Commentor No. 15: Carlos Valdez, Chair, Northern New Mexico Citizens' Advisory Board

Northern New Mexico Citizens' Advisory Board
A U.S. Department of Energy Site-Specific Advisory Board
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June 13, 2013

David Levenstein, EIS Document Manager
U.S. Department of Energy
Office of Environmental Compliance, EM-11
P.O. Box 2612
Germantown, MD 20874-2612

Dear Mr. Levenstein,

On Behalf of the Northern New Mexico Citizens' Advisory Board, I would like to submit comments for the Mercury Supplemental Environmental Impact Statement. Several Members of the Northern New Mexico Citizens' Advisory Board attended the Public Hearing at the Crown Plaza Hotel in Albuquerque, New Mexico on May 9, 2013. The Members would like to submit the following comments for inclusion in the public comment section. The NNMCAB is comprised of residents of northern New Mexico, appointed by the Assistant Manager for Environmental Management, to advise DOE on LANL's clean up of legacy waste.

The following bullet points and examples were prepared by Mr. Bob Villarreal and accepted by the NNMCAB members during their Committee Meeting:

- The meeting and briefing did not focus on the safety and security of handling and working with mercury. 15-1
- There are considerable risks in pre-selecting a site (West Texas) that does not have a history of health, safety, and security of handling and storage of mercury. 15-2
- There did not seem to be a separate preparatory site or building for receiving and preparing mercury for storage. Also, for assuring that the mercury received met reception criteria for storage. At least there should be capability to make analysis with an Energy Dispersive X-ray Fluorescence Spectrometer to determine the purity of the received mercury. This is a straight-forward instrument that can tell you how pure the mercury is and actually tell you the identity and concentration of all impurities in a sample of mercury. This takes about 1 minute to accomplish. 15-3
- According to the presentation, the acceptable incoming mercury must be 99.5% pure to meet hazardous waste storage requirements. No plan was presented that determined the purity of the incoming mercury nor how that determination was to be made and what was to be done with rejected elemental mercury that did not meet requirements. 15-4
- The Preferred Alternative has already been selected without consideration of the above. 15-5
- A designated technical laboratory should by selected that can help set-up this mercury facility and be available for consultation for unforeseen difficulties and problems. 15-6
- As far as I know, considerations concerning extremists and perhaps terrorists have not been addressed. 15-7

15-1 DOE acknowledges the commentor's concerns about safety and security of handling and working with mercury. A DOE mercury storage facility would operate in accordance with a RCRA permit. The purpose of the public hearings on the *Draft Mercury Storage SEIS* was to provide a broad overview of the DOE Mercury Storage Program and to provide an opportunity for members of the public to comment on the *Draft Mercury Storage SEIS*.

More detail about facility design and operation is available in the *Interim Guidance* (DOE 2009), which establishes basic standards and procedures for the receipt, management, and long-term storage of mercury at a DOE facility. The guidance is based on laws, regulations, DOE orders, and best management practices. The *Interim Guidance* discusses (1) DOE's anticipated waste acceptance criteria; (2) procedures DOE would use to receive, store, and monitor the mercury; and (3) spill and emergency response procedures. Thus, implementation of the *Interim Guidance* would ensure that elemental mercury would be stored in such a manner as to protect the environment, workers, and the general public. A copy of the *Interim Guidance* is available on the project website (http://www.mercurystorageeis.com/library.htm).

15-2 DOE acknowledges the commentor's concerns about selecting WCS as the Preferred Alternative, and the experience of WCS with mercury storage. Although DOE has identified WCS as the Preferred Alternative, as discussed in Chapter 2, Section 2.4, of this *Mercury Storage SEIS*, DOE has not made a decision on the location of the mercury storage facility. DOE will make a decision no sooner than 30 days after publication of the EPA Notice of Availability for this *Final Mercury Storage SEIS* in the *Federal Register*. The final site selection will be based upon the January 2011 *Mercury Storage EIS*, this *Mercury Storage SEIS*, and other appropriate factors and will be announced in a ROD published in the *Federal Register*. As described in Chapter 3, Section 3.8.8, of the January 2011 *Mercury Storage EIS*, WCS is permitted by the State of Texas for hazardous waste storage.

- The history of the chemistry of received mercury samples did not seem adequate to protect the building systems from anti-government subversion. 15-8

To expand on the above comments, listed are some additional potential issues and why it is necessary to consider them.

It is obvious that the mercury arriving at the storage facility would originate from a diversity of locations from a variety of processes. Therefore, there has to be differences in the purity of the incoming mercury. Some of the mercury came from gold mining processes that contained a great number of elemental impurities such as palladium, silver lead, tin, bismuth and other elemental impurities that are amalgamated (alloyed) to the mercury. Some of the impurities will follow the gold product but others will follow the pathway of the mercury which results in contaminating the mercury that is eventually stored. A good number of these "hazardous impurities" require that an accounting or categorization of stored mercury vessels will be needed, and mercury vessels stored accordingly. 15-9

Mercury is an element that can form explosives without added constituents. Some of the most powerful primary explosives which includes mercury fulminates, a very powerful explosive that when exploded result in a detonation wave that is faster than the speed of sound. A mercury storage facility must have knowledge that mercury explosives are very sensitive to shock, vibration, and temperature cycles. Consequently, provisions must be made by the receiving facility to address these concerns. 15-10

Elemental mercury is volatile or has a low boiling point and can spread rather easily. At the mercury facility Mr. Villarreal worked at in Idaho, Portable mercury detectors were used to locate and detect unknown spills. He did not see or hear of spatial mercury detectors in the proposed new mercury storage facility. The potential for an accident with fire and rain is noted to be one every 185,000 years. This is misleading because there could be an accident, within the first few months of starting a facility up and it gives the impression that it is essentially impossible. One mercury spill whether inadvertent or not can shut down several labs because it is so easy to spread. You can start by assuming one mercury spill of half a bottle and recognize the difficulty in cleaning that up and the impact to other labs and personnel. 15-11

Kindest regards,

Carlos Valdez, Chair
NNMCAB

Cc: Pete Maggiore, LASO/EPO
Lee Bishop, DDFO
NNMCAB Members

15-3 As shown in Chapter 2, Figure 2–4, of this *Mercury Storage SEIS*, the mercury storage facility would include Receiving and Shipping and Handling Areas. A DOE mercury storage facility would operate in accordance with a RCRA permit.

As discussed in Chapter 2, Section 2.1, of this *Mercury Storage SEIS*, the proposed mercury storage facility would only store elemental (metallic) mercury that is at least 99.5 percent pure. DOE has developed guidance, presented in the *Interim Guidance* (DOE 2009), that establishes basic standards and procedures for the receipt, management, and long-term storage of mercury at a DOE facility. Chapter 2, Section 2.3, of the *Interim Guidance* discusses in detail generator requirements for shipping mercury to a DOE long-term storage facility, which includes steps that must be completed prior to shipping. The generator would be responsible for ensuring that the mercury meets the waste acceptance criteria for the DOE mercury storage facility. DOE would perform random sampling to ensure compliance with the waste acceptance criteria. In the unlikely event that a shipment of mercury is found not to meet established waste acceptance criteria when received at the DOE long-term mercury storage facility, the shipment would be returned to the generator at the generator's expense. Specific instruments to perform the sample analyses have not been selected.

15-4 See Response No. 15-3.

15-5 Although DOE has identified WCS as the Preferred Alternative, as discussed in Chapter 2, Section 2.4, of this *Mercury Storage SEIS*, DOE has not made a decision on the location of the mercury storage facility. See also Response No. 15-2.

15-6 DOE acknowledges the commentor's suggestion regarding consultation with a technical laboratory and will consider this suggestion in planning for a mercury storage facility.

15-7 Chapter 4, Section 4.2.9.1.4, of this *Mercury Storage SEIS* discusses intentional destructive acts. Intentional destructive acts include actions by extremists and terrorists.

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15-8 See Response No. 15-3.

15-9 DOE is cognizant of compatibility issues with mercury storage. So as to mitigate any compatibility concerns, the proposed mercury storage facility would only store elemental (metallic) mercury that is at least 99.5 percent pure. See also Response No. 15-3.

15-10 The proposed mercury storage facility would only store elemental (metallic) mercury that is at least 99.5 percent pure; none of the mercury would have explosive properties. See also Response No. 15-3.

15-11 As described in Chapter 2, Section 2.3.3, and Appendix C, Section C.2.1, of this *Mercury Storage SEIS*, DOE would conduct mercury vapor monitoring for the detection of any unplanned release of mercury or deterioration of flask or container integrity. Weekly inspections of containers in long-term storage would incorporate air sampling. See also Response No. 15-1.

Chapter 4, Section 4.2.9.1.2, discusses the frequencies of facility accidents evaluated in this *Mercury Storage SEIS*. A storage facility fire was given a negligible frequency due to limited flammable materials, fire protection systems, and lack of ignition sources, while a single flask drop accident was assigned a moderate frequency. Table 4–6 discusses the frequencies of transportation accidents under certain weather conditions. As summarized in Chapter 2, Table 2–2, risks to workers and the public from a facility or transportation accident would be negligible to low.

See Appendix D, Section D.3.2, of this *Mercury Storage SEIS* for a discussion of the factors strongly influencing risk, including the vapor pressure of mercury.