



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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May 14, 2004

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EDMC

Bryan Foley  
U.S. Department of Energy  
P.O. Box 550, A6-38  
Richland, Washington 99352

Re: U.S. Environmental Protection Agency (EPA) Comments on "Draft A Feasibility Study (FS) and Proposed Plan for the 200-TW-1 Scavenged Waste Group, 200-TW-2 Tank Waste Group, and 200-PW-5 Fission Product Rich Waste Group Operable Units"

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Dear Mr. Foley:

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We have reviewed Draft A of the subject documents and assembled comments in three different areas: 1) key issues that need to be resolved before the documents can be revised; 2) key questions the Proposed Plan should clearly answer; and 3) proposed modifications/revisions to the revised Feasibility Study to support the Proposed Plan. In addition, these comments are being provided in light of the proposal discussed on April 22, 2004 and subsequent agreements made that a new Focused Feasibility Study (FFS) and Proposed Plan will be generated to support an accelerated decision on the 28 waste sites in the BC Cribs and Trenches Area and that the FS and Proposed Plan(s) for the remaining 51 waste sites in the 200-TW-1, 200-TW-2, and 200-PW-5 Operable Units will be placed in abeyance until after a ROD for the BC Cribs and Trenches Area is issued.

Key questions that need to be resolved before the documents can be revised

There are a several key questions EPA and DOE have to resolve before these documents can be revised. These are substantial issues that impact the methodology and approach toward key aspects of the FS and Proposed Plan. These issues are summarized below to facilitate their resolution. We recommend a meeting be held to identify options and a path forward before any document revision takes place.

1. **Agreement on exposure scenario used to evaluate baseline risks and protectiveness of proposed alternatives.** Key assumptions of the exposure scenario that supports the end state (e.g., industrial) need to be agreed upon including:
  - a. What dose standard is being used to evaluate risk for different receptors (e.g., 500 mrem, 100 mrem, 15 mrem)?
  - b. What timeframe will this be applied to (e.g., 50 years, 150 years, 500 years, 1000 years)?

- c. What alternative exposure scenarios will be evaluated (e.g., intruder scenario, recreational user, etc...) and how will they be used (e.g., as basis for remedy selection decision, for comparative purposes, etc...)?

**2. Agreement on how to approach identification and evaluation of cleanup alternatives.** Key questions that need to be addressed include:

- a. How will this remedy address the CERCLA statutory preference for treatment and EPA's subsequent regulatory expectation in the National Contingency Plan (NCP) to treat principal threats wherever practicable. ("In general, principal threat wastes are those source materials considered to be highly toxic or highly mobile which generally cannot be contained in a reliable manner or would present a significant risk to human health or the environment should exposure occur. Conversely, low-level threat wastes are those source materials that generally can be reliably contained and that would present only a low risk in the event of exposure. The manner in which principal threats are addressed generally will determine whether the statutory preference for treatment as a principal element is satisfied.") What criteria should be used to define principal threats? Are there technologies that were screened out that might be worth considering for targeted principal threat areas? Should a Remedial Action Objective be added to "Treat and/or remove principal threat wastes identified during implementation of remedy?"
- b. How should worker risk associated with implementation of remedial actions be evaluated, what scenario(s) should be used, is quantification of these risk estimates appropriate, and how should this information be incorporated into the remedy selection process?
- c. Is there enough site characterization data from representative sites or technology implementation information to make a remedy decision for the entire area or should certain aspects of the preferred alternative be deferred to a subsequent post-ROD site characterization effort and/or treatability study?
- d. If capping is the preferred alternative for these sites, additional evaluation needs to be performed to demonstrate that the cap will achieve the remedial action objectives (e.g., to prevent the migration of contaminants through the vadose zone to groundwater and the Columbia River such that concentrations reaching groundwater and the river do not exceed ARARs or risk-based criteria and will result in no further degradation (i.e., residual contamination will not cause an exceedence of Maximum Contaminant Levels (MCLs) beneath the waste site)).

Key questions the Proposed Plan should clearly answer

In addition to the above policy questions, EPA believes that the Proposed Plan should clearly answer the following questions for the public:

1. What exposure scenario is being used to evaluate baseline risks and remedy protectiveness?
2. What are the sensitive parameters and how is uncertainty handled in the risk assessment?
3. Does the exposure scenario change over time?
4. Are other exposure scenarios evaluated, and if so, how are the results of these risk evaluations factored into the remedy selection process?
5. How is intruder risk factored into the remedy selection process?
6. How many sites with real site characterization are being used as the basis for this decision and is there a clear rationale for extrapolating the data to the other waste sites?
7. What type of data (site characterization, treatability tests, etc...) is going to be gathered post-ROD and how will this data be used?
8. Is there a clear technical basis for establishing the effectiveness of the capping remedy on protecting groundwater quality and ecological receptors?
9. Are remedy implementation risk estimates (i.e., worker risk) realistic given ALARA principles and safety procedures guiding cleanup?
10. Are there other technologies that can be used to safely immobilize or solidify highly radioactive areas (or layers)?
11. How will DOE ensure the effectiveness of institutional controls after 150 years? 500 years?
12. How is this cleanup decision integrated with associated cleanup decisions for underlying deep vadose zone contamination and groundwater contamination?

#### Proposed modifications/revisions to the revised FS to support the Proposed Plan

Besides removing references to the 51 remaining waste sites in this and the other Operable Units, certain changes will need to be made to the Feasibility Study to support these revisions in the Proposed Plan. Here is a preliminary list of changes to consider for the revised document:

- Section 1: Include a figure that clearly identifies the waste sites contained in the BC Cribs and Trenches area and their "site category" (e.g., crib, trench, pipeline, tank). Include another that places this area in the context of other major 200 Area facilities and long-term waste management areas (e.g., US Ecology, ERDF).

- Section 2: Strengthen discussion and depiction of representative site data. Include a figure that clearly depicts where each site is and which "analogous sites" they apply to. In addition, if there are analogous sites with data that are not considered to be "representative sites" (pursuant to previous agreements), please identify them as "analogous sites with supplemental data" and describe the site characterization data associated with them. Please provide a generic cross section for all site types in the BC Cribs and Trenches Area. This information can be summarized in one figure (See Figure 4 on page 17 of the 300-FF-2 ROD). Should discuss and depict suspected locations of principal threat materials (i.e., if it exists, here is where it would be located). Should define criteria for identifying principal threat material as well.
- Section 3: Add remedial action objectives (RAOs) consistent with RAO 3 and RAO 5 from the 300-FF-2 ROD. Add RAO for principal threats as discussed above. Format and footnote RAOs consistent with Table 4 in 300-FF-2 ROD. Remove 500 mrem/year dose column from PRG tables. Need to discuss methodology for establishing PRGs for groundwater and river protection (e.g., should RESRAD be used for establishing PRGs if more sophisticated model that incorporates vadose zone transport is going to be used to establish protectiveness of capping remedy)? Need to identify PRGs for technetium-99, tritium, and uranium.
- Section 4: Need to reevaluate technologies for small quantity targeted approaches (i.e., principal threats).
- Section 5: Same comment as section 4.
- Section 6: Need to discuss methodology for estimating worker risk during remedy implementation. Need to develop a better cost estimate summary table (see Tables 6-1 from the 300-FF-2 FFS and Tables 9 and 10 in 300-FF-2 ROD). Need to revise risk assessment and intruder risk discussions pursuant to outcome of policy issue discussion. Need to add discussion (or new appendix) to demonstrate effectiveness of capping remedy in achieving RAOs.
- Section 8: Need to revise to address outcome of policy issue discussion. Specifically, requirements to address principal threat material and requirements for post-ROD site characterization and treatability investigations (if appropriate). If a treatability test will be part of the remedy, then an appendix should be added to define the workplan. An appendix should also be added to provide the basis for post-ROD site characterization requirements.
- Appendix C: Risk assessment methodology should be modified pursuant to policy discussions. Additional figures should be provided to illustrate the reasonable maximum exposure scenario used for decision-making.
- Appendix D: Cost estimates should be revised pursuant to outcomes of policy discussions. EPA would also like to be briefed further on the basis for key quantity and unit cost assumptions to determine if additional modifications are required.

- Appendix E: Intruder risk assessment methodology should be modified pursuant to policy discussions. Additional figures should be provided to illustrate the reasonable maximum exposure scenario used for decision-making.
- Potential new appendices: Technical demonstration of capping remedy's ability to achieve RAOs. Basis for post-ROD site characterization requirements. Treatability test workplan for post-ROD remedy evaluation requirements (if appropriate).

Please contact Mike Goldstein at (509) 376-4919 if you have any questions about these comments.

Sincerely,

A handwritten signature in black ink that reads "Mike Goldstein". The signature is written in a cursive style with a long horizontal stroke at the end of the name.

Mike Goldstein  
Project Manager

cc: Craig Cameron, EPA  
John Price, Ecology  
Mark Benecke, FH  
Administrative Record: 200-TW-1 Operable Unit