

HANFORD ADVISORY BOARD

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Advising:

US Dept of Energy
US Environmental
Protection Agency
Washington State
Dept of Ecology

June 5, 2009

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Re: Environmental Restoration Disposal Facility (ERDF) Expansion – Record of Decision (ROD)

Dear Messrs. Brockman and Faulk,

Background

ERDF plays a key role as the disposal site for wastes generated by cleanup actions from all over Hanford, most especially the exhumation of burial grounds and waste sites, and including debris from demolition of structures along the Columbia River. Information regarding the ERDF facility is more fully described in the fact sheet entitled “Proposed Amendment to the Environmental Restoration Development Facility Record of Decision.”

The capacity of ERDF to receive contaminated materials is based on facility design, how it releases contaminants, how people and the environment are exposed, and what the likely risk is from these exposures in the future.

The risks are assessed in two ways: via an Environmental Protection Agency (EPA) risk assessment as part of the Remedial Investigation/Feasibility Study (RI/FS) performed to site ERDF; and via a Department of Energy (DOE)-directed performance assessment (PA). The RI/FS and PA use somewhat different bases for evaluating risk, including differing acceptable levels of radioactive contaminants in groundwater, different timeframes and points of compliance, and other parameters.

The individual waste limits in the ERDF Waste Acceptance Criteria (ERDF-WAC) are established from the risks estimated in the RI/FS risk assessment and the PA, with specific limits dictated by which assessment indicates the need for the lower required limit to satisfy risk concerns.

It appears likely that ERDF’s ultimate capacity may be limited by the inventories of certain key radionuclides (uranium, technetium and carbon-14), rather than the volume of wastes disposed, with a consequence that acceptance of wastes containing these radionuclides may be limited. ERDF has, to date, filled a small fraction of the total possible size (6 of 28 cells, about 21 % of planned size)

EnviroIssues

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originally sited. The current inventories of these key radionuclides already in ERDF exceed 60-70% of the ultimate capacity of ERDF based on the current PA.

Current understanding of the fate and transport of water and wastes through the soil at many sites across Hanford (most recently at the 200-BP-5 Operable Unit) has changed since ERDF was sited. It has become clear that anisotropy (preferential pathways) exists in the soils under and adjacent to ERDF and that these pathways may influence how rapidly any contaminants released from ERDF will reach groundwater, and may change the estimation of the risks these contaminants pose. Moreover, this complex fate and transport may necessitate additional groundwater monitoring wells in conjunction with extensive below-cell leak detection to ensure that any releases from ERDF that might reach groundwater are detected.

When ERDF was sited, the Tri-Party Agencies committed to mitigating for the environmental impacts caused by building ERDF, and deferred the specific actions to two future documents – the Biological Resources Management Plan, and the Biological Resources Mitigation Strategy. Low mitigation ratios and poor success of the most recent mitigation have resulted in substantial net loss of habitat from construction of ERDF, and represent injury to natural resources, which can increase the cost of operating ERDF and may require further mitigation.

Advice

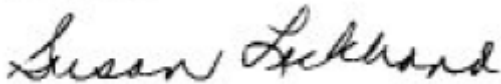
The Board recognizes the critical role of ERDF for managing Hanford cleanup waste and supports ERDF expansion, so long as it can be done in a manner that is protective of human health and the environment in the long term. Specifically:

- DOE should complete and update the ERDF performance assessment in consultation with EPA and the Washington State Department of Ecology (Ecology), in an open and transparent process, using the new understanding of transport through the vadose zone, and solubility and mobility of uranium.
 - The PA should not be delayed while awaiting completion of the Tank Closure & Waste Management Environmental Impact Statement (TC&WM EIS), nor be dependent on the TC&WM EIS.
 - In preparing the PA, DOE should consult with EPA and Ecology to ensure inclusion of, and consistency with, the technical requirements in the environmental regulations; for example, including the points of compliance and Maximum Contaminant Levels for constituents in groundwater.
 - The Tri-Party Agencies should work together to evaluate the modes and consequences when ERDF's liner and barrier systems ultimately release wastes to the vadose zone and to groundwater.
- Based on these evaluations, the Tri-Party Agencies should implement actions and/or changes in the design of the facility needed to mitigate these future releases. These actions could include the treatment of wastes entering the facility to minimize future contaminant releases, thus ensuring long-term protection of human health and the environment.

- The Tri-Party Agencies should create an inventory tracking and planning tool for assessing all site wastes that are intended to be disposed in ERDF and those key contaminants (e.g. technetium-99, carbon-14, iodine-129 and uranium) which may limit the contaminant inventory allowable in ERDF. This tool should provide a running summary of how much of ERDF's capacity has been consumed and how much remains available for all waste and for each key contaminant. To ensure environmental protection, DOE should create a system model to predict when treatment or development of treatment of subsequent incoming key contaminants should be performed. For example, for technetium, additional treatment technologies may need to be developed.
- The Board advises that the Tri-Party Agencies should use the formal ROD amendment and comment process for any expansion of ERDF that involves substantive changes to the facility design.

The Board supports the proposal by the Tri-Party Agencies to allow planned expansion of ERDF within the design basis as capacity is needed, provided the issues noted above are addressed.

Sincerely,



Susan Leckband, Chair
Hanford Advisory Board

This letter represents Board consensus for this specific topic. It should not be taken out of context to extrapolate Board agreement on other subject matters.

cc: Shirley Olinger, Manager, U.S. Department of Energy Office of River Protection
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