

Environmental Justice Task Force
of the
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From:
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Mr. Martin Krentz
West Valley Demonstration Project
US Department of Energy
10282 Rock Springs Rd. AC-DOE
West Valley, NY 14171-9799

Sent via email to:
martin.krentz@emcbc.doe.gov
lee.gordon@nyserda.ny.gov

Re: Scoping Comments for Supplemental Environmental Impact Statement (SEIS ...DOE/EIS-0226-S1)¹

Dear Mr. Krentz,

I recommend site wide removal of all radioactive material – as soon as possible -- at the West Valley Demonstration Project.

Why? Past weather is no longer prologue, as rainfall frequency continues to increase every decade. Hence, using past weather to predict future erosion is problematic. Long term storage of radioactivity at West Valley risks usability of the Cattaraugus aquifer and Lake Erie. These sources of drinking water must be protected regardless of cost. Secondly, the likelihood of loss of institutional control of West Valley arising from stressors created by millions of coastal US residents migrating inland from our coastal areas --- plus stressors arising from similar migration patterns elsewhere around the world. Let's restore West Valley to its pristine past before 2050.

By 2100, it's likely that significant portions of NY State-owned property will be used (i.e. sold) to accommodate NY State coastal refugees. Of course, if all of the radioactivity is dug up and removed prior to the start of internal migrations (~2050), West Valley could be in that pool of vacant properties available for future climate refugees – given West Valley's access to an abundance of fresh water, significant electrical power infrastructure and access to methane (details and references below).

¹ <https://www.nyserda.ny.gov/-/media/Files/EE/West-Valley/Supplemental-Environmental-Impact-Statement-NOI.pdf>

West Valley is facing the effects of climate change, a definite profound increase in the frequency of extreme rainfall events, and associated enhanced erosion.

In fact, the world is in the same boat as West Valley. The migration of millions of climate refugees is expected to begin towards the middle of this century (about 20 years from now). It's a strong possibility that institutional control of West Valley will be seriously challenged by these impending events as monetary resources will be diverted from West Valley to accommodate US climate refugees. We don't have much time to fix West Valley, and the only reasonable fix is removal of all radioactive material away from the Great Lakes and Cattaraugus Creek watershed.

Background:

1. Climate change is happening now², and, we cannot predict future climate over West Valley...except that historical weather patterns are indeed changing. Intense rainfall events in the Northeast have increased almost 75% since 1958³. This increase in frequency of intense (2 inch) "100-year" rainfall events is particularly noticeable in Western NY⁴. This increase in frequency of intense rainfall events shows no sign of abatement. The cause is attributed to higher air temperatures (arising from atmospheric CO₂ and methane from anthropogenic activity) and the ability of that warmer air to hold more moisture⁵.
2. Superimposed on these rainfall events is a new phenomenon called "mesoscale convective systems"⁶ aka "rain bombs". These are the largest type of intense thunderstorms. Andreas Prein and colleagues at the National Center for Atmospheric Research (NCAR) have modeled these "rain bombs" into the future⁷. Current global weather modeling is unable to predict these types of storms, and hence predict future flooding and erosion. "Large, intense thunderstorms frequently cause flooding and fatalities....these storms may see a threefold increase in frequency and produce significantly heavier downpours in the future, far exceeding previous estimates".⁸

NCAR's Prein says "....hourly extreme precipitation are projected to significantly increase in almost all North American land regions.....increases in extreme frequencies of up to 400% are projected".⁹

²http://s3.amazonaws.com/nca2014/high/NCA3_Climate_Change_Impacts_in_the_United%20States_HighRes.pdf?download=1

³ Art DeGaetano, Page 71 https://www.westvalleyphaseonestudies.org/images/documents/ClimateWorkshop_Handbook_R4.pdf

⁴ <http://precip.eas.cornell.edu/>

⁵ Clausius-Clapeyron Equation <http://www.science.uwaterloo.ca/~cchieh/cact/c123/clausius.html>

⁶ <https://www.nature.com/articles/s41558-017-0017-5>

⁷ <https://www.nature.com/articles/nclimate3168.pdf>

⁸ Nature Climate Change, 20 November 2017

⁹ <https://www.nature.com/articles/nclimate3168.pdf>

Rain Bomb: What will be the Effects at West Valley?



Phoenix, Arizona.....Washington Post July 29, 2016

https://www.washingtonpost.com/news/capital-weather-gang/wp/2016/07/29/rain-bomb-seriously-this-is-the-kind-of-thing-that-gives-weather-media-a-bad-rap/?noredirect=on&utm_term=.f3e597fd92c7

3. Notwithstanding the current administration, the Department of Defense identifies climate change and concludes that it “..has to adapt infrastructure to the risks posed by climate change”¹⁰. Indeed, the Quadrennial Defense Review 2014 says: “The pressures caused by climate change will influence resource competition while placing additional burdens on economies, societies, and governance institutions around the world. These effects are threat multipliers that will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions – conditions that can enable terrorist activity and other forms of violence.”¹¹

During phase 2, the West Valley Demonstration Project should take heed of GAO’s and DOD’s reports. There is risk of losing institutional control. Hence, the need for haste in fixing the radioactive waste problem at West Valley prior to the DOD’s expected onset of world disorder.

4. Studies indicate 55% of the peoples of the developing nations (143 million) will be migrating internally by 2050¹². This upcoming migration will impact the integrity of the social support structures and infrastructures within countries that have few monetary resources.

¹⁰ <https://www.gao.gov/assets/690/688323.pdf>

¹¹ Page 8. H

http://archive.defense.gov/pubs/2014_Quadrennial_Defense_Review.pdf

¹² Groundswell: Preparing for Internal Climate Migration. <https://openknowledge.worldbank.org/handle/10986/29461>

By 2060, there might be 1.4 billion climate refugees due to rising sea levels, and by 2100, rising sea levels are expected to create 2 billion climate refugees¹³ -- people who live near the coastlines will be forced inland.

The US is not immune from rising sea levels. By 2100 -- projections indicate a 1.8 meter rise in sea level will place 13.1 million US coastal residents at risk¹⁴. For New York State, the figure is 901,300 -- most of NY State's climate refugees will come from Long Island, with the remainder living along the Hudson River up to Albany NY. Total: about 950,000 NY State climate refugees are expected by 2100. The authors suggest federally owned land will be sold to accommodate US coastal climate refugees.

NY State's social structure and infrastructure will be seriously stressed. Where will NY State climate refugees go? Will they be welcomed?

It's likely that substantial portions of NY State owned property will be sold to accommodate NY State coastal refugees. Of course, if all of the radioactivity is dug up and removed prior to 2050, West Valley could be in that pool of vacant NY State-owned properties available for future climate refugees. Given the abundance of fresh water nearby, electricity and methane infrastructure¹⁵, West Valley could be attractive to future coastal climate refugees.

The alternative of leaving radioactivity on site at West Valley should not be an option. Will monetary resources be available in 2100 to care for West Valley -- if the radioactive material has not been dug up and moved out of West Valley by that time? What about erosion in a setting of increasing rainfall?

Recommendations:

- a) The Probabilistic Performance Assessment (PPA) should take the climate refugee predictions into consideration and attempt to predict the drain on monetary resources available to care for West Valley Demonstration Project between the years 2050 and 2100.
- b) The PPA should assess the usability of West Valley land for climate refugees arriving between 2050 and 2100 in a setting where all of the radioactivity has been from the site.
- c) The PPA should assess the usability of West Valley land for climate refugees arriving between 2050 and 2100 in a setting where all the radioactivity (scaled to 2050 and beyond) has been left on site (i.e. close in place option).
- d) Remove all radioactive material from the West Valley Demonstration Project by 2050.

¹³ Rising seas could result in 2 billion refugees by 2100. <https://www.sciencedaily.com/releases/2017/06/170626105746.htm>

¹⁴ Millions projected to be at risk from sea-level rise in the continental United States. <https://www.nature.com/articles/nclimate2961.pdf>

¹⁵ Hopefully we will be entirely off methane by 2050.