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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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July 29, 2004

Mr. Stuart G. Harris, Director
Department of Science and Engineering
Confederated Tribes of the Umatilla Indian Reservation
73239 Confederated Way
Pendleton, Oregon 97801

Dear Mr. Harris:

Re: Response to Comments on Tri-Party Agreement M-45, Proposed Changes to Tank Waste Retrieval Milestones

61547

The Washington State Department of Ecology (Ecology) would like to thank the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Department of Science and Engineering (DOSE) for taking the time and effort to provide input on the proposed changes to the Tri-Party Agreement (TPA) for the M-45, Complete Closure of All Single Shell Tank (SST) Farms. Ecology would be happy to meet with CTUIR to discuss your comments and our responses to them. Both are included below.

Comment:

"We believe that the greatest challenge to tank farm closures is to integrate each closure into the overall central plateau end-state or "source term Section 3.0 [SST System Closure Regulatory Integration Strategy] discusses integration as a general requirement for tank closure, but without much detail. We probably cannot support the final closure of one tank at a time even if each tank is 99% retrieved. That is, unless there is a tangible and detailed Plateau-wide integration plan based on cumulative source terms and cumulative risk. We clearly support retrieval; however, final closure should not occur until we know that all the tank farms or the entire Plateau meets some yet to be defined cumulative risk-based criteria. This is necessary because we may need to return and retrieve a tank or tanks at some point in time.

Response:

Decisions related to closure of individual tanks will be interim decisions, while the final closure decisions are to be made at the Waste Management Area (WMA) level. The Tri-Parties are committed to conducting closure activities in a risk informed manner.

Closure decisions will incorporate risk from the tank or component under consideration, risk from sources immediately surrounding the facility, and risk from facilities further away.

Comment:

We support the requirement to meet the Hanford Site Groundwater Strategy as necessary but not entirely sufficient to protect human health and the environment. Integration must go much further and toward a truly multi-media, multi-contaminant, and multi-source assessment. Therefore, we cannot support the less than 99% retrieval, which would occur under United States Department of Energy's (USDOE) proposal to reclassify waste and leave large volumes grouted in place. We strongly urge Ecology to hold firm to its retrieval requirements.

Response:

The M-45-00 Milestone as it describes the Tri-parties commitment to the extent of retrieval remains unchanged and states "closure will follow retrieval of as much waste as technically possible, with tank waste residues not to exceed 360 cubic feet in each of the 100 series tanks, 30 cubic feet in each of the 200 series tanks, or the limits of waste retrieval technology capability, whichever is less." This modification to the TPA does not change this previously established criterion.

Comment:

We support Ecology in protecting the aquifer as a state resource. However, we strongly object to allowing USDOE to commit groundwater irreversibly and irretrievably with increased contamination due to solid waste and/or tank waste disposal. Groundwater is a trust resource of the CTUIR and the federal government and its agencies are obligated to protect such resources for the benefit of the CRUIR as well as for the general public.

Response:

Protecting and avoiding further contamination to groundwater is one of the major drivers behind the retrieval of the SST System. Ecology has also voiced concern in regard to USDOE's recent statement regarding the groundwater and do not believe USDOE has the ability to unilaterally make an "irreversible and irretrievable" commitment. Ecology will require USDOE to continue to perform groundwater remediation activities consistent with TPA, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and Resource Conservation and Recovery Act (RCRA) requirements. Ecology will continue to insist that USDOE implement its roles and responsibilities as a trustee of the natural resources associated with the Hanford Reservation and is required to work within the State and Federal legal and regulatory framework as demonstrated by this TPA change request.

Comment:

Section 2.1.3 [Tank Waste Retrieval Work Plans] includes risk-based metrics. We have several comments in this regard:

- The long-term human heath risks must be based not only on an intruder scenario, but also on occupational, residential, and Native American scenarios. Because the tank waste will be hazardous essentially forever, the full range of scenarios must be applied to post-retrieval conditions.

Response:

The risk assessment discussed here is a preliminary risk assessment for the sole purpose of supporting retrieval decisions. Presently, it includes a calculation of the concentrations of the primary groundwater contaminant levels, groundwater risks from hazardous constituents, and carcinogenic constituents for both industrial and residential scenarios. We agree with the need for the calculation of the impacts to other potential land use scenarios, including Native American Scenarios. The results for these scenarios can be found in the risk assessments submitted in support of closure actions covering post retrieval conditions.

- The baseline or pre-retrieval risk assessment must use the same scenarios, including the CTUIR exposure scenario (upon update). We are aware that Model Toxic Control Act (MTCA) does not include this scenario, but it is clearly essential whenever there are treaty-reserved rights. Further, the State of Washington has confirmed their trust responsibilities in the Centennial Accord.

Response:

The purpose of this pre-retrieval assessment is to aid in making "on the spot" decisions during the retrieval operations due to unforeseen challenges such as the discovery of a tank leak. It is meant to deal with "immediate and short-term impacts" not long-term impacts. Scenarios to be used with WMA risk assessments are described in HNF-SD-WM-TI-707, 2003, Exposure Scenarios and Unit Dose Factors for the Hanford Tank Waste Performance Assessment, Rev 3**. Currently, a general Native American scenario is described in the document. Should the CTUIR develop a specialized scenario, it will be evaluated for inclusion also.

- We support the use of the fence line for the WMA boundary rather than the 200 Area boundary of the Central Plateau boundary.

We are still concerned regarding the method for closing individual tanks, individual tank farms, or the entire 200 East and 200 West areas, as well as developing a pan-plateau source term that includes Environmental Restoration and Disposal Facility (ERDF) and US Ecology. We have not seen a plan for this level of integration, and we are unsure as to whether the Composite Analysis will provide the level.

Response:

Currently, the WMA risk assessments examine several potential points of compliance: the edge of the WMA (as noted above), the edges of the 200 Areas, and a point located near the Columbia River prior to the mixing zone. Multiple points of compliance are usually included to allow risk to be evaluated in a broader perspective i.e. to facilitate "risk informed" decisions. Also, the WMA risk assessments and the Tank Closure Environmental Impact Statement (EIS) evaluate the impacts from other sources on the Central Plateau that "cumulatively" impact the receptors at the points of calculation mentioned above.

- We wish to note that radiological and chemical risks must be summed which further underlines the need for a multi-contaminant risk-based approach and not simply by using a single constituent approach.

Response:

Estimates of Incremental Lifetime Cancer risks include risks associated with chemical and radiological contaminants. This change package does considerably expand the number of contaminants to be used in the calculation of risk metrics. Primary indicator contaminants must account for 95% of the impact.

Comment:

Section 2.3 (soils) and 2.4 (groundwater) are unclear as to whether closure will be based on a multimedia approach. It is not enough to simply meet drinking water standards (which are not based on multimedia exposures such as drinking water plus irrigation plus soil-based exposures).

For example, there is a difference between standards-based closures and risk-based closures. (1) Standards-based closures simply meet standards for one contaminant at a time in one medium at a time. (2) Risk-based closures are based on multi-contaminant, multi-pathway exposures, and are much preferred over simply meeting standards. However, the risk-based closures must use the proper exposure scenarios, in particular the CTUIR scenario.

Along these same lines, we would like to be included in the Data Quality Objective (DQO) process and Sampling and Analysis Plan (SAP) development, especially for post-retrieval and closure verification sampling. We will be looking for data that will be needed in the risk-based closure verification and long-term multi-media (soil plus groundwater) risk assessments using the CTUIR exposure scenario.

Response:

At the current time, estimates of both "standards-based" and "risk-based" indicators of risk are being calculated. The final decisions on this issue will be evaluated during the review and approval of the Closure Plans.

The CTUIR will be invited to all future DQOs related to Sampling and Analysis Plan (SAP) development.

Comment:

We would like to better understand the general rationale for sequencing retrieval and vitrification. We would also like to confirm that Ecology is standing firm on the 99% retrieval requirement even if USDOE request variances to leave more waste in tanks or continues its attempts at High Level Waste (HLW) reclassification.

Response:

Retrieval sequencing must meet a number of criteria to be effective. These criteria include reduction of risk, generating appropriate waste for operating the Waste Treatment Plant, Double Shell Tank (DST) space management, resource leveling, closure of the first WMA, and other operational considerations. The intent of the changes to this milestone is to improve efficiency of the retrieval process while allowing flexibility needed to respond to operational problems as they develop, and maximizing the use of the limited DST space.

Ecology has made no change in its commitment to SST retrievals to the limit of technology or to 360 cubic feet, whichever is less as stated in an earlier response. The TPA Appendix H describes the steps to process a "waiver" based on Office of River Protection's (ORP) demonstration of reaching the limits of the retrieval technology. Ecology will consider such waiver requests according to this TPA requirement.

Comment:

We should note that on a recent visit to the tank farms, the guide very carefully used the terminology Low Activity Waste (LAW) rather than Low Level Waste (LLW). Does USDOE believe it will succeed in reclassifying waste? If so, will the intention still be to retrieve 99%?

Response:

USDOE is required to meet its commitment in the TPA to retrieve as much waste as technically possible, with tank residues not to exceed 360 cubic feet in each of the 100 series tanks, 30 cubic feet in each of the 200 series tank, or the limits of waste retrieval technology capability, whichever is less", regardless of the classification issue.

Again, thank you for your comments on this important issue. We look forward to ongoing dialogue about this and other Hanford cleanup issues.

If you would like to set up a meeting for further discussion, please contact me at (509) 372-7891.

Sincerely,

Laura Cusack
Tank Waste Treatment and TPA Section Manager
Nuclear Waste Program

LC:jc

cc: Jim Rasmussen, USDOE
Stuart Harris, CTUIR
Pat Sobotta, NPT
Russell Jim, YN
Todd Martin, HAB
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Administrative Record: M-45
Environmental Portal