Hanford Challenge Comments to the U.S. Department of Energy's Statement on Recent Plutonium Releases at the Plutonium Finishing Plant

January 26, 2018

On January 24, 2018, the DOE issued an Employee Message about the airborne plutonium releases that have occurred at the Hanford site's Plutonium Finishing Plant during deconstruction. The statement contained important new points, raised new concerns, and received news coverage in the *Tri-City Herald* and *Seattle Times*. Here are Hanford Challenge's comments on the statement.

First, the Department of Energy's ("DOE") Manager's statement contains some alarming and uncomfortable news –

- Plutonium and americium particles escaped from a Hanford demolition project in June 2017 and were detected as far as ten miles away from the accident site. We are only just now learning this news.
- Hanford's radiation protection program did not realize these releases had happened. Instead, it was Washington State Department of Health who detected the contamination ten miles away.
- Private and public vehicles were contaminated in a parking lot near the Hanford site, some were driven offsite and into local communities, and some vehicles returned to Hanford with contamination.
- Dozens of workers have tested positive for plutonium uptakes according to tests for internal contamination. All of these workers were in "safe zones" where no contamination was supposed be present. This happened in June *and* in December 2017.
- The statement reads that, "It is not acceptable for contamination to be discovered outside of controlled cleanup areas." However, the statement was silent as to the acceptability of workers being contaminated and the vehicle contamination incidents.

We are disturbed that the main emphasis of DOE's statements sought to minimize or dismiss the releases instead of treating them as serious incidents.

The statements were silent about the fact that these were inexcusable and preventable plutonium releases, resulting from the contractor's rush to meet deadlines and earn fee awards.

The statements failed to note that contaminated vehicles left the site and could have, and likely did, spread radioactive contamination in nearby communities. Workers could have, and likely did, leave the site with contamination on their clothing.

The statements failed to note that although the contamination spread ten miles away from the Plutonium Finishing Plant ("PFP") in June, thousands of workers were at work in the tank farms and other work locations, and thus potentially exposed. Most of these workers were never tested.

The communications with workers and with the public has left much to be desired, and until recently practically non-existent. Many workers have told Hanford Challenge that they feel deceived, lied to, and marginalized. They reported learning more from media accounts and outside sources than from their own management. Many workers have said they have completely lost trust in DOE and the contractor.

The DOE statements went to great lengths to dismiss any potential health effects that could result from these releases, comparing plutonium particles lodged in sensitive lung tissue to plane trips and medical X-rays. These comparisons are, in Hanford Challenge's view, based on a set of faulty assumptions and a lack of data. For instance:

- Radiation tests (called bio-assays) were in many cases conducted weeks after the exposure, when such tests should have been conducted within two days of exposure. The reliability of testing workers for these substances weeks later raises many concerns.
- Tests were voluntary, and many workers were initially discouraged from submitting samples, being told that they were outside the zone of contamination when in fact they were not.
- The DOE statements characterized worker doses as "unlikely" based on a presumed worst-case scenario at the PFP using the highest available measurement. That is incorrect. Given that this is actual data from the work area, the probability of exposure to this dose is 100% in a worst case analysis.
    - We also know that DOE's "worst-case scenario" is unlikely to be the worst case. For any limited (real) data set, there is a measurable chance that there is an unmeasured value that exceeds the maximum. Anytime one can only measure a finite number of points, there remains uncertainty about locations where the dose could be even higher.
    - If Hanford (or the State) measured 20 out of 300 possible grid locations, the odds that the highest point of the 20 is higher than the highest point among the 280 unmeasured spots, is very improbable.
    - If you get a 10 millirem dose ten miles away, who's to say you wouldn't get a 200 millirem dose 1/4 mile away?

And finally, if the worker inhales a plutonium oxide particle that is too big to move out of the lungs, but still small enough to get into deep lung tissue, then they should be using a committed dose, not an annual dose. Thus, the committed dose could be 50x higher.

We look forward to the reports from the independent, external investigations that are being conducted. Worker health and safety must be the paramount priority at Hanford. Hanford management keeps insisting that it is; however, the news about these contamination incidents shows an alarming degree of negligence, evidence of a poor safety culture, and places the public at risk. All of which is avoidable. Hanford cleanup is important, necessary, and has to be done correctly.