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June 9, 2006

Mr. Cliff Clark  
U.S. Department of Energy  
P.O. Box 550, Mailstop A3-04  
Richland, Washington 99352

Dear Mr. Clark,

I am writing on behalf of Columbia Riverkeeper (CRK) to comment on the Department of Energy's (DOE's) Draft CERCLA Five-Year Review Report for the Hanford Site (Report). CRK appreciates the chance to comment on the Report, but has grave concerns as to its results. While we recognize that the cleanup of such a massive waste site is extremely complex and not easily accomplished, the potential environmental consequences dictate that the utmost care be exercised in its undertaking.

As a preliminary matter, CRK incorporates by reference the May 24, 2006 comments of Heart of America Northwest and the June 2, 2006 comments of the Hanford Advisory Board. We offer the following additional comments:

### **Introduction**

As the Report's Executive Summary states, "The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Executive Order (EO) 12580 mandate that DOE, as the lead federal agency, must conduct response actions no less frequently than once every five year [sic] **to determine whether the selected remedy(ies) at a site is/are protective of human health and the environment.**" (Emphasis added.)

CRK believes that the Report fundamentally misses the purpose, scope, and depth of an adequate Five-Year Review. The intent of the Presidential Executive order was for the Five-Year Review to not only assess current conditions, but to project whether the current cleanup and remediation strategy will ultimately meet the long-term goals of cleanup. In other words, this is an opportunity to take a hard look at the existing situation and ask "Where are we? Are we headed in the right direction? Will we meet our goals? Will the cleanup that we are performing give us the results that are required by law? In essence, will the cleanup 'protect human health and the environment'?" For example, in the River

Corridor, where unrestricted use is the desired end-use level, will we achieve that level of protectiveness?

Instead, DOE's approach was to limit the assessment of protectiveness to the current state of remedial actions. DOE bases its assertion that the current protectiveness goal is met largely on the existence of institutional controls (IC) presently in place that limit exposure in the here and now. This Five-Year Review can trigger corrective actions, and it should trigger amendments to final decisions and future documents. But it will not do so if the focus is on the assessment of the current situation, ignoring the likely destination in view of the observed trajectory of the cleanup. Basically, DOE's attitude seems to be, "We have some problems now, but we think everything will turn out alright." Thus, the Five-Year Review falls severely short of identifying shortcomings in the cleanup plan that will hinder or slow the ability to meet the plan's goals in a timely and cost effective manner. The review should directly address public, Tribal, agency, and other stakeholder views and concerns about the protectiveness of remedies and the possible failure of institutional controls. As a start, DOE should clearly define what the word 'protective' means.

The Summary goes on to list the three questions on which the review focused:

1. Is/are the remedy(ies) functioning as intended by the decision document?
2. Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?
3. Has any other information come to light that could call into question the protectiveness of the remedy?

### **Functioning Remedy?**

The answer to the first question, whether the remedies are functioning as intended, likewise depends on where the focus is. The Records of Decision (RODs) are a means to achieve the end-state of a clean environment. That is the overarching purpose of the cleanup. If observations lead one to suspect the current remedy will not achieve this result, then corrective actions and adjustments to the original plan must be made in order to put the project back on track toward the desired goal. If the attitude is, "Well there are a few problems now, but they will likely be corrected by the time everything is complete, therefore it is not necessary to alter the course," then the goal cannot be met. When the plan is not functioning as expected, the question should not be *whether* to alter the course. Rather, it should be *how much* to alter the course.

As an example of how the Five-Year review fails in this respect, the 100B/C Area source removal did not lead to reduced concentrations of some contaminants as expected. According to the Report, several wells in the 100-B/C area showed sharp spikes in tritium concentration in the late 1990s, with subsequently declining levels. (*See Report at 1.25.*) Then again in 2005, a well between the reactor buildings and the retention basins showed

a spike of 161,000 pCi/L, 8 times the drinking water standard of 20,000 pCi/L. The Report does not specify the magnitude of the 1990s spikes, but states that there was a pattern of spikes throughout the 100-B/C area, and indicates they were significantly higher than the 2005 spike. The cause of the peaks is unknown. Yet the Report goes on to conclude that “No issues or actions specific to the 100-B/C Area were identified during the review.” This simply defies logic. Nitrates and antimony have also been identified as contaminants of concern in this area by the initial ecological risk assessment, another reason why the 100-B/C Area remedy is not protective.

Finally, when assessing protectiveness, the DOE leans far too heavily on current institutional controls at the site. Exposure assumptions cannot be based on a fallacious sense of current protectiveness. They must be grounded in the future end state goal of cleanup and provide a real means of controlling exposure. They do not. For instance one example of institutional controls is signage that warns those who pass by to keep out of a specific area due to the presence of a hazard. This is no control at all if the species passing by is other than human. Even when it is the human species passing by, there is no guarantee that the sign will be heeded.

A recent example of the fact that institutional controls are presently failing is given in the context of protection of endangered species from human encroachment at the Hanford site. A sign was placed in the middle of the road to prevent entrance to a bald eagle nesting site: “ALL ACCESS PROHIBITED.” Within the space of only two months, a photo shows the sign had been ignored repeatedly to the point that a new roadway existed; it simply curved around the sign. (*See* June 4, 1999 email correspondence of Brett L. Tiller, Battelle Pacific Northwest National Laboratory.)

DOE’s reliance on these sorts of controls is a psychological smoke screen. It gives one a false sense of security. Furthermore, there is no strategic plan in place to fund these sorts of controls in the long term, even assuming they were effective in the short term. DOE simply passes the problem on to the Office of Legacy Management, which has no funding available to maintain these controls and is not a part of the decision-making process that selects the controls as a remedy. Similar problems are found in the idea of capping being a protective remedy.

Moreover, it is impossible for the DOE to assess protectiveness for the Columbia River Corridor, as it has not yet completed the ecological risk assessment for that Corridor. It cannot be stated that the current cleanup plan is protective when contaminants are being released to the River on a daily basis and these contaminants are being taken up by various species. If DOE is to ensure protectiveness as defined by the Yakama and Nez Perce Tribes, then these releases must be eliminated. Otherwise it ignores what is required by law under CERCLA and the required Trust Responsibility to protect cultural and natural resources. 40 C.F.R. § 300.615.

## **Changing exposure assumptions, toxicity data, cleanup levels, and remedial objectives?**

In answering the second question, whether the exposure assumptions, toxicity data, cleanup levels and remedial action objectives used to select the remedy have continued validity, CRK reiterates a portion of the comments of Heart of America Northwest. Those comments, already incorporated herein, illustrate how the cleanup fails to reassess assumptions and toxicity data.

In the past year a new, formal scientific consensus on risk from exposure to radiation was issued by the National Academy of Sciences: Biological Effects of Ionizing Radiation VII (BEIR VII). The BEIR VII consensus is that exposure to fifteen millirems of radiation, the level previously relied upon by DOE as protective and on which cleanup decisions were based, would result in far more cancers than previously expected. Environmental Protection Agency (EPA) rules for CERCLA Five-Year Reviews require that this sort of new data be considered in determining whether an adopted remedy will remain protective. It is now known that the selected remedies will meet neither Washington State Law, nor CERCLA parameters governing carcinogen risk assessment. Yet DOE has maintained the data was outside its scope of review.

## **New information?**

As to the third question, whether any information has come to light that could call into question the protectiveness of the remedy, CRK offers the following items:

- A 300 Area City of Richland study funded by DOE. This study finds that the land could never be used for industrial use only, because a private company would never assume liability for it. It was stated that the area should be a multi-use site and should be cleaned up for unrestricted use.
- Other information exists about the 300 Area showing shoreline contamination of clams, riparian zone contamination, and ongoing groundwater contamination.
- United States Geological Survey (USGS) chromium study results show that 100% of samples taken to assess genetic damage in fall Chinook salmon show such genetic damage.
- Ongoing negotiations with Priest Rapids dam operators may affect fluctuations in the level of river water. Such fluctuations can cause more contaminants to enter the river from the vadose zone. Yet no corrective action for treatment or removal of the deep vadose contamination is cited.

If new information has come to light, DOE must assess this new information in light of the cleanup goals and the intent of the RODs. So far, DOE has not done so.

## **Miscellaneous**

- Failure of DOE to assess cumulative effects of multiple contaminants is unacceptable.

- 150-year planning assumptions for leaving groundwater contaminated violates State law, federal law, and the Trust Responsibility. DOE has no authority to take a state water resource.
- The Report relies too heavily on drinking water standards as an indication of protectiveness and completely ignores the phenomenon of bioaccumulation of contaminants.
- The Report is prone to bias in that DOE is evaluating its own work, and would have a tendency to express the progress in a more favorable light. An independent evaluation would likely be more credible.

CRK again expresses appreciation for the chance to comment and implores DOE to seriously consider these and all other comments submitted in preparing the Final Five-Year Review Report.

Sincerely,

Brent Foster  
Executive Director and Riverkeeper  
Columbia Riverkeeper

P.S. It would make the reading of future DOE draft reports much easier if the shadow “DRAFT” were not printed across each page.