



CONFEDERATED TRIBES

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of the

Umatilla Indian Reservation

DEPARTMENT OF SCIENCE AND ENGINEERING

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EDMC

Craig Cameron
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, WA 99354

Subject: CTUIR U-Plant Comments for DOE/RL 2001-39 Rev 0 & DOE/RL
2001-11 Rev. 1

Dear Mr. Cameron,

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Department of Science and Engineering (DOSE) is in receipt of the Department of Energy's Focused Feasibility Study (FFS) for the Canyon Disposition Initiative (CDI) (221-U Facility). The CTUIR DOSE submits the following comments, which are similar to comments previously filed on the FFTF Decommissioning EIS Scoping NOI. A paper copy will follow.

Our analysis of the alternatives indicates that Alternative 1 (remove, treat, dispose) is by far the most logical has the lowest lifecycle costs, uses the least clean fill, is most permanent, and protects Tribal and public health the most.

The summary document (DOE/RL-2001-29, Rev 0) does not mention Tribes or Treaty rights. It refers to HAB advice, but completely ignores Tribes. HAB advice is not the same as government-to-government consultation, which is required in the DOE American Indian (AI) Policy. The AI policies of all the other federal agencies including USEPA have this type of language.

We look forward to ongoing discussions about the vision for the remedial actions in the central plateau. We would like to coordinate with you on this topic prior to us setting up a government to government meeting with the CTUIR committee on Science and Engineering. If you have any questions please do not hesitate to call Dr. Barbara Harper or Althea Huesties Wolf of my staff at 541-966-2400.

Sincerely,

Stuart Harris
Director
CTUIR Department of Science and Engineering

WINFORD PROJECT OFFICE

FEB 17 2005

U.S. EPA

CTUIR Core Values for the Central Plateau

This 221U FFS is intended to serve as the prototype closure for the other canyon facilities in the central plateau. Therefore, we also have to evaluate DOE's preferred alternative in the context of an integrated or cumulative picture for the entire Central Plateau.

Our core values and principles are:

1. Comply with the Treaty of 1855, which reserves rights of access and use across all of Hanford, including the Central Plateau. The NEPA process cannot be used to break Treaties or reduce Treaty rights.
2. Protect human health and the environment as tribal members use their resources and exercise their rights. This means using the CTUIR exposure scenario for risk assessment and for establishing remedial goals and cleanup levels. This also means that a Land Use EIS cannot be used to undermine CERLCA land use requirements. We have not accepted industrial cleanup levels as the PRG for the Central Plateau.
3. If baseline conditions cannot be regained or restored, they will be the subject of Natural Resource injury assessment.
4. Institutional controls cannot be relied on to protect human health and the environment for longer than 50 years. Engineered barriers cannot be relied on longer than one *demonstrable* design life. Both kinds of control are de facto proof of natural resource injury and lost use during their use.
5. The CERLCA criteria of permanence and retrievability must be carefully defined. To us, "permanence" means permanently safe, not permanently entombed. Entombment is irretrievable, and results in permanent loss of access and use of natural resources, which is one of the definitions of natural resource injury.
6. All caps and barriers must meet near-surface disposal criteria, including external dose rates, liners and leachate collection, erosion prevention, and infiltration (including the umbrella effect). All near-surface waste must meet land disposal and hazardous waste identification rules. All containment must be demonstrated to remain effective for as long as the waste remains intrinsically hazardous and as long as the time period required for radioactive materials to decay to levels that do not present a significant to tribal health and the environment.
7. All long-term legacy or stewardship plans (such as long-term groundwater monitoring, barrier maintenance, and so on) must be funded *in full* before delisting can occur. Long-term remedial measures demonstrate natural resource injury. However, establishing a permanent (i.e., front-end funded) legacy program with the Natural Resource Trustees would be a mitigative measure.

8. Life cycle risks and costs need to be well-studied. Life-cycle risk profiles¹ for each type of risk (tribal, public, worker, ecological, economic, cultural/social) should be developed. Worker dose is not an acceptable excuse to avoid cleanup. Worker dose limits will not be exceeded by law, whereas tribal or public/intruder risk has different attributes of knowledge, protection, willingness, equity, and occupational dosimetry.
9. Worker doses are not an excuse to avoid remediation. Worker doses will not exceed occupational limits by law – this is why dosimetry is performed for workers. The worker acceptable risk ceiling is 5 Rads per year, by DOE's own Directives. This is equivalent to a public acceptable risk ceiling of 10^{-6} (Tribes), 10^{-5} (MTCA) or 10^{-4} (EPA). Therefore, as long as ALARA is an operational principle along with the occupational dose limit, worker risk is not a decision criterion. The proper way to compare worker and public risk is to define the acceptable risk ceiling for each, and then to design the project so that neither limit is exceeded. Anything under either limit is therefore acceptable by definition and ceases to be a decision driver. The cost associated with preventing excessive worker doses is simply part of the cost of the project, the same as designing a remedy to prevent excessive tribal/public/intruder dose.
10. Ecological and cultural impacts of contamination versus remediation must be formally evaluated in a report. If it is determined that physical disturbance of excavation would be unacceptable, other alternatives must be considered, including non-intrusive decontamination or lateral drilling. Natural resource injury is not alleviated merely because physical disturbance is too great to be selected as a remedy.
11. The impacts of obtaining clean fill or borrow material cannot be designated an I&I commitment of natural resources and therefore written off as acceptable or 'free.' This includes borrow pits, institutional controls, visual resources, land transfer, land use designation, and any other natural or cultural resource impact.
12. Implementation of a remedy selected by regulators in a Record of Decision and delisting of a site or partial site from the NPL does not relieve DOE of its Natural Resource Trusteeship or injury and damage assessment requirements.

The Central Plateau picture is becoming clearer, as illustrated by the Fluor document, "Plan for Central Plateau Closure" (CP-22319-DEL, Rev 0). The overall central plateau "planning basis" is actually a serious decision document, despite claims to the contrary, because it is being used as a budget basis and also as a contract negotiation assumption. Thus, the items in this document will be written into contracts and budgets, which are the ultimate decisions that compete with Records of Decision for implementation.

The underlying assumption is that the central plateau will remain a near-surface radioactive waste disposal site forever with some industrial use nearby. Therefore, we pay close attention to the issues of life cycle costs and long-term risk profiles, original conditions, vadose and groundwater conditions, institutional controls, land use, and natural resource injury determination.

¹ S.G. Harris and B. Harper. "Characterizing Risks: Can DOE Achieve Inter-Site Equity by 2006?" Paper and presentation at Waste Management '98, Tucson, AZ, March 1998

Under Fluor's assumed closure strategy, the estimates for materials for capping, void fill, clean fill, and barriers comes to almost 45,000,000 cubic yards. If a football field is 30 x 100 yards, or 3000 yds², then this is 15,000 football fields 1 yard deep, or 1500 football fields 10 yards deep, or 150 football fields 100 yards deep. There would also be the equivalent of 300 pyramid-sized holes somewhere else. This leads the CTUIR-DOSE to ask; where will all the soil come from to construct such colossal monuments? Will all the soil come from the ALE soil-retrieval site?

U Zone Plans

The U Plant zone contains the U Plant Canyon (221U), the 224U building, 31 other structures, 52 waste sites (such as cribs and trenches), and 16 wells.. Elevated levels of Tc99 and uranium are present in groundwater, and there is still a large inventory in the vadose zone beneath the cribs and trenches. Pump and Treat actions are operating adjacent to U Plant. There are also underground or above-ground electrical, water, sewer, and communications lines.

The Fluor document assumes that there will be 5 barriers for permanent restricted access, and 150 years of institutional controls for other areas. It also assumes that the U plant will be remediated as follows:

- Remove contaminated piping and ductwork,
- Void-fill below-ground structures,
- Put a grout cap inside the building over the deck,
- Demolish the walls and place them over the grout-capped deck,
- Demolish adjacent structures to slab and use the rubble as part of the cap material where contamination remains,
- Cap the entire canyon, and cap other waste sites and structures with 4 other caps.
- Cribs and trenches will be capped
- Some waste sites will be excavated, some capped, and some left to attenuate over 150 years.
- The total cost is estimated at \$171,123,000.
- The total barrier volume is 545,000 m³.

Specific Comments on DOE/RL-2001-29, Rev 0).

Land Use. The CTUIR does not "acknowledge that some waste within acceptable levels will remain in the industrial-exclusive core zone." This section needs to be rewritten to acknowledge that Treaty rights exist for all of Hanford, including the central plateau.

Human Health Risk. No mention of Tribal use, and no evaluation of tribal risks using the CTUIR exposure scenario. This is the only program at Hanford that is not using our scenario to evaluate risks. Industrial cleanup levels result in a de facto institutional control, which is a natural resource injury. If the industrial risks are 10⁻² then the tribal risks are unity.

Pb. It is not true that lead cannot be evaluated as part of a risk assessment even though the IEUBK is used separately. Our board-certified toxicologist can do this. In any event, a soil lead level of >1000 ppm is tremendously high and must be remediated to WAC levels (which are not health protective, but better than 1000 ppm).

Ecorisk. The fact that the U zone is highly disturbed does not mean that there is no ecological risk. This concept is flawed.

RAOs. The RAOs are much too vague – they basically say DOE must protect human health and the environment. This give no guidance on how to balance competing risks, and no criteria for what is acceptable or not. There is no mention of integrated impacts within the central plateau, or between the central plateau and other areas at Hanford. There is no evaluation of the 9 CERCLA criteria.

PRGs. Again, the tribal scenario must be used to evaluate exposure, which was not done. Then, risk-based PRGs should be developed rather than single-contaminant, single-medium ARARs since there are multiple pathways of exposure and multiple contaminants. This is a perennial point of confusion that can be summarized by the fact that ARARs do not protect tribal health at all, and do not protect the health of the general population if there are multiple contaminants or pathways. The PRGs in Table 2 appear to be single-contaminant, single-pathway ARARs, not risk-based cumulative PRGs. There are no soil-based PRGs. The distinction between groundwater protection and river protection is not clear – why don't all the ARARs protect groundwater? Where is the groundwater point of compliance?

Specific Comments on Alternatives.

As with the HAB, our default alternative is to remove, treat, and dispose unless there is a compelling argument for selecting another alternative. In the FFS document, six alternatives (plus the no action alternative) are being considered. The overall Impression left to the CTUIR analysts is that Alternative 6 has already been selected and is being used as the budgetary and planning basis.

Alternative 1: Full removal and disposal.

Alternative 2: Decontaminate and leave in place.

Alternative 3: Entombment with internal waste disposal

Alternative 4: Entombment with internal and external waste disposal

Alternative 5: Close in place, fill with soil or concrete.

Alternative 6: Close in place, collapse structure, internal waste disposal, cap.

Alternative 1.

In the summary document, this alternative does not seem to be taken seriously and the site does not seem to be fully characterized. The document implies that we don't know whether this alternative could meet PRGs or not. Yet, at the January 27, 2005 meeting a cost analysis was done and this alternative would cost less in the long run, but DOE has not paid half their attention to this one, as they have on Alternative 6; which is presumably the "Preferred Alternative."

Alternative 2.

There is no discussion of this alternative. We concur with dropping this alternative.

Alternative 3.

This alternative would require 1,500,000 m³ of borrow material, but does not way whether PRGs could be met. The barrier would be reconstructed once, at 500 years (requiring another 1,500,000 m³ of borrow material and disposal of the material from the first barrier), for a total time of 1,000 years, at which time the material would still be

highly radioactive. Therefore, this alternative appears to fail the requirement to be safe for unrestricted use, including intruder and tribal risk, at 1,000 years.

Alternative 4.

Similar to alternative, but larger.

Alternative 5.

There is no discussion of this alternative. We concur with dropping this alternative.

Alternative 6.

This alternative would be smaller than alternative 3, since no additional waste would be disposed and the walls would be collapsed in place. However, this is also a perpetual-care solution, with barrier reconstruction at 500 years. This alternative also appears to fail the criterion of being safe for unrestricted use, including tribal and intruder risk, at 1,000 years.

DOE's analysis says that all alternatives except the No Action alternative would be protective of human health. However, this assumes that institutional controls will be effective, that the barriers will never fail, all associated remedies for waste sites will function as hoped, and that all materials will be decayed to safe levels in 1,000 years. We do not think that this assertion is supportable. Especially when DOE mentions in majority of the alternatives that, "The use of inert, uncontaminated rubble from other nearby CERCLA demolition activities... will be considered during remedial design," yet in an "Alternative Surface-Barrier Workshop" (11/13/04) it was noted that allowing stones greater than about two inches generated construction flaws and allows woody plants to break down barrier further.

Compliance with ARARs.

Since ARARs are not protective of tribal health, and are not protective of anyone's health due to multiple pathways and contaminants, the assertion that the alternatives comply with ARARs (and by inference projection of human health) is unsupportable. There is a statement on page 19 of the summary document that says "EPA and Ecology propose to use a risk-based determination for the purpose of demonstrating no unreasonable risk of injury to human health or the environment..." This statement seems to apply only to PCBs as TSCA waste, and not to other contaminants. The regulators should apply a risk-based (not standards based) criterion to the cumulative contaminants, not just to PCBs. Please provide supporting documentation that accounts for ARAR compliance.

Costs.

According to Table 4, Alternatives 1 and 6 are approximately the same cost (\$84M and \$67M, well within the usual Hanford uncertainty of cost overruns). Several very important cost savings are not accounted for in this analysis. Alternative 1 truly reduces risk while Alternative 6 relies on perpetual care and barriers. Alternative 1 is a permanent final remedy, while Alternative 6 requires continual O&M and barrier reconstruction. Alternative 1 uses much less backfill or barrier material than Alternative 6. Alternative 1 restores natural resource injury, while Alternative 6 perpetuates injury and will result in costly natural resource damages. Environmental justice impacts have not been evaluated

correctly; impacts to tribal uses and resources will be significantly more impacted by Alternative 6 than Alternative 1, and tribes are disproportionately affected by any residual waste and institutional controls. Cumulative effects would be much larger with Alternative 6 than with Alternative 1 because Alternative 1 would remove most of its impacts while Alternative 6 would leave a significant amount of waste in place. In the January 20, 2005 HAB meeting, lower costs leaned towards Alternative 1 as well.

A final note on the Alternatives; it appears that using DOE's and regulators' analysis, Alternative 1 meets RAOs and PRGs better than Alternative 6, and is also much cheaper over its life cycle.