

July 23, 2009

Mr. Ryan Batty  
DTSC Project Manager  
8800 Cal Center Drive  
Sacramento, CA 95826  
Fax: (916) 255-3697  
[RBatty@dtsc.ca.gov](mailto:RBatty@dtsc.ca.gov)

**Re: Comments on the Draft Closure Plan for LLNL's Building 419**

Dear Mr. Batty:

On behalf of its approximately 5,600 members, Tri-Valley CAREs (TVC) submits the following comments on the Draft Closure Plan for Lawrence Livermore National Laboratory's (LLNL) Building 419. TVC is a non-profit organization founded in 1983 by Livermore, California-area residents to research and conduct public education and advocacy regarding the potential environmental, health, and proliferation impacts of the Department of Energy's LLNL.

The project involves the Department of Toxic Substances Control's (DTSC) approval of the closure of the Resource and Conservation Recovery Act Interim Status Units associated with the Building 419 Hazardous Waste Treatment Facility (B-419 Facility)—room 124, room 155, and room 167. The scope of the closure will also include supporting facilities and structures, including the Building 419 structure, under floor piping and tank vault, and hazardous waste staging area north of the building.

The Building 419 structure will be demolished and the debris generated will be transported to a licensed facility outside of California for disposal. Following demolition of the building structure, the building foundation and underlying soils will be sampled to determine if the operation of the B-419 Facility led to contamination of the subsurface. The goal of the project is to clean close the B-419 Facility, which would allow the site to be returned to beneficial use, likely as a parking lot. If the site cannot be clean closed, then LLNL will prepare and submit a Post-Closure Permit application to DTSC for review and approval. The project is anticipated to begin this summer and has an estimated 21-month implementation schedule.

I. Radionuclide contamination

The list of potential historical contamination at the B-419 Facility must be supplemented to include more detailed information. According to the Building 419 Final Closure Plan, potential historical contaminants in both the Size Reduction Unit and the Solidification Unit include radionuclides. However, no information was given regarding the specific radionuclides that may be present at the B-419 Facility. This should be remedied by providing further information regarding

all of the radionuclides known to have been treated or stored as part of mixed waste, or otherwise, in the B-419 Facility. Without this information, it is difficult to offer specific comments, since any potential remediation plans would vary depending on the radionuclide(s) involved. For example, metallic plutonium—which can be present in mixed waste at a low concentration and still be classified as a low-level mixed waste—and tritium do not have the same environmental characteristics; accordingly, the precautionary measures and remediation plans for each would be different.

## II. Tritium contamination

The Building 419 Final Closure Plan should note that tritium is present in groundwater near the B-419 Facility, with the facility being considered a potential source of the contamination. Although, as observed above, information regarding the specific radionuclides that were treated or stored at the B-419 Facility is not included in the Building 419 Final Closure Plan, for the purposes of these comments, we will assume that tritium is one of the potential historical contaminants at the facility. In this context, we note that the information provided regarding protections/precautions to avoid workers' exposure to tritium and/or releases to the environment during closure activities is missing or incomplete. This information should be provided in detail.

## III. Pre-demolition sampling

Before the Building 419 structure is demolished, extensive sampling should be conducted to evaluate the nature and extent of the contamination present at the B-419 Facility, including underground contamination. Recently, a number of LLNL workers and contract workers with GSE Construction have been exposed to beryllium at the laboratory.<sup>1</sup> Exposure to beryllium dust can lead to beryllium sensitivity and chronic beryllium disease, an incurable and potentially fatal respiratory disease; and, indeed, some LLNL workers and contract workers with GSE Construction have developed beryllium sensitivity or chronic beryllium disease. A subsequent causal analysis, conducted by LLNL, identified a number of common weaknesses in the areas of work control and communications.<sup>2</sup> According to the causal analysis,

These causes when analyzed collectively have led to a number of latent organization weaknesses. The same weaknesses could be identified by analyzing radiation protection or lead incidents or any other hazardous process. Most of the weaknesses identified are not new to LLNL. Majority of these deficiencies had been identified in previous independent assessment and corrective action plans.<sup>3</sup>

Thus, it is clear both that LLNL has an extensive and ongoing problem with beryllium contamination and that LLNL's organizational weaknesses may lead to the exposure of project workers to hazardous and radioactive contamination. Accordingly, extensive sampling should be conducted prior to demolition of the Building 419 structure, particularly for beryllium and other

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<sup>1</sup> Betsy Mason, *Feds to investigate Livermore Lab's handling of toxic metal beryllium*, CONTRA COSTA TIMES, Jul. 6, 2008. For your convenience, this document is enclosed.

<sup>2</sup> Lawrence Livermore National Laboratory, *Beryllium Related Events Cause Analysis*, Jul. 1, 2008, at 1. For your convenience, this document is enclosed.

<sup>3</sup> *Id.* at 17.

radioactive or hazardous substances that may have been present at the building.<sup>4</sup> With regard to beryllium, such sampling must be conducted using wet swiping testing, which is more effective than dry swipe testing, and must encompass all portions of the Building 419 Facility, including administrative areas and rafters.<sup>5</sup>

This sampling is necessary to ensure adequate protections for worker health, public safety, and environmental quality. If post-demolition sampling reveals the presence of toxic or radioactive substances, the impacts to worker health and the environment may have already been felt. Adequate pre-demolition sampling will allow for effective mitigation measures to be implemented in order to address any potential threats.

In addition, further study is necessary regarding mercury contamination at the B-419 Facility. Currently, LLNL and its regulators are attempting to remediate an area of the LLNL main site that is contaminated with both mercury and radioactive substances. This contamination is in the vicinity of the B-419 Facility and was found despite prior, extensive characterization of the area under the federal government's Superfund program to remediate the nation's uncontrolled hazardous waste sites. This provides further support for the necessity of additional characterization and/or sampling at the B-419 Facility.

#### IV. Closure performance objectives

DTSC must disclose the criteria that will be used to determine whether the closure objective can be met, as well as the party that will ultimately be responsible for making this determination. The closure objective is to cleanup soils to background levels for inorganic metals and non-detectable levels of organic chemicals. However, if these cleanup targets cannot be met, then the B-419 Facility will instead meet health- or risk-based cleanup standards. In the event that none of these standards can be achieved, LLNL will be required to submit a post-closure permit application to DTSC. This permit would set out how the laboratory will monitor or take care of the site to ensure that any remaining contaminants do not impact human health or the environment, now and into the future. This may include deep soil or groundwater treatment under the Superfund program.

Presumably, this determination will be made based upon a cost-benefit analysis and the assessment of other factors, including the greater risks to public health and environmental quality associated with meeting either of the less-stringent alternatives. TVC is concerned that undue weight will be accorded to certain factors, in particular the costs that may be required to achieve the closure objective. DTSC should be responsible for making this determination, based upon an independent assessment of the various factors relevant to meeting the closure objective. TVC believes that, as long as it is technically and economically feasible, the closure objective should be met, despite any protestations from LLNL. This will ensure that public health and environmental quality will be protected and will maximize the potential future uses of the site.

#### V. Geology and soils

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<sup>4</sup> See, e.g., U.S. Department of Labor, *Toxic substances verified as having been onsite and used at DOE site "Lawrence Livermore National Laboratory" at some time*, available at <http://www.scm.dol.gov/index.cfm> (last visited July 17, 2009). For your convenience, this document is enclosed.

<sup>5</sup> Betsy Mason, *supra* note 1.

DTSC must adequately analyze the landslide and liquefaction potential for the project area, adopting appropriate mitigation measures, where appropriate. According to the Initial Study, “[n]o areas of landslide concern have been identified near the project[,]” and “[n]o liquefaction potential has been identified in the area.” However, the California Geological Survey has determined that 40 square miles of the Livermore Valley are susceptible to liquefaction or landslides in a large quake, including a large portion of downtown Livermore, which is located just a short distance from LLNL.<sup>6</sup> DTSC must account for this risk in its analysis of the potential project impacts.

## VI. Public comment

As noted above, there are substantial gaps in the information available to the public regarding the Draft Closure Plan for LLNL’s Building 419. Accordingly, additional public comment would be appropriate, once further information has been provided. For instance, TVC would be able to offer more specific comments after a list of potential radionuclide contamination at the B-419 Facility has been made available.

## VII. Conclusion

The list of potential historical contamination at the B-419 Facility must be supplemented to include more detailed information. The Building 419 Final Closure Plan should note that tritium is present in groundwater near the B-419 Facility, with the facility being considered a potential source of the contamination. Prior to the demolition of the Building 419 structure, extensive sampling should be conducted to evaluate the nature and extent of the contamination present at the B-419 Facility, including underground contamination. DTSC must also disclose the criteria that will be used to determine whether the closure objective can be met, as well as the party that will ultimately be responsible for making this determination. In addition, DTSC must adequately analyze the landslide and liquefaction potential for the project area, adopting appropriate mitigation measures, where appropriate. Finally, additional public comment would be appropriate, once further information has been provided regarding the Building 419 Final Closure Plan.

Thank you for your consideration.

Sincerely,

Robert Schwartz  
Staff Attorney, Tri-Valley CAREs  
2582 Old First Street  
Livermore, CA 94550-2055  
Telephone: (925) 443-7148  
Email: [rob@trivalleycares.org](mailto:rob@trivalleycares.org)

Enclosures

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<sup>6</sup> Suzanne Bohan, *Map details quake hazards in Livermore Valley*, OAKLAND TRIBUNE, Mar. 23, 2009. For your convenience, this document is enclosed.