



Oregon

Kate Brown, Governor



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Ms. Stacy Charboneau, Manager
U.S. Department of Energy, Richland Operations Office
PO Box 550, A7-50
Richland, WA, 99352

Mr. Dennis Faulk
U.S. Environmental Protection Agency
825 Jadwin Avenue, Suite 210
Richland, WA 99352

Ms. Alex Smith
Washington Department of Ecology
3100 Port of Benton Boulevard
Richland, WA 99354

Dear Ms. Charboneau, Mr. Faulk and Ms. Smith:

For nearly a decade, the State of Oregon has been providing written comments to the U.S. Department of Energy (DOE) and its regulators about the 200-CW-5, 200-PW-1, 200-PW-3 and 200-PW-6 Operable Units. One constant theme through all of our letters has been a concern about concentrated plutonium and other contaminants being left in the near-surface in any of these waste sites – particularly in the “High-Salt Waste Group.”

In July 2011, we expressed our concerns that the *draft Proposed Plan* limited excavation to “up to two feet” in the High-Salt Waste Group. We believed, and still believe, this was inadequate and insufficient to ensure long-term protectiveness. We instead proposed the “Observational Approach,” which had been used with great success on the Columbia River Corridor. Such an approach would determine the location of contaminants for removal and would not necessarily limit the excavation to two feet, nor would it require an excavation of even two feet in areas where there was little contamination present.

The Record of Decision (ROD), issued in September 2011, provided some hope that if concentrated plutonium or other contaminants were found after the two feet of excavation, that these hot spots would also be removed:

“After excavating to the specified depths in these waste sites, plutonium 239/240 levels will be assessed in accordance with a sampling and analysis plan that will be part of the (Remedial Design/Remedial Action) RD/RA work plan. DOE will consider removing additional plutonium-contaminated soil from these waste sites.” *Record of Decision, 200-CW-5 and 200-PW-1, 200-PW-3 and 300-PW-6 Operable Units, Page 91.*

We were told at the time to make sure to review and comment on the *RD/RA Work Plan* and the *Sampling Plan* when they became available, as that's where the important details would be included that would clarify and ratify that statement.

Those documents are now available, and we have just completed a review of the *RD/RA Work Plan* (DOE-RL-2015-23, Rev 0) and the associated *Sampling and Analysis Plan* (DOE-RL-2015-22, Rev 0).

We are disappointed that a commitment to consider excavating beyond two feet is again vague – with references to “DOE will evaluate removing additional plutonium contaminated soil from these waste sites” and “Waste sites will be evaluated by EPA and DOE to determine if additional soil removal is warranted.”

We are also disappointed that the criteria by which this determination will be made has not yet been agreed to, though we are pleased that the U.S. Environmental Protection Agency has insisted that until they reach agreement with DOE on this criteria, the excavations should not be back-filled without their concurrence. We urge the agencies to reach agreement on the criteria before beginning excavation so as to not unnecessarily interrupt or delay work once it begins, which could increase the possibility of contamination spread or worker exposure. That draft criteria should then be provided for public review and comment.

Rather than extensive sampling within the waste sites to determine the location and concentrations of contaminants that remain, DOE will instead rely on field radiological surveys. The Conceptual Site Model includes an assumption that distribution of plutonium and americium-241 in the soil “is very similar” and that they “appear” to consistently be co-located (*Sampling and Analysis Plan*, page 3-2). The intent is to use survey instruments to detect a low-energy gamma emission from the americium-241, with the assumption that the plutonium will be “detected” as well.

We were unable to find any documentation in the *Sampling and Analysis Plan* that would indicate to what depth this means of detection would be effective. Even if the americium-241 and plutonium is co-located, we don't know whether field radiological survey instruments will be able to detect hot spots more than a few inches deep, or whether the soil will shield the low-energy gamma emissions.

Our concern is greatly exacerbated by a sampling plan that appears to be completely inadequate to augment field surveys.

For example, for the 216-Z-9 trench, with some 1,800 square feet of “floor space,” the *Sampling and Analysis Plan* indicates only one sample is planned to evaluate the nature and extent of contaminants of concern – including technetium and plutonium – at depths greater than 15 feet below ground surface. No samples are proposed to evaluate residual plutonium 239/240 and americium (Table 3.2, page 3-8).

As another example, the 216-Z-18 Crib consists of five separate, parallel trenches, each 207 feet long by 10 feet wide. With more than 10,000 square feet of floor space at the bottom of the trenches, the *Sampling and Analysis Plan* suggests only four samples to evaluate the nature and extent of contaminants of concern at depths greater than 15 feet below ground surface. That doesn't even equate

to a single sample for each of the five trenches. Again, no samples are proposed to evaluate residual plutonium 239/240 and americium.

The decision to not evaluate residual plutonium is in direct conflict with the wording in the ROD: “plutonium 239/240 levels will be assessed in accordance with a sampling and analysis plan.”

It is hard to understand how the remedial decision for these waste sites could be driven by such limited sampling over such a large area. The potential to miss important contamination “pockets” is enormous. The other waste sites in this *Sampling and Analysis Plan* are proposed to be similarly under-sampled, which gives us little confidence that there will be a concerted effort made to find remaining hot spots.

We strongly suggest more definitive language for retrieval beyond two additional feet of soil within the High-Salt Waste Group and the development of a more robust sampling plan to ensure that hot spots are in fact located and remediated.

If you have any questions, I can be reached directly at 503-378-4906 or via e-mail at ken.niles@oregon.gov.

Sincerely,



Ken Niles
Assistant Director for Nuclear Safety

Cc: Oregon Hanford Cleanup Board
Steve Hudson, Chair, Hanford Advisory Board
Rod Skeen, Confederated Tribes of the Umatilla Indian Reservation
Russell Jim, Yakama Indian Nation
Gabriel Bohnee, Nez Perce Tribe