



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

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OFFICE OF  
SOLID WASTE AND EMERGENCY  
RESPONSE

**MEMORANDUM**

**SUBJECT:** National Remedy Review Board Recommendations for the Lawrence Livermore National Laboratory Site 300

**FROM:** Bruce K. Means, Chair   
National Remedy Review Board

**TO:** Dan Meer, Chief  
Federal Facilities Cleanup Branch, Superfund Division  
EPA Region 9

**Purpose**

The National Remedy Review Board (NRRB) has completed its review of the proposed Superfund cleanup action for Site 300 of the Lawrence Livermore National Laboratory (LLNL). This memorandum documents the NRRB's advisory recommendations.

**Context for NRRB Review**

The Administrator announced the NRRB as one of the October 1995 Superfund Administrative Reforms to help control response costs and promote consistent and cost-effective decisions. The NRRB furthers these goals by providing a cross-regional, management-level, "real time" review of high cost proposed response actions prior to their being issued for public comment. The board reviews all proposed cleanup actions that exceed its cost-based review criteria.

The NRRB review evaluates the proposed actions for consistency with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and relevant Superfund policy and guidance. It focuses on the nature and complexity of the site; health and environmental risks; the range of alternatives that address site risks; the quality and reasonableness of the cost estimates for alternatives; regional, state/tribal, and other stakeholder opinions on the proposed actions, and any other relevant factors.

Generally, the NRRB makes "advisory recommendations" to the appropriate regional decision maker. The region will then include these recommendations in the Administrative Record for the site before it issues the proposed response action for public comment. While the region is expected to give the board's recommendations substantial weight, other important

factors, such as subsequent public comment or technical analyses of response options, may influence the final regional decision. The board expects the regional decision maker to respond in writing to its recommendations within a reasonable period of time, noting in particular how the recommendations influenced the proposed cleanup decision, including any effect on the estimated cost of the action. It is important to remember that the NRRB does not change the Agency's current delegations or alter in any way the public's role in site decisions.

### **Overview of the Proposed Action**

The LLNL Site 300 is a weapons testing facility owned and operated by the U. S. Department of Energy (DOE). The primary contaminants of concern at this site are volatile organic compounds, high explosive compounds, uranium-238, tritium, nitrate, perchlorate, metals, and polychlorinated biphenyls. These substances have affected the groundwater, surface soil, subsurface soil, and surface water at the site. DOE has proposed cleanup actions for 11 "areas of concern" on site. These actions include a variety of remedial strategies, including institutional controls, monitored natural attenuation, groundwater extraction and treatment, soil vapor extraction, and excavation and off site disposal of contaminated soils.

### **NRRB Advisory Recommendations**

The NRRB reviewed the informational package for this proposal and discussed related issues with EPA site manager Kathy Setian on March 14, 2000. Based on this review and discussion the board offers the following comments.

- Information presented to the board indicates that site contamination exceeds several ecological endpoint screening levels. It also identifies other ecological risks (e.g., from cadmium in operable unit 4 and building 850). However, the materials did not clearly explain whether the site presents unacceptable ecological risks (i.e., ecological risks that warrant remedial action). The board recommends that the decision documents for this site clarify the bases for determining whether unacceptable ecological risks exist, and if so, demonstrate how the proposed actions address these risks.
- DOE has selected monitored natural attenuation (MNA) as its groundwater cleanup strategy for several locations at LLNL, based in large part on its belief that certain contaminated plumes are shrinking. The board recommends that DOE more fully support its MNA decisions in accordance with OSWER guidance (see OSWER Directive 9200.4-17P, Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites, April 21, 1999). This guidance identifies the kinds of data that should be considered when determining whether MNA is appropriate, including plume stability and evidence supporting specific attenuation mechanisms. For volatile organic compounds like those at LLNL, this could include biodegradation rates, environmental measures, (DO, CO<sub>2</sub>, ethene/ethanes), etc. DOE may also wish to consult EPA's Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water (EPA/600/R-98/128, 1998).
- In its initial review of the package, the board raised serious questions about the use of MNA at the Pit 7 Complex of OU5, where groundwater concentrations of tritium and uranium continue to increase (see site review package pp. 6-24, 6-25). The board supports the decision to remove the Pit 7 complex from this decision, pending further evaluation of the source and appropriate response options.

- The overall remedy relies on previously constructed caps for source control at several pits and landfills to minimize leaching of contaminants to groundwater. However, the package does not describe the construction of these caps or their efficacy in reducing leachate migration. DOE should evaluate and document whether each cap (especially the non-RCRA Subtitle C caps) will, in fact, reduce leachate migration to levels that are consistent with the chosen remedy for that pit or landfill.
- The preferred alternative for the Building 850 area (OU5) calls for removing the contaminated sandpile and contaminated soil to levels consistent with the NCP's 1x10<sup>-6</sup> point of departure for cancer risk (see NCP section 300.430(e)(2)(i)). Based on the site presentation, the board supports this action as cost effective, but notes that the preliminary remediation goals for the chemicals of concern should be better documented in the site's decision document.
- Materials presented to the board state that DOE used a 5 percent discount rate for preparing its cost estimates, and cite EPA's "Remedial Action Costing Procedures Manual" (EPA/600/8-87/049; see page 3-1). However, EPA issued guidance in June of 1993 which revised the recommended discount rate to 7 percent (see OSWER Directive 9355.3-20, OMB circular A-94 (October 29, 1992)). DOE should use this more current 7 percent rate when calculating its "net present value" cost estimates for site decision documents.

The NRRB appreciates the region's efforts to work closely with DOE, the state, and community groups at this site. We encourage Region 9 management and staff to work with their regional NRRB representative and the Region 1/9 Accelerated Response Center in the Office of Emergency and Remedial Response to discuss any appropriate follow-up actions.

Thank you for your support and the support of your staff in preparing for this review. Please give me a call at 703-603-8815 should you have any questions.

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