



Rocky Flats Citizens Advisory Board Recommendation 2003-4

Comments and Recommendations on the Proposed Modification to the Building 771 Closure Project Decommissioning Operations Plan, Modification No. 5

Approved July 10, 2003

Letter to:
Mr. Gene Schmitt, Manager
U.S. Department of Energy
Rocky Flats Field Office
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Golden, CO 80403

Mr. Steve Gunderson
CDPHE
4300 Cherry Creek Drive South
Denver, CO 80246

Mr. Tim Rehder
U.S. EPA
999 18th Street, Suite 500
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Dear Mr. Schmitt, Mr. Gunderson, and Mr. Rehder:

The Rocky Flats Citizens Advisory Board appreciates the opportunity to review the "771 Closure Project Decommissioning Operations Plan, Modification No. 5" dated June 19, 2003. We understand that the site commits to have further public dialogue on groundwater modeling and land configuration design relative to this project, and that this information is critical to making informed decisions. With this understanding in mind, we offer the following comments and recommendations on the proposed modification:

1. Preference for Source Removal

RFCAB reiterates our preference for source removal as the preferred remedial action where it has the potential to accomplish significant reduction in residual contaminant levels. Therefore, RFCAB recommends the following:

- All removable contamination must be removed, and not simply encapsulated, in order to meet the unrestricted release criteria.
- Regarding the portions of the concrete slab that will be left buried with fixed contamination, the site has stated that meeting the unrestricted release criteria would require cutting out an estimated 30% of the concrete slab. RFCAB understands that the worker hazards of such activity must be weighed against the environmental benefits. However, in areas of the slab where significant surface contamination exists as a thin layer that could be safely removed via hydrolasing or some other scabbling technique, the site should undertake this activity as a means of reducing the source term and thereby reducing long-term reliance on institutional controls.
- The CAB understands that the site intends to use a Pu volumetric standard to determine an upper limit on contamination that will be left. The CAB recommends that a surface standard, expressed in DPM per 100 sq. cm, be added so that the slab would have to meet both the surface and volumetric standards in order to be left. The CAB recommends that the RFCA parties set this standard in consultation with stakeholders and local governments.
- RFCAB recognizes that the carbon tetrachloride source at nearby IHSS 118.1 is being addressed in a separate decision document. However, RFCAB supports source removal of the carbon tetrachloride free product and excavation of associated contaminants in soil. This would reduce reliance on, and the necessary operating life of, the passive treatment system the site plans to install in the area. The area should be evaluated as a whole such that no decision made on the Building 771 D&D Project would preclude aggressive removal of the carbon tetrachloride source. This may lead to further excavation of the concrete slab along with the contaminated soil as a joint and thus cost effective effort.
- RFCAB is concerned with the precedent that treating a portion of a building as subsurface contamination sets. Therefore the RFCAB recommends that this type of solution be used only on a limited basis, when necessary for the protection of the workers, and that each situation be evaluated separately. The Site needs to continue to work with RFCAB to ensure this proposal only addresses the potential buildings they have identified (i.e. B371 and B881).
- RFCAB recommends an evaluation of the feasibility of removing the entire B774 basement slab. If site managers ultimately decide to leave the slab in place, justification should be provided. Some reasons for evaluating B774 separately are as follows:
 - Ø Significant source reduction might be accomplished through removal of a much smaller area of slab.

- Ø Different waste streams were processed in B774.
- Ø Higher levels of under-building contamination have been found beneath B774.

2. Land Configuration / Erosion Modeling

RFCAB understands that, under the proposal, the extent to which the remaining slab will be decontaminated depends on the final grade.

- The Land Configuration Design Basis has yet to be released. RFCAB is concerned about the timing of the document relative to the DOP modification currently being considered. Without the Land Configuration Design Basis, it is difficult to visualize how the local contouring for this building fits into the overall scheme.
- The site must ensure that the Land Configuration Design Basis and final grade specified for B771/774 is based on enhancing long-term stability of the hill slope rather than reducing the amount of concrete slab that has to be decontaminated or removed.
- RFCAB is concerned that the community is being asked to consider leaving subsurface contamination underneath hillside at risk of erosion; yet, to date no erosion control plan has been proposed for the area. The site must perform erosion modeling for the hillside to ensure that gullying does not bring subsurface contamination to the surface. Furthermore, the site needs to clarify the revegetation criteria for the B771 hillside and clarify whether temporary measures such as erosion mats will be employed.

3. Implications for Plutonium and Americium Transport

RFCAB understands that the site is proposing to apply the subsurface soil remediation strategy to buried concrete slabs, based on the assumption that if plutonium and americium are immobile in subsurface soil, those same radionuclides would be no more mobile when fixed to a concrete slab. The site should provide justification from the Actinide Migration Evaluation studies demonstrating that this general assumption of actinide immobility in subsurface soil applies to the situation at hand, especially in regard to the following:

- The alkalinity of concrete
- Particulate matter and colloids produced when concrete degrades
- The possibility of enhanced actinide transport in the presence of volatile organic

compounds as suspected at the 903 pad.

- Fixed uranium contamination and the prospect that it might exhibit greater mobility
- The effect of uranium on the transport of Pu and Am when all three radionuclides are found together
- Groundwater transport modeling for the area as whole, which is not scheduled for completion until the end of summer

4. Tunnel between B771 and B776

RFCAB is concerned about the fate of the tunnel that runs uphill from B771 to B776. If it remains open, eventual subsidence of the tunnel could destabilize the hill slope. In addition, has the site done groundwater modeling to show the effect an open tunnel would have on groundwater flow in the area?

5. Characterization / Independent Verification and Validation (IVV)

While a pre-demolition survey may not be required for parts of the building that will remain, RFCAB recommends that a pre-demolition survey be performed on the entire building. The purpose of characterizing the remaining slab would be to obtain more certainty regarding the nature and extent of residual contamination. Defining the source term is imperative not just for radionuclides, but for all constituents of concern, should there be contaminant migration in the future. In order to ensure the accuracy of this information, it is important to have an independent review of the characterization (IVV with modified objectives).

Page vii: "Under building contamination remediated, AS NECESSARY, by August 2004."

Page 25 of the same document states that samples collected under the 774 basement have detectable Am- 241 levels in the sub-slab soils ranging from 116 to 1,735 pCi/g, please define the term, "necessary". The RFCAB levels of cleanup depend on soil depth, but that is not defined here either.

Has it been possible to obtain core samples of the structures planned to be left? RFCAB requests the sampling data be provided to the public as soon as it is available.

6. Downgradient Monitoring

Since the proposed remedy assumes contamination affixed to a buried

concrete slab will not migrate, it is imperative to have the ability to test that assumption in the future. Therefore, RFCAB recommends the placement of groundwater monitoring wells downgradient of the slab to facilitate early detection of any contaminants that may be migrating from it. Surface water needs to be monitored at the nearest point of impact. If seeps are created on the hillside, the seep water needs to be monitored, as well. The data quality objectives for these different types of monitoring need to be identified for eventual inclusion in the CAD / ROD.

Consideration should be given to application of multi-level groundwater monitoring wells, similar to what is being used effectively at Fernald.

7. Long Term Stewardship

We hope that the site will commit to working with RFCAB on stewardship ramifications of leaving a contaminated slab in place on the B771 hillside. If this proposal is adopted, RFCAB believes that DOE will be obligated to perform additional ongoing maintenance activities to ensure the hillside remains in a safe, stable configuration post-closure.

The closeout report for the B771 Project should include maps showing the location (i.e. GIS coordinates) and depth of the concrete slab. Any under-building contamination should be documented, as well as the levels of residual contamination on the slab itself. Sampling data should also be provided.

Please see accompanying RFCAB Recommendation 2003-5 on long-term stewardship.

8. Interactions between Carbon Tetrachloride and Pu Slab Contaminants

It is clear that there have been undocumented interactions between contaminants of concern potentially changing the nature of the contamination on the site. For example, if the nearby carbon tetrachloride groundwater plume eventually comes in contact with the buried slab or the actinide contamination surrounding the building, what would be the effect on the plume and clean up of the plume by the Pu. Also what effect would carbon tetrachloride have on the concrete imbedded Pu? What other potential COC interactions could take place?

The CAB asks that the situation of interactions between multiple COCs be investigated, reported and explained.

9. Demolition of the Stack

On page 24, the document states: "This use of explosives is essential because it avoids having to perform dangerous manual labor tasks at extreme height on a scaffolding system with questionable integrity".

As for demolition of the stack, RFCAB recommends that explosives only be used on free-release structures. The stack must meet the free-release criteria before explosives can be utilized for demolition.

We hope that you are able to address these issues in the final Building 771 Project DOP Modification and look forward to hearing your response.

Sincerely,

Victor Holm
Chair

cc: Joe Legare, DOE

Richard DiSalvo, DOE
John Schneider, DOE
Chris Gilbreath, Kaiser-Hill
Dyan Foss, Kaiser-Hill
Rocky Flats Coalition of Local Governments

The Rocky Flats Citizens Advisory Board is a community advisory group that reviews and provides recommendations on cleanup plans for Rocky Flats, a former nuclear weapons plant outside of Denver, Colorado.

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