

February 11, 2008

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P.O. Box 808, L-574
Livermore, California 94551

Subject: Comments on the Draft-Final Engineering Evaluation/Cost Analysis (EE/CA) for Building 850 for LLNL Site 300

Dear Claire:

Enclosed are Tri-Valley CAREs (TVC) comments that address LLNL's Draft-Final Engineering Evaluation/Cost Analysis (EE/CA) for Building 850 for LLNL Site 300. As we informed DOE and the regulators at the last Technical Assistance Grant meeting, these are TVC's first comments on the EE/CA, as funding was not available to comment on the Draft in August.

We are of course disappointed that the extent of the contamination was so much greater than had been estimated by DOE/LLNL and that the remedy that was presented in previous documents (Interim Proposed Plan and ROD) was therefore deemed not feasible. The spread of contamination around the firing table is instructive of the problems with outdoor testing, and we hope that this will deter future uncontained testing. We are also concerned that other firing tables may have similar problems, and additional characterization may need to take place at them as well.

Sincerely,

Marylia Kelley
Tri-Valley CAREs

Peter Strauss
PM Strauss & Associates

cc: Kathy Setian, US EPA
Jacinto Soto, DTSC
Susan Timm, CVRWQCB
Leslie Ferry, LLNL

Tri-Valley CAREs' Comments on the Draft-Final Engineering Evaluation/Cost Analysis (EE/CA) for the Superfund Cleanup for the Building 850 Firing Table at the Lawrence Livermore National Laboratory Site 300

1. This EE/CA alludes to the fact that Pits 8 and 9 may require some consolidation.

The Draft-Final Engineering Evaluation/Cost Analysis (EE/CA) alludes to the fact that the above named waste pits may require consolidation. The Dept. of Energy (DOE) needs to specify why and under what circumstances it would seek approval of consolidation. Tri-Valley CAREs (TVC) is surprised that this would be mentioned in this EE/CA, as Pits 8 and 9 are part of Operable Unit 8. Please explain why this subject has come up in the context of the EE/CA, and what benefits DOE believes would result from consolidation of these Pits. In addition, these Pits are part of the Proposed Plan for Operable Unit 8, as described in the Draft Record of Decision (ROD). TVC believes that consolidation would require additional, legally mandated analysis, e.g., a ROD Amendment or Explanation of Significant Difference. Please confirm that this would be the case.

2. Areas around all past and existing Firing Tables (801, 802, 845, 851) need to be reviewed anew to see if they present similar problems as was evidenced at Building 850 (i.e., an underestimate of amount of contamination that was spread through unconfined explosive testing on the firing table).

TVC requests that DOE review the characterization information for all existing and past firing tables to determine whether the characterization was adequate at those locations and whether it needs to be improved. If new characterization is required at one or more of those locations, it should be formally scheduled, and soon. We note that at Building 850, in the Year 2000, the amount of contaminated sand and soil estimated for disposal was 1,260 cubic yards. In 2006, the amount of contaminated material was estimated at 15,422 cubic yards, an increase of more than 10 times. Only a small fraction of this is associated with the sand pile; most of the contaminated soil that needs to be removed is going to be scraped from existing hillsides around Building 850. If this (i.e., underestimation of the extent of soil contamination) is a problem at other firing tables, then the remedies need to reflect that.

3. Please describe when and why more than 1,000 capacitors containing PCBs were destroyed at the Building 850 firing table.

In addition to weapons-related materials, over 1,000 capacitors laden with PCBs were destroyed at Building 850. The EE/CA and other documents have not stated whether this was an outdoor waste disposal method or part of a series of program-related experiments. The EE/CA and other documents have also neglected to state when this practice ceased (assuming it has). TVC requests that the DOE provide information regarding the origin(s) of the 1,000 capacitors, what they were used for, whether the practice of destroying them on a firing table was program-related (and for what purpose) or a waste disposal technique, and the beginning and

ending dates when destruction occurred. Also, please provide information about the air monitoring systems used when the capacitors were destroyed. Additionally, was the practice of destroying capacitors done at other firing tables? If so, please provide similar information to that requested above.

4. The documents do not state the source of the dioxins and furans found in the soil.

We have assumed that these compounds were the result of partial combustion of the PCB capacitors. However, there are also compounds used at the firing tables that may have undergone incomplete combustion – the origins of dioxins and furans. Please provide this information, as TVC is concerned that this problem may be much wider spread than soils at Building 850.

5. The selected alternative will consolidate and solidify excavated soil and the sand pile, and dispose of it in the upper corporation yard. Total volume of soil after solidification is 22,000 cubic yards. The resulting mound would be about 20 feet high. DOE has stated that this may be used as a parking lot. A protective layer such as asphalt would be placed over the top, and cobbles will be placed around the sides to prevent biotic intrusion. We have several concerns regarding the viability and long-term protectiveness of this alternative.

A. The Remedial Action Objectives for the site include cleaning up to industrial soil levels and mitigating the hazards to burrowing owls. The site would not be suitable for residential use. This EE/CA did not evaluate the amount of soil that would be excavated if the site were to be cleaned up to residential requirements. TVC feels strongly that residential standards should be the principle cleanup standard for Site 300, although as in previous comments, we have stated that we recognize that small areas cannot be cleaned up to this level. Therefore, we request that DOE provide an estimate of required excavation and additional costs if the soil was cleaned up to residential standards for all relevant contaminants, including but not limited to PCBs, dioxins and furans.

B. Future use of the site and environmental conditions may erode the materials used to stabilize contaminants, thus affecting their capacity to immobilize contaminants. We strongly recommend that the covered area not be used as a parking facility because it will increase the potential for release due to and wear and tear on the cover (e.g., cracks in the asphalt, soil being spread by automobiles).

C. Very little data exist to support S/S products' durability over an indefinite disposal life. The solidified soil will contain depleted uranium, PCBs and dioxins and furans, all of which do not easily degrade. There is not enough discussion in the EE/CA about the type of material that is going to be used as a solidifying agent, nor is there information which leads one to have confidence that it will remain in place for an extended period of time.

D. A more thorough treatability study demonstrating the long-term ability to solidify the contaminants should be undertaken prior to final design of the stabilization process. Certain waste streams are incompatible with variations of solidification processes. The particular process should be tested for long-term

compatibility with the waste stream before it is used. For example, inorganic salts may affect the set rate either through acceleration or retardation. Cracks extending through the stabilized mass have been observed at some other sites, the cause of which is suspected to be the high temperature rise during curing. If the process fails to solidify the material, it could result in a pathway for release of contaminants. Additionally, Appendix E limits the discussion of stabilization to PCBs and co-located metals. No mention is made of the sand pile containing tritium.

E. Long term monitoring is necessary to ensure that contaminants have not been re-mobilized. A description of the monitoring plan should be included in the EE/CA. We are not only concerned about releases due to long-term wear, but also releases due to animal intrusion. It is uncertain that placing cobbles on a 20 foot vertical rise will effectively limit burrowing animals from digging into the solidified mass.

F. The thickness of the protective cover should be at least 2 feet. The depth of protective cover material is one-foot thick, a combination of asphalt and a gravel layer. We think it is prudent that it be at least two feet thick, because of the long life of the contaminants.

6. Additional methods that may make the selected alternative more hardy and robust were not analyzed, and should be.

TVC requests that DOE analyze the addition of an impermeable barrier placed like a box (with a bottom and sides) in which the solidified soil would reside. This would provide additional long-term protection against contaminant migration over time. We note that in addition to the PCBs, depleted uranium, dioxins and furans, there are significant concentrations of tritium (radioactive hydrogen) in the soil moisture around Building 850. Tritium has proven particularly mobile at other dump sites across the country. The analysis in the EE/CA fails to take this into account.

7. In general, the EE/CA fails to adequately consider the tritium contamination in the environment around the Building 850 firing table.

According to Appendix A, Table A-6 in the EE/CA, tritium samples taken from boreholes contained a concentration of up to seven million pCi/L of tritium in soil moisture. TVC considers the tritium contamination significant and requests that DOE detail the fate and potential transport of tritium under the selected alternative.