated Nuclear fuel and Greater than Class C waste [GTCC]). EPA requested that " Phase 1 studies be designed to assure that the storage of these wastes be in compliance with the EPA's Standards for the Storage and Disposal of High-Level Radioactive Waste (40 CFR 191)". In addition the EPA noted that the State Licensed Disposal Area (SDA) and the Nuclear Regulatory Commission Licensed Disposal Area (NDA) also contained GTCC, SNF and perhaps HLW. EPA believes both the SDA and NDA should have "adequate and similar closure plans which comply with all applicable Federal and State regulations including

40 CFR 191.” (An earlier September 2009 letter was sent by Paul Giardina of EPA to Bryan Bower during the 2009 DEIS comment period.)

This regulatory requirement needs to be added to the CSM.

- D. Transuranic wastes (TRU, extremely long-lasting alpha emitters) are stored in metal containers in the Lag Storage area in WMA 5. Removal of this waste is not a Phase 1 project.** The transuranic waste now seems to have been designated as Greater than Class C (GTCC) or Greater than Class C-like radioactive waste. This waste was evaluated in the West Valley Waste Management EIS and planned disposition of this material was for it to be sent to WIPP (Waste Isolation Pilot Project) within 10 years. It is now 4 years past that deadline. This waste material has in the CSM been lumped together with other Phase 1 projects. This is likely because of inadequate information supplied to Neptune by DOE. However, there is no current disposition plan for this waste and therefore the remaining residuals from Phase 1 at this facility will be the entire inventory of TRU or GTCC materials.

A September 2017 GAO report raises serious questions about the availability of space at WIPP, the only transuranic disposal site in the US to handle currently designated defense TRU waste inventories prior to running out of space. See *Plutonium Disposition: Proposed Dilute and Dispose Approach Highlights Need for more work at the Waste Isolation Pilot Plant*. Sept. 2017, GAO-17-390. At this time West Valley’s TRU is not approved for disposition at WIPP and WIPP is taking smaller quantities of waste than before the accidents in 2014. Thus the models should not assume the TRU waste will be moved and should evaluate it.

Most importantly it is entirely appropriate for Neptune to do a performance assessment related to the storage of this material over the long term as this would be a requirement under 40 CFR 191. Bulging drums have been removed from West Valley for shipment elsewhere, but we don’t know whether there was any analysis done for the causes. While residuals might have minor contributions to dose and risk, the entire inventory clearly would make major contributions to dose and risk in a performance assessment.

It should be noted that none of the facilities in WMA 5 are slated for removal in Phase 1 because the transuranics have not been designated as military or defense waste and have not been approved by WIPP to be moved to their facility or any other DOE facility. Thus the analysis must include very likely long term storage of all TRU waste at the West Valley site.

- E. **The HLW in casks (vitrified highly radioactive waste) on the South Plateau needs to have a performance assessment and be in compliance with 40 CFR 191. Like the TRU it is not included as a facility to be evaluated in the PPA and the EIS.** However, it seems EPA was pretty clear that compliance with 40 CFR 191 is required.
- F. **High level radioactive “sludge” is missing from the CSM but it remains in the Storage Tanks in the Waste Tank Farm.** This sludge contains hundreds of thousands of curies. The final disposition of the sludge and tanks is possibly the most serious disagreement between NYSERDA and DOE. It needs to part of the analysis. DOE has attempted to avoid any reference to this remaining radiological inventory by describing that the Liquid High Level Radioactive Waste was vitrified without mentioning the fact that high level sludge and tanks remain and a determination has not yet been made about this this facility. The failure to mention WTF sludge occurs at p. 1 and p. 15. The useful life of the storage tanks was 50 years. We are now past that useful life.
- G. **The Great Lakes are missing in the Discussion of Natural Resources.** Lake Erie is mentioned as a lake, but the significance of the Great Lakes is not discussed. The Great Lakes have unique and extraordinary value as a freshwater resource for drinking, fishing, recreation and shipping. The value of the Great Lakes was recognized in the CAAA of 1990 (Clean Air Act Amendments) with the establishment of the Great Waters program. EPA research found that Great Lakes persistent contaminants are primarily recycled in the hydrological cycle with very limited flushing. The public is concerned about protecting the Great Lakes from persistent and long-lived radiological contaminants. The CSM needs to reflect EPA findings regarding the Great Lakes under the Great Waters program. To appropriately evaluate the potential impacts of West Valley, Lake Erie and major water intakes also need to be included in the ROI, Region of Interest for the study.
- H. **Appropriate Inclusion of Climate Change is missing.** There were two separate discussions in the CSM document associated with when glaciation might occur in the future. This was reviewed and dismissed as unlikely for at least the next 100,000 years. However, the findings from the IPCC (Intergovernmental Panel on Climate Change) and the National Climate Assessments must be included. We

are aware of the politics and ignorance of the current administration related to climate change. However, we don't need to rely on politically charged words like "climate change" to discuss considerable factual information on an assortment of weather trends that are very relevant to the ability to contain radionuclide contamination at West Valley. We have factual data on recent weather events since the year 2000, and predictions of weather trends based on that data which would more appropriately guide the modeling.

The globe is warming. Greater warmth means more energy is in weather systems. The atmosphere holds greater moisture when it is warm and can deliver more rain. Hurricanes are fueled by warmer water and become stronger. The 3rd National Climate Assessment 2014 has found that the years since 2000 have been the warmest ever recorded in the US. The Northeast has experienced over a 70% increase in the amount of rainfall falling in the heaviest events (defined as the top 1% of daily rain events.) While a great deal of focus is on coastal flooding, riverine flooding is also a major concern. Probable maximum precipitation and Probable maximum floods and their potential impacts on site facilities should be considered in modeling. This is true even if the plateau tops are not in a floodplain.

This year Lake Ontario experienced extraordinary flooding, whereas previously the major concern was that excess water was being withdrawn from that lake and that lake levels were dropping. Several excess rainfall events contributed to the flooding. Minimum of 3 inches over all of Lake Ontario with upstream sources such as Lake Erie providing more water. However, multiple management factors may be involved in the flooding that occurred Spring 2017. (See Great Lakes Connection, International Lake Ontario-St. Lawrence River Board.)

Droughts and wildfires have become more problematic, although Western NY is not at higher risk than other areas of the country. The seasons for wildfires are now significantly longer and are straining firefighting resources, that have experienced recent federal budget cuts. A wildfire could jeopardize radioactive materials.

We recommend a more appropriate focus on expected weather events that have more potential to affect the West Valley site and radioactive materials in the near and medium term than glaciation. The 4th National Climate Assessment was just produced.

NE Factsheet from 3rd National Climate Assessment

http://www.globalchange.gov/sites/globalchange/files/Regional_NE_2pg_NCA3_final.pdf

To Download the complete 3rd National Climate Assessment:

<http://nca2014.globalchange.gov/downloads>

III Key Issues

- A. The Loss of Institutional Control can occur at any time for a host of reasons. Neptune should not assume that this would only occur after Agencies have left the site.**

We have numerous examples where institutions of government have only limited ability related to CONTROL under a variety of situations: Federal Budget not reauthorized, National Security Issues and War taking precedence, Declarations of Emergency, etc. The federal government was shuttered when the federal budget was not reauthorized.

However, recent realistic examples illustrate the limits of government control. For example, in 2010 after the FEIS & ROD, DOE explained that Phase 1 would be completed in 10 years, assuming a budget of \$75 million per year. Immediately that budget was dramatically reduced because some of that allocation was provided to Brookhaven. West Valley has received approximately \$60 million per year since ---well below what is needed to complete Phase 1 on the 10 year schedule.

Loss of institutional control can also occur because of known site factors such as vulnerability to erosion, landslides, earthquakes, etc. Weather extremes such as hurricanes, tornados and extreme rainfall could also result in the loss of institutional control. Performance assessment modeling should be concerned with Loss or Partial loss of containment as consequences of these events. They are examples of loss of institutional control, even if temporary.

In the August 2009 excessive rainfall event, we lost a hospital in Gowanda, NY due to flooding. Hospital management had no control over that event. They experienced the temporary loss of institutional control, due to forces beyond their control. Eventually they abandoned plans to rebuild in that location.

Given recent climate driven catastrophic events, Hurricanes Harvey, Irma and Maria, as well as the extraordinary forest fires in California, it is clear that loss of institutional control is not something that can be put on a calendar—such as the day DOE is finished at West Valley. Emergency response agencies while in charge, never have the degree of control they desire. Management at a chemical plant in Houston was forced to abandon the plant and allow the chemicals to explode—this illustrates a lack of control.

In addition we also do not agree that loss of site knowledge occurs at the same time as loss of institutional control. Provisions should be made to assure maintenance of site knowledge in multiple appropriate government locations.

We recommend that Neptune alter how it defines and evaluates the loss of institutional control.

B. Flooding events affecting Buttermilk and Cattaraugus Creeks need to be evaluated for potential effects on engineered systems and facilities within the WVDP and SDA.

Past modeling of flooding has suffered from limitations of the model. Since the WV site is on a high plateau, it is not located in a 100 year floodplain. Neptune largely dismisses direct effects of flooding on the site, while acknowledging indirect effects from high discharges including erosion and slope saturation. The 2009 excess rainfall event channeled water from large drainage basins to Buttermilk & Cattaraugus Creeks. On-site dam spillways were damaged and contributed to additional water flowing into Buttermilk Creek, where it scoured the toe of the valley wall, leading to a landslide that removed 15 feet from the wall and closer to the SDA. Neptune discussed the Aug. 2009 intense precipitation event multiple times in the CSM but repeatedly fails to include the landslide in that event. This is a critical event that needs to be reflected in future modeling of extreme rainfall events.

The model needs to be able to capture the interaction of excess rainfall over a broad area channeled into narrow valleys and the interaction with Site

engineered systems. When was the last engineering review of the Dams themselves? We know the spillways were damaged and repaired after 2009. What is the maximum water height that should be permitted before a collapse might threaten? Documents should be provided about the engineered construction of the dams and their safety factors. A storm event can also involve wind. Wind can remove covers over the burial grounds, allowing water in that could destabilize the disposal areas or release radioactive materials.

Modeling should include multiple factors: Site Characteristics interacting with Natural processes (wind, rain, flooding) interacting with engineered systems (man-made dams, armored drainage channels & cover materials). The whole system needs to be evaluated. Natural processes must also be adjusted to account for climate change.

In a September 2017 NY DEC webinar presentation on flooding, we learned that many counties are totally reliant on old paper maps for floodplain information, while others have moved to more useful electronic files. Cattaraugus County is reliant on old paper maps. DOE & NYSERDA should consider making an investment in these electronic mapping files for floodplains in Cattaraugus County. Such electronic mapping files will be useful to DOE & NYSERDA for the PPA and the SEIS.

C. Hydrogeologic Setting

The site is situated over a sole source aquifer, the Cattaraugus Creek Basin Aquifer system, designated by the EPA. This is an important regulatory designation, needing a full investigation and evaluation. It is not sufficient for DOE to merely state “there is no concrete evidence that suggests that site groundwater is connected hydraulically with the Springville aquifer north of Cattaraugus Creek” (citing DOE 2010a). The absence of evidence is not conclusive. This should be investigated further.

South Plateau fractures occur in the weathered Lavery Till (WLT) and extend into the unweathered Lavery Till (ULT) and can be connected to sand lenses. p. 100 “Below the weathered zone, fractures of 4 to 8 m (13 to 26 ft) in length may extend into the ULT and can be hydraulically connected to sand lenses (DOE 2010a; WVNS 1993a).” These fractures can affect the stability of the South Plateau and waste buried there as well as the movement of contaminants from the disposal areas to off- site locations.

D. Radiological Risk

Appropriate Protection for Vulnerable Populations

Women and Children

“DOE (2011) notes that the practical difference in applying the age-weighted versus adult DCFs (Dose Conversion Factors) for dose calculations is not substantial because “the higher dose coefficients at the younger ages are tempered by their lower daily intakes and the U.S. population distribution for which 74 percent of the population falls into the adult subgroup. Regardless, Neptune will employ these DCFs in the PPA.” p.148 Section 4.1.1 Radiological Dose

We recommend that Neptune incorporate the findings of BEIR VII which indicate that women are at 50% higher risk from radiation men in the same age groups and that youth are at even greater risk, with baby girls at highest risk. The current radiation standards ignore these significant increased risks, thus putting members of the public at unacceptable risks.

While children might make up just 26% of the population, that so-called subgroup represents the entire future adult population. No one gets to be an adult without first being a child.

It is a known fact that children have higher daily intakes adjusted for body weight than adults. Children have been found to also be more susceptible to the effects of radiation that adults with greater susceptibility experienced by the youngest. Fetuses are the most susceptible so this makes pregnant women a susceptible subgroup. While cancer is the most used end point, birth defects can be induced by radiation and is an effect exclusive to children. Cancers can also be induced in children in shorter time periods than for adult latency periods. Additional safety factors are usually applied related to this increased susceptibility. An Office of Children’s Health was set up at EPA to ensure that impacts to children were appropriately considered in evaluating health policies. An Obama Presidential Executive Order addressed the special vulnerability of Children.

Non Cancer Health Effects

Health Experts often mention that total Non-Cancer health effects are approximately 10 times the incidence of cancer health effects.

Chemical Toxicity of radionuclides Section 4.1.3

In general the health evaluation of radioactive materials involves 1) assessing the radioactivity of the material, how it decays and its progeny and 2) assessing the toxicity of the non-radioactive form of the element and any non-radioactive progeny.

There are many metals in decay chains. Lead is one example and there are standards related to the toxicity of this metal. The toxic effects of lead include neurotoxicity and developmental, reproductive, and cardiovascular effects. Lead is a potent neurotoxin affecting the central nervous system (CNS) and the peripheral nervous system (PNS), and high levels of exposure result in profound cognitive impairments. Exposure of children to lower levels of lead has been associated with impairment of neurocognitive and behavioral development, including impairment of attention and hearing.

Susceptibility of Environmental Justice Communities

EJ communities are also covered under a Presidential Executive Order related to historical inadequate protection for a variety of reasons. In relation to West Valley the Seneca Nation and Territory needs to be evaluated as an Environmental Justice community, uniquely impacted because its territory lies immediately downstream of the West Valley site. Any loss of containment would deliver radionuclides to the Cattaraugus Creek and this community, beyond regular ongoing releases. Their use of the river and health impact scenarios needs to be thoroughly reviewed.

E. Scenarios involving human exposure to radioactive contamination

We are very concerned that the modelling is being focused on a variety of individual exposures, primarily after loss of institutional control rather than the potential for loss of control during active Agency activities and control.

We disagree with this approach. If site factors had been adequately considered we believe this site would never have been chosen because of its location on a high plateau and its vulnerability to the inexorable forces of erosion. Neptune appears to set up the West Valley situation as an existing disposal site that had all the basic protections naturally or added at the beginning of its operation. Nothing could be further from the truth. As a consequence of this thinking, the scenarios Neptune is proposing involve largely limited numbers of humans and exposures.

We believe there is a need for a set of scenarios that deal with the loss of containment related to characteristics of site geology and vulnerabilities interacting with extreme weather or seismicity. This would relate to sudden disruptive events occurring at the site and potentially large human exposures off-site.

A second set of scenarios should deal with evaluating longer term forces of erosion involving multiple events that require actions be taken by management to repair damage to facilities and their ability to contain radioactive materials. This set of scenarios could include partial loss of containment and some human exposures off-site as well.

Neptune talks a lot about residuals. However future extensive cleanup activities at the site includes building demolition and large scale excavations of very contaminated areas, such as the lagoons and the source area of the plume. Active cleanup does not involve just residuals. This activity needs to be assessed for potential impacts on the public off-site. Extreme weather events could occur at unexpected times, when runoff could include highly radioactive and chemically toxic materials.

We look forward to working with you and Neptune on the Final Conceptual Site Model.

Respectfully,



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