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To: LLNL Permit Appeal, Attn: Paul Ruffin, DTSC, 800 Cal Center Drive, Sacramento, CA 95826

Date: February 13, 2017

Combined Written Arguments and Supporting Statement of Reason in Support of Tri-Valley CAREs Appeal of Lawrence Livermore National Laboratory's, Main Site, Hazardous Waste Permit

Tri-Valley Communities Against a Radioactive Environment (CAREs), on behalf of our members and constituents, hereby submits these written arguments in support of its appeal of the Department of Toxic Substances Control ("DTSC") Final Hazardous Waste Facility Permit ("Permit") decision for the Lawrence Livermore National Laboratory ("LLNL") issued by DTSC on March 11, 2016. This appeal demonstrates the factual, legal and policy reasons that require DTSC to make requested changes LLNL's permit.

Lawrence Livermore National Laboratory is predominantly a nuclear weapons research facility. More than 86% of its most recent budget was devoted to nuclear weapons activities. These activities, and some of the other research done at LLNL, necessarily involve experimenting with significant quantities of hazardous and radioactive constituents. Often these waste streams are mixed together creating mixed hazardous-radioactive waste that the DTSC is required to regulate.

Livermore is a community with over 85,000 people. There are houses and businesses directly adjacent to the LLNL, and thousands of employees on site every day. A release or accident with the Lab's waste streams poses a significant public health risk.

Tri-Valley CAREs' staff and members were involved in the original hazardous waste permitting process in 1999 as a public stake holder. Both the actual permit and the public process that round were far more in depth and detailed. We realize this process is different in part because it is a permit renewal, not an initial permit, but from the public perspective it appears more like a rubber-stamping that erodes the quality of the original permit. We realize the DTSC has limited resources, but this facility is unique and requires a serious and in depth review, especially considering it is only done every 15+ years because of those limited resources.

The Department has determined that only 3 appeal comments filed by Petitioner meet the criteria for granting review pursuant to the California Code of Regulations, title 22, section 66271.18, subdivision (a): comments 2, 7, and 9.

This appeal will address each topic in the following order. Comment Two is inclusive of many points brought up during the public comment period pointing out ways in which “the permit application is inadequate.” Comment Seven follows up on Tri-Valley CAREs concerns about “Delayed Closure.” Comment Nine focuses on “permit changes.”

I. The Permit Application is Inadequate

The DTSC repeatedly states that it has conducted a review and the operations are safe without offering sufficient information or reasons for the statement. The permit application submitted by LLNL is inadequate, especially when compared to the previous Part B application.

The application does not provide enough information to satisfy title 22CCR 66264.601(c) which states, “prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents, hazardous constituents, or reaction products, in the air, considering: (1) the volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols, and particulates; (2) the effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air; (3) the operating characteristics of the unit; (4) the atmospheric, meteorologic, and topographical characteristics of the unit and the surrounding area; (5) the existing quality of the air, including other sources of pollution and contamination and their cumulative impact on the air; (6) the potential for health risks caused by human exposure to constituents of concern; and (7) the potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to constituents of concern.”

The DTSC based its decision that LLNL does not pose a risk to public health on an old and outdated risk assessment that was conducted in 2010 using data from 2008. A new human health risk assessment using current information and protocols should be conducted. The application includes new units and operations and the risk assessment should evaluate future operations, including new units. The old risk assessment considered waste management units that have since been removed. The new risk assessment must evaluate the new operations and the effect of the removal of waste management units and air pollution control devices.

Also, Vol. 2 Sec. 5 of the application indicates nine miscellaneous units. The application does not contain enough technical information for evaluation of these units. Many of these units handle radioactive and hazardous wastes, including evaporation, and washing contaminated debris with hot water, etc. According to section 5.4, waste can be heated to 140 degrees F. There is not enough information to assess the adequacy of the air pollution control devices and what kinds of emissions are affecting the workers and others in the public from these operations. The application must contain enough information to evaluate the safe operation of the facility. The current application mostly contains trivial descriptions of operations and units that make the assessment of safety and impact to human health and the environment impossible. The application must be rewritten to provide relevant information.

The human health risk assessment also does not evaluate waste management activities from transuranic radiological contaminated hazardous waste, commonly known as Transuranic (TRU) Mixed waste from nuclear weapons work.

Additionally, LLNL has included a list of waste codes in the Part A that is so broad that it would enable LLNL to treat virtually any kind of waste. Further, the air pollution control system has changed since the risk assessment was written. This means that another two very important aspects of the risk assessment have changed and the risk assessment that the DTSC is relying upon is invalid. The DTSC must demand a new risk assessment that is performed based upon up-to-date protocols that would also consider the hazards of the waste streams that the agency is authorizing and the current air pollution control system. Further, LLNL and DTSC practically nullified any limitation on what kind of waste can be treated in any of the units by inducing comment 47 and the response. Also LLNL has not performed an ecological risk assessment.”

Our concerns stretch to all waste units on site at LLNL. As stated in our comments, Tri-Valley CAREs was able to tour the DWTF on June 2, 2015. We did not tour other waste units. Our tour brought up several specific concerns that were outlined in our comments on the Draft that should be reviewed on appeal.

“The Wastewater Filtration Unit, aka the Dorr Oliver Unit. This machine, which has been at the lab since 1962, or 53 years, was acknowledged to “occasionally” leak. It is known to have been subject to leaks 20 years ago. There are several exposed areas where the contaminated water passes that are simply covered in plastic during

operations. This unit, which is part of the permit, poses various pathways by which contaminated water and vapor can be released. It is now a skid mounted portable unit and bare floor lies beneath it. We encourage DTSC to require some sort of catchment below this unit and require other modifications to prevent escape of contaminated water and vapor from this unit. In the alternative, the DTSC could require the unit's replacement with more advanced technology that has enhanced worker safety controls.

Cal Fran Evaporator modules. One of the two modules was broken and largely disassembled. We want to make sure the DTSC is aware of the units' problems and ensures that it is sufficiently repaired prior to reuse. Also we were told that the ISA evaporator is new and will be newly permitted under this renewal, but that is not explicit in the permit. It is not explicitly listed as a newly permitted unit.

Internal Inspection Process. According to the Permit, the RHWM personnel conduct inspections of the waste management areas. However when we spoke to RHWM personnel they informed us that they only inspect the "real property" i.e. the non-attached items in the facility, like the various permitted units. They described their relationship to the lab as landlord-tenant. The lab/landlord has facilities maintenance teams inspect the DWTF's piping that connect the many treatment units (which includes hundreds of yards of pipes that move contaminated liquid and vapors) venting, roof, plumbing, etc. However, the facilities maintenance inspection schedule of the DWTF is not included in the permit's "General Inspection Schedule"¹ which indicates that the DTSC is not aware of the Facilities Maintenance Inspection schedule or the general thoroughness of their preventative maintenance inspection regime."

Section 66270.23(c) requires LLNL supply additional information..." It states that "owners and operators of facilities that transfer, treat, store, or dispose of hazardous waste in miscellaneous units shall provide the following additional information:... (c) information on the potential pathways of exposure of humans or environmental receptors to waste constituents, hazardous constituents and reaction

¹ U.S. Dep't of Energy Nat'l Nuclear Sec. Admin., Lawrence Livermore National Laboratory, No. LLNL-MI-420944-Rev-9, RCRA Part B Permit Application, Volume 3, Attachment 2 (2014).

products, and on the potential magnitude and nature of such exposures;” The DTSC response was that the information has been provided in Volume 1 and 2. The information provided in those volumes is so general and brief that it does not meet the requirement stated above.

The current application is far less detailed than the previous one, and is less detailed than the law requires. The comment cites examples of areas in the application that in effect say that we comply with the regulations without any implementing procedures or descriptions. This approach may be acceptable in a permit by rule situation, but not for a full permit. The application needs to be revised to include required detail. Commenter’s presented examples of deficiencies in the application to show that a good scientific and engineering review of the application has not been performed. In response, the agency points to inadequate sections of the application and provides explanations that should be in the permit application. For example, comments asserted that insufficient information has been provided for a new unit for macroencapsulation to evaluate the process for protecting human health and the environment. The Responses to comments provide additional information, but not in the format or detail that should be in the final permit application. Additionally, the Waste Analysis Plan includes general statements about approved sampling devices, obtaining representative samples, and annual waste stream verification without providing detailed descriptions and implementing procedures.

There are other instances in the application where the information is inadequate and it is the DTSC’s responsibility to make sure that the application is complete. In the section about the contingency plan reporting the response states, “LLNL will notify DTSC in case of fire, explosion and/or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.” LLNL has a history of accidents that were not reported. Who decides that a release “could threaten human health or the environment”? How is the decision made? DTSC would never know if someone at LLNL decides that a release could not threaten human health and the environment.

It is not enough to mention, “Approved sampling devices are used following EPA or ASTM guidance to collect a representative sample . . .” These statements are meaningless without specific citations of guidance and detailed procedures for implementing the guidance. The facility must have detailed processes and procedures to implement the EPA and ASTM guidance method. The Waste

Analysis Plan is full of statements such as “when sampling homogenous solids, a representative sample is collected for analysis. Like liquid sample . . .” Again, this is meaningless without being accompanied by implementing procedures. The Waste Analysis Plan, Sec. 4 states, “Existing waste streams are verified annually.” What is the process for this verification and what does it entail? Vol. 3 Sec. 5.2 includes a process that is not explained in the miscellaneous treatment unit section in Vol. 2. The application should be complete, easy-to-follow and include all of the information in appropriate sections. This new unit and a process are added to the application in an inappropriate manner. The section does not provide enough information for evaluation of the process for protecting human health and the environment. What is a specially lined container? How are the liner and lid liners sealed? Is the container heated and/or cooled? How is the container heated or cooled? What is “low temperature”? Vol. 3 Sec. 6 states, “Pursuant to 22 CCR §66264.13(c), occasionally LLNL receives offsite waste (e.g. from Site 300).” This section of Title 22 CCR is for off-site facilities. We would note, too, that e.g. is not the same as i.e.

The section also states, “For off-site facilities, the waste analysis plan required in subsection (b) of this section shall also specify the procedures which will be used to inspect and . . .” Has LLNL become an “off-site” facility? LLNL had been specifically allowed to receive waste from Site 300 only. The application clearly states that LLNL is going to be an off-site facility and it can receive wastes from anywhere, though again the responses to comments assert that other parts of the application limit outside wastes to Site 300 only. The application is vague and public stakeholders are still concerned that it does not adequately prevent future scenarios in which wastes are allowed from other sites. This change coupled with lack of specific information about the waste management processes will allow LLNL to receive waste and treat waste from anywhere, including dangerous wastes from other DOE facilities, and then claim it is covered by this permit.

II. Delayed Closure

Despite a long response on the issue, the DTSC has still not demonstrated that the closures occurred based on a detailed plan that was reviewed by DTSC. How have the DTSC and LLNL demonstrated that closing the units will not shut down or seriously disrupt the facility operations? Will all closures require a new closure plan at the time of closure? The response admits that if sampling activities are performed adjacent to active units the risk of hazardous waste being released

increases due to human error or... But does not show any analysis has been made regarding these risks or how to mitigate them. Instead the DTSC relies on an unverified assertion that “Closure of units within units are performed regularly without incidents” and that “These processes are understood and performed routinely” to apparently forego any additional analysis. Further DTSC’s reasoning, “if historical information is not kept” for not performing closure is nonsense. The DTSC must ensure that units are closed in an environmentally sound manner that protects human health. Closure must be conducted based on a written plan that has been reviewed and approved by the DTSC and include provisions for partial or final closure, consider future operations, spills, etc., and include a sampling and analysis plan. We request that DTSC provide the plans as part of the permit.

III. Permit Changes

As discussed above, LLNL has changed many aspects of its operations, including adding practically all EPA and California waste codes by simply adding a footnote and making changes to operations of some of the units. The DTSC has concurred by simply stating that all proposed changes have been reviewed. The DTSC must consider the environmental effects of adding new waste constituents to the units. The processes of units are different and so are their control devices. Major changes such as these deserve to be evaluation in a much more rigorous manner than being added to a permit by a cryptic response to comments. The public has not had enough time to study the impact of these changes. The permit application must be revised before these changes are allowed.” Response: DTSC’s response to comments indicate that DTSC will change permit condition III.1. to incorporate the Part A and Part B permit application (Operation Plan) revisions requested by LLNL. That was not done. The final permit identifies the revised July 2015 Operation Plan only on the final permit cover/signature page. Major changes such as these deserve to be evaluated in a much more rigorous manner than being added to a permit by a cryptic response to comments. In association with Table 3, added back in the footnote regarding the varied waste streams as follows: “Due to the nature of research and development activities at Lawrence Livermore National Laboratory, there are a large number of waste streams generated with varying hazardous constituents. Therefore, the form codes, EPA hazardous waste numbers, and California waste codes shown are the codes typically found within the management unit, though others may be present, including U and P codes. These codes shown are meant to provide insight for the management unit, and are not a description of a single waste stream.” This footnote statement is not found in the

final permit associated with Table 3. Also, the RCRA Part B Permit Application, dated July 2015, in the administrative record provided to the Permit Appeals Officer has the March 2014 version of the Waste Analysis Plan (Part B, Vol. 3, Att. 1), which does not have the footnote on Table 7.1.

IV. Conclusion

We call on DTSC to fix the fundamentally flawed and incorrect determination that the permit and its conditions are fully protective of public health and the environment. Pursuant to 22 CCR § 66271.18(a), Tri-Valley CAREs specifically petitions the Department to review General Condition 2(B): The Permittee is permitted to treat, store and dispose of hazardous wastes in accordance with conditions of this Permit.

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