

Tri-Valley CAREs

Communities Against a Radioactive Environment

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Comment on the Draft Revised Environmental Assessment for the Biosafety Level Three Facility at the Department of Energy's Lawrence Livermore National Laboratory (DOE/EA-1442R)

Submitted by Tri-Valley CAREs

Tri-Valley CAREs is a non-profit organization founded in 1983 by Livermore area residents to research and conduct public education and advocacy regarding the potential environmental, health and proliferation impacts of the Department of Energy's (DOE) Lawrence Livermore National Laboratory (LLNL).

On behalf of our 5,600 members, Tri-Valley CAREs submits the following public comment concerning the Draft Revised Environmental Assessment (EA) for the proposed Biosafety Level 3 (BSL-3) facility at LLNL.

Since 2002, when both of the nation's classified nuclear weapons design laboratories, Livermore Lab in California and Los Alamos Lab in New Mexico, announced plans to operate advanced biowarfare agent research facilities, Tri-Valley CAREs has closely monitored these proposals. In 2003, Tri-Valley CAREs and Nuclear Watch of New Mexico initiated litigation pursuant to the National Environmental Policy Act (NEPA) to compel comprehensive environmental review at both locations.

Since that time, the DOE has agreed to conduct a full Environmental Impact Statement (EIS) and public hearings before moving forward with a BSL-3 at Los Alamos Lab. Regarding the proposed BSL-3 at Livermore Lab, the 9th Circuit Court of Appeals remanded the Environmental Assessment and its finding of No Significant Impact (FONSI) back to the Department as insufficient -- in large part "to consider whether the threat of terrorist activity necessitates the preparation of an Environmental Impact Statement." As we will note in greater detail below, we believe that NEPA does require a full EIS and public hearings before the Livermore Lab BSL-3 can proceed.

An adequate and comprehensive NEPA review is critical to protect the health and environment of Northern California, where LLNL is located. The immediate 50-mile radius around LLNL includes the metropolitan San Francisco Bay Area to the west and our State's ranching and agricultural heartland, the Central Valley, to its east. More than 7 million people live within this directly affected area.

NEPA requires federal agencies to take a hard look at the potential environmental impacts of projects that may have a significant impact on the environment. The planned BSL-3 facility at LLNL will handle large quantities of some of the deadliest biological agents on earth. If a release occurs, thousands of area residents could be made ill or die from the release -- and mass hysteria could follow.

There is new information since the DOE originally released its EA for the BSL-3 at LLNL in 2002. Some of the new information is incorporated into the Revised EA (albeit followed by insufficient analysis to be meaningful), while other, key information is missing altogether.

Our comments outline some of the environmental impacts posed by this proposed action, including unanalyzed and poorly analyzed security risks. Moreover, our comments propose reasonable alternatives and mitigation measures that, if fully analyzed by DOE and subsequently implemented, would better protect public health and the environment than the currently planned action.

We will also raise questions to prod proper NEPA analysis in order to protect communities downwind and downstream of LLNL, avoid wasting resources (natural and financial) and strengthen the Biological Weapons Convention to prevent the spread of bio-weapons. We submit these comments to encourage more careful consideration of the policy implications of collocating advanced bio-warfare agent research and nuclear weapons research along with the myriad of serious, direct health and environmental hazards posed by operation of this BSL-3 at LLNL.

Need for Extension of Comment Period and Public Hearing

Most area residents were never made aware of the comment period. It has not been widely or adequately publicized by the Department of Energy or by Livermore Lab. Therefore, people are being deprived of their right to comment. The deadline should be extended for at least 30 additional days. And, a public hearing should occur within the extended public comment deadline so that the community will have an opportunity to learn about this important project firsthand.

Moreover the Revised EA itself does not tell people where or when to send comments. Even if people were told where to send comments, the fax machine did not accept comments on May 11, 2007, the comment deadline. This unfortunate situation raises the question of whether the DOE even wants the public to comment, as is contemplated in the NEPA statute.

As you are aware, the purpose of NEPA is to ensure that governmental decision-making is conducted on the basis of sufficient and sound information and in a manner that ensures public participation in this process by incorporating the unique local perspectives of the affected community and enabling community members to learn about the project through public hearings and public documents.

Tri-Valley CAREs has submitted extensive comments on many National Environmental Policy Act documents over its 23 years and has facilitated thoughtful dialogue and informed debate on important environmental issues through administrative processes. It is clear to us that in order to successfully gather thoughtful public input, DOE will need to extend the public comment period and hold a public hearing.

Purpose and Need / Alternatives Analysis is Inadequate And Must be Augmented

Advanced biodefense research (i.e., involving bio-warfare agents and including such activities as genetic modification of bio-warfare agents and aerosolizing them) should not be collocated with nuclear weapons research. Further, locating a BSL-3 facility at LLNL is duplicative of other facilities that are and can continue to be available for use by LLNL researchers, including BSL-3 facilities run by public health agencies that do not pose collocation problems.

In the United States, BSL-3 level biodefense facilities are proliferating at an alarming rate with multiple agencies proposing new projects each year and no overarching national assessment of the capabilities we have, how to best utilize them and what, if any, additional capabilities are needed (and for what purpose). Tens of billions have been allocated for biodefense in the past few years with little oversight or accountability.

In this context, and pursuant to the requirements of NEPA, we urgently insist that DOE conduct an in-depth analysis the purpose and need for the LLNL BSL-3 within the context of federal spending on biodefense laboratories.

Please analyze and describe how LLNL researchers could conduct experiments at existing BSL-3 facilities. In our 2002 comments we requested that DOE analyze how it could better utilize existing BSL-3 facilities run by the Centers for Disease Control and Prevention (CDC) as that agency has a civilian science mission and a history of operating BSL-3s. The DOE response was, essentially, that using other agency labs would be inconvenient.

Since then, the CDC has expanded its BSL-3 facility at Fort Collins, Colorado -- which is often used by LLNL researchers when they require a BSL-3. It has also come to light that LLNL researchers use the BSL-3 facility at the Dugway Proving Ground in Utah, and that facility has also seen extensive expansion since the original 2002 EA. We note that both Colorado and Utah are easily accessible by plane.

The DOE must fully and honestly analyze the option of continuing to utilize other agencies' BSL-3 facilities instead of operating one on-site at LLNL. The DOE's "purpose and need" statement, which is merely repeated on page 8 in the Revised EA, is out of date and insufficient.

You state in the Revised EA that the Department of Energy has no laboratories to handle experiments with BSL-3 or BSL-4 agents. Tri-Valley CAREs questions the need for a facility that is a higher level than BSL-2 for doing a significant percentage of the biodetector validation work underway at LLNL. It is our understanding that surrogate agents can obviate the need for actual testing in many instances, and, as noted above, the then less-frequent need for additional validation could occur at existing facilities offsite.

This combination approach (surrogate agents where possible and other agency facilities when surrogates cannot be used) must also be fully examined by DOE.

Further it is disingenuous for the DOE to only discuss what biolabs exist within its own complex and fail to mention the fact that the Department of Homeland Security (DHS) has biolabs. Page 4 of the Revised EA asserts that "some of DOE's missions relating to biological security have been transferred to the [DHS]." Some, if not most, of the work slated for the BSL-3 will be done in a "work for others" arrangement for DHS, according to the Revised EA. Thus, the BSL-3s that exist within DHS should be considered as alternatives for

the BSL-3 proposed for LLNL. This option, too, must be fully examined by DOE, including in conjunction with one or both of the other options described above.

Further, there is a question as to what agencies should be completing this NEPA review, DOE alone (the current situation) or DHS or one or more federal agencies jointly. Please spell out the extent that DHS work will be completed in this lab and provide the rationale for why DOE, rather than DHS, is completing this analysis. Please include information about the planned percentages of work that will be done by DHS and DOE and the percentages of funding from each agency.

At a minimum, we urge you to bring in these other federal agencies as cooperating agencies so that no duplication of effort, lack of coordination or under-optimized utilization of BSL-3 space occurs with DHS, CDC or the BSL-3 at the Dugway Proving Ground. Please also describe how you will ensure that the work conducted at LLNL will not be duplicative of work at other biodefense laboratories including but not limited to the aforementioned DHS labs, CDC labs and/or DoD facilities like Dugway.

Using existing labs instead of building a new one is an alternative that must be given full, genuine consideration as the NEPA process moves forward.

Inappropriateness of Location

Livermore Lab sits within a 50 mile radius of seven million people. This highly populated area is not an appropriate place to conduct experiments with some of the deadliest agents known, including but not limited to live anthrax, Q fever and plague. Homes and apartment buildings (and little league fields) are built out to the gates of LLNL. Moreover, LLNL itself is a densely crowded 1.3 square mile facility with approximately 10,000 employees. If there were a bioagent release due to any reason, infection and disease could be easily spread among the worker population as workers travel in and out of the very crowded and compact site.

In our detailed comments that follow are numerous, additional examples regarding the inappropriateness of locating this facility at LLNL. They range from the fact that LLNL is a Superfund cleanup site (on EPA's list of worst contaminated locations in the country) to elevated security risks at the LLNL BSL-3 (such as those related to genetic modification of bio-agents and the potential to create disease "superstrains") to problems posed by lack of transparency and collocation of "bugs and bombs."

EIS vs. EA

As noted above, an EIS should be completed on this facility. The BSL-3 facility proposed for Los Alamos National Lab is being studied in a full EIS. DOE, in its Federal Register notice, stated that the preparation of an EIS at Los Alamos Lab was due in part to the need for a more complete seismic analysis than had been done in the EA.

We concur with that DOE decision, and note that in Livermore, the risks of earthquake are much greater than in New Mexico. There are a number of earthquake faults capable of causing damage at the LLNL site. The nearest fault zone, the Las Positas Fault Zone is less than 200 feet from the site boundary (see also "earthquakes" below).

Furthermore, the planned BSL-3 facility at LLNL may be more vulnerable to seismic events because it is not a permanent structure. The LLNL facility is a prefabricated structure that was fabricated by a company that proudly proclaims its ability to put together such a facility in 180 days. The situation warrants a full EIS.

We note too that the LLNL BSL-3 EA was substantially "cut and pasted" from the Los Alamos BSL-3 EA that had been released earlier. Since the DOE has withdrawn its Los Alamos Lab BSL-3 EA and FONSI -- and has opted to complete an EIS process -- shouldn't the DOE stop relying on the SAME analysis the Department decided was not adequate for Los Alamos simply repeated in the LLNL BSL-3 EA. Those sections should be struck and redone.

The Revised EA gives DOE the opportunity to look anew (and with new information) at risks. We are deeply disappointed that DOE has failed to make use of this "second chance" to do it right.

Further, the Revised EA permits the LLNL facility to conduct experiments with any and all BSL-3 agents. This includes scores of potentially deadly pathogens like Q fever, live anthrax, botulism, bubonic plague, tularemia and much, much more. The Revised EA also mentions that the LLNL BSL-3 would be used to genetically modify bio-warfare agents, conduct experiments with prions, and aerosolize pathogens, among other activities not associated with most BSL-3 facilities in the United States.

The Revised EA (and the 2002 EA before it) say that the LLNL BSL-3 would house up to 10 liters of very concentrated bio-agents in solution. Other DOE documents discuss this same BSL-3 as housing up to 100 liters of very concentrated bio-agents in solution, including up to 25,000 discrete samples of potentially deadly pathogens. The DOE must reconcile using different volumes in different documents. One is left to wonder if DOE is hiding the truth in the Revised EA.

The environmental impacts of the facility could be very significant in the event of a release. Even a percentage of 10 liters, released into the environment, could mean thousands of people perishing due to the fact that for many BSL-3 agents there is a low number of agents needed to cause disease and a high mortality rate. Add that to the high population on-site at LLNL and the densely populated residential areas surrounding LLNL. When the impacts could potentially be this great, an EIS is required.

Transportation Security / Terrorism Concerns Must be Addressed

According to the Revised EA, an estimated 60 shipments per month (in and out) will travel by commercial courier. Livermore Lab just had an incident in September, 2005, where it mislabeled and improperly packaged "select agents" (biological organisms that are historically associated with bio-warfare purposes) and shipped them to two offsite laboratories. The incident resulted in a suspension of transfers during a Centers for Disease Control and Prevention investigation. This is mentioned in passing, but not discussed in any depth. Transportation risks should be studied in the context of accidents and intentional diversion.

Security / Terrorism Analysis in the Revised EA is Incomplete and Inadequate

Given the high profile of DOE's nuclear weapons activities at LLNL, its connection to the nation's nuclear weapons (and weapons policy), the on-site storage of large quantities of plutonium, highly enriched uranium and other radioactive materials at LLNL and the proposed collocation of deadly pathogens in a prefabricated BSL-3, Livermore Lab may soon offer "one-stop shopping" for terrorism.

LLNL's crowded site and proximity to 7 million people (unique in the nuclear weapons complex), taken together with its proposed mixture of deadly pathogens and nuclear materials, will soon offer terrorists (and/or a

disgruntled employee) an increasingly tantalizing target and all the resources necessary to wreak havoc upon society.

Because of the threat of terrorism, the DOE has stated that it plans to remove the weapons usable quantities of plutonium and highly enriched uranium out of Livermore Lab by the end of 2014. (Note the potential that nuclear and biological weapon materials may be together at the LLNL main site for up to 7 years.)

Why was the removal of special nuclear materials out of LLNL (and the security reasons prompting that removal) not considered in the Revised EA. We believe it is relevant. If DOE is planning to remove the weapons usable quantities of special nuclear material because of security concerns, why move in large quantities of biological weapon agents stating that there are no security concerns?

In some reasonable scenarios, terrorists and/or disgruntled employees may be preferentially attracted to the availability of highly concentrated, deadly bio-agents in a portable building located outside the higher security "Superblock" at LLNL rather than the nuclear materials located inside the Superblock.

Moreover, the Revised Environmental Assessment does not do an adequate job of analyzing the environmental and health impacts of potential acts of terrorism. For example, it too optimistically assumes that most bio-agents would be destroyed in a terrorist attack, and therefore not many would escape into the environment and pose a hazard. This is more in the category of wishful thinking than reasonable analysis.

The Revised EA suggests that if there were a major breach of the facility then a fire would ensue and eliminate most of the potentially deadly bio-agents (page 59).

Further, the Revised EA postulates that even if the fire it expects doesn't occur – disinfectants would break open and kill off the bio-agents. On page 42 of the Revised EA, it states that “at any one time there would be just a few liters each of chemical disinfectants.” It seems too tenuous of a nexus to assume that fire or a few liters of disinfectants will eliminate most bioagents released in a terrorist attack.

It defies reason that terrorists would automatically trigger a major fire or disinfectant release on the exact spot where the bio-agents / cloud of bio-agents would be released. Other, unanalyzed scenarios that don't involve a conveniently located fire or disinfectant release are possible -- and must be considered.

Furthermore, even in the event the conveniently located fire and/or disinfectant release did take place, it is nonetheless true that some pathogens to be stored and used in the LLNL BSL-3 are very hardy with respect to temperature and significant quantities of them may not be destroyed in the fire but, instead, may be lofted by hot air and dispersed over the population.

Further, some agents to be stored and used in the BSL-3 are not amenable to destruction by the disinfectant that the EA says will kill them.

The scenario in the Revised EA does not specify the quantity of bio-agent released in the scenario, the type of bio-agent (including its form and characteristics), the fraction that might survive, the possible dispersion of the plume (where, what weather pattern is assumed), the minimum number of spores, cells or microorganisms needed to cause disease in humans, the percentage of people that the EA thinks will get treatment vs. the percentage that won't, the percentage of people treated who will sicken and die any way (e.g., chronic Q fever reportedly kills 65% of the sufferers who did receive proper treatment), and other key data.

Without data, it is unclear what assumptions the Revised EA may be piling up -- one on top of the other.

Further the terrorism analysis fails to study practical things in detail such as whether the LLNL BSL-3 facility is structurally resistant to a terrorist attack, whether decontamination procedures are in place if workers or community members are exposed to released bioagents or whether security workers and local emergency management teams are trained and equipped to respond to this type of emergency. Although the Revised EA does say that LLNL spoke with local hospitals – it isn't clear what that actually means.

Please describe in more detail how prepared the hospitals are – which ones have the equipment and training to handle a mass outbreak of bioweapons agents – and the extent of the training given. The Revised EA also makes the dangerous assumption that the security will function seamlessly and that the workers will be pre-screened and well trained.

Reasonable scenarios should be evaluated wherein a fire or disinfectant do not eliminate most or all bio-agents. Evaluate how a plume of bio-agents would spread and potentially affect populations and the environment surrounding LLNL to the west and the Tri-Valley and San Francisco Bay Area. Evaluate also the impact on the Central Valley (while less heavily populated than the metropolitan Bay Area, the impact on the people and the environment may still be substantial). In addition, we note that the LLNL BSL-3 will genetically modify bio-warfare agents. What might the impacts of the release of a "superstrain" be?

In the context of airborne plume migration, we note that following a release of radioactive tritium from the LLNL main site (Building 331), Livermore Lab researchers found evidence of tritium deposition stemming from that accident as far away at Fresno, California -- hundreds of miles away.

Airplane scenario

The Revised EA implausibly concludes that a plane crash into the facility would *not* result in a release of greater magnitude than other catastrophic events already considered in the EA. Yet, the catastrophic bounding accident scenario in the EA involves loose caps on a centrifuge.

This is not a hard look or even a meaningfully intelligent look at environmental impacts. A centrifuge accident is a common occurrence in a lab setting and does not bound the range of events that could result in a release.

Further, if a plane hit the building there is a likelihood that agents would be released from more than just "in process" containers. An airplane crash into a portable facility could logically also release pathogens that are in storage there. In this regard we again note that DOE documents outside of the Revised EA say that the LLNL BSL-3 would house up to 100 liters of bio-agents, including 25,000 discrete samples of various pathogens.

If the EA is actually trying to conclude that the BSL-3 storage freezers are plane-crash proof, please so state explicitly. We are not aware that bio-agent storage freezers pass such a test. The certification procedure for airplane hits on freezers should be detailed in the final NEPA document.

The Revised EA goes on to compare an airplane crashing into the LLNL BSL-3 to "lambing season at various local ranches...." This is an insulting comparison, does not pass the "laugh test" and fails to meet the standard of review required by NEPA.

This bio-warfare agent research facility represents a very serious risk to the surrounding community, and, in the event of a rupture in the facility or other catastrophic release, it could threaten the community, the entire Bay Area or the Central Valley.

Theft of Bioagents

The revised EA on theft and subsequent release (page 62) – compares theft of dangerous, deadly biowarfare agents concentrated in solution with the very dispersed bioagent present sometimes in the environment (such as Anthrax) and suggests that terrorists would just as soon cultivate bio-agents obtained from the environment than obtain them from LLNL's BSL-3.

This comparison defies logic. A terrorist may be much more interested in obtaining a milled biowarfare agent or an biowarfare agent concentrated in solution. By stealing from the LLNL BSL-3 a terrorist or disgruntled employee could obtain one trillion cells in solution from the facility (in use at the time) and many, many, many more from the storage locker/fridge in the bio-lab.

Moreover, LLNL may house novel agents and diseases stemming from the fact the LLNL BSL-3 will be engaged in genetic modification experiments involving bio-warfare agents. Too, the LLNL BSL-3 will be aerosolizing bio-agents and infecting up to 100 small animals at a time. This means that the pathogens will be in a form that can be easily dispersed as an aerosol.

These facts make the LLNL BSL-3 a particularly attractive target. Yet, these facts are not considered in the Revised EA.

The threat of theft by a terrorist or of a disgruntled employee is very real. The DOE and Livermore Lab must deal honestly with the risk, not attempt to minimize analysis (actual risk, not the assessment of risk, is what must be minimized). This document is not an honest evaluation.

Terrorist / Disgruntled Employees

The EA assumes on p. 59 that deliberate damage would cause a fire or rupture the containers of disinfectant. However, if the terrorist scenarios are deliberate (and by definition many of the scenarios would be), it's possible (even likely) that the terrorist would not act in a manner that would not cause the bio-agents to be destroyed. This assumption in the Revised EA appears to be on the basis of unfounded conjecture. Again, these assumptions are overly optimistic and do not meet the standard for adequate review.

This document should evaluate the ability of the physical structure to withstand various terrorist scenarios. This document should also disclose LLNL's efforts to train and equip its protective force to deal with possible bioterrorism / nuclear terrorism scenarios.

Further, the Revised EA shirks genuine consideration of the impacts of terrorism by suggesting that because there are other BSL-3s in the U.S., the LLNL BSL-3 will not contribute much to an increased likelihood of an act of terrorism.

We wonder if the Nuclear Regulatory Commission, in producing its court-ordered security analysis regarding the Diablo Canyon Nuclear Plant (ordered by the same 9th Circuit Court), will try to dodge in-depth review on the basis that there are other nuclear power plants in the country and so Diablo Canyon does not add much to the numeric likelihood of a terrorist attack. Under this reasoning, NEPA and the 9th Circuit ruling would be gutted.

The issue at hand, under NEPA, is to adequately and completely analyze the impact of a terrorist attack, not to debate likelihood. In the Revised EA, DOE seems to have confused these two very different approaches. In producing a final document, DOE must remedy this situation.

Security Workers

Although the Revised EA paints a picture of security at LLNL that is fool-proof and functions as a well-oiled machine – this is not an accurate picture of security at the Lab. Recent history -- including spy scandals, whistleblower retaliation, DOE Inspector General reports and Government Accountability Office reports outlined below -- suggests that the Revised EA overstates the completeness of security at LLNL.

For instance, Mathew Zipoli, former security police officer at LLNL (and then-Vice-President of the Security Police Officers Association) went public explaining how low the morale was at Livermore Lab among the security forces. He documented that security operations at LLNL were grossly incomplete due to inadequate training and protection of security officers (e.g., lacking needed protective gear), noncompliance with numerous DOE and other requirements, and more. Security forces were not trained to use protective suits and had no detection devices to deal with a chemical attack by intruders, Zipoli stated.

Please specify in the final NEPA document if (and how) security forces are trained to deal with a biological attack and/or release -- and the equipment they have in that event. Have security forces been trained to handle accidental or deliberate on-site release of BSL-3 agents, including but not limited to live anthrax, botulism, Q fever and plague? How will they handle accidental or deliberate releases involving genetically modified biological agents, including so-called superstrains?

The DOE Inspector General report on LLNL security entitled *Inspection of Lawrence Livermore National Laboratory Protective Force and Special Response Team* found that “Livermore’s ability to comply with the Site Safeguards and Security Plan is Questionable.” (IG Report at 4) The Site Safeguards and Security Plan, a facility master planning document for security, is required by DOE Order 470.1.

“Livermore has consistently had far fewer than the minimum number of security officers required on staff in order to comply with the Site Safeguards and Security Plan. Although the minimum number of SPO-III security officers required to guard LLNL is 81, at times that this investigation was conducted, LLNL had between 43 and 55 certified SPO-III officers available for duty.” (IG Report at 7) “Many of those officers are new hires with minimal experience, due to the high attrition rate.” (IG Report at 7-8) “During the course of our inspection, we noted several significant issues that could directly impact the effectiveness of the Livermore’s Special Response Team. These issues included an increasing attrition rate, and a new hire rate of approximately 50 percent during the past three and one half years.” (IG Report at 6)

Please describe the current state of LLNL security forces including how many you have onsite in general, how many are responsible for the bio-lab at any one time, and whether they have the specialized training and/or equipment to handle a bio-related disaster.

Human Reliability Systems

In April, 2007, the DOE approved security clearances for more than three dozen workers over a 13-month period, despite evidence that those employees had used illegal drugs within the year prior to approval. Energy Secretary Samuel Bodman commissioned a task force to examine DOE’s personnel security program.

According to Secretary Bodman, the program’s existing policies and guidelines are sound and have proven effective over time but they have not been applied consistently. The task force made several recommendations for strengthening the program, including rejecting security clearances for applicants who admit to using illegal drugs within 12 months prior to their clearance request.

This situation is not new. Poor management has plagued the Livermore Lab for a very long time. Reported on February 28, 2003 in the San Jose Mercury News, Linton Brooks, head of NNSA, described the sloppiness of the DOE weapons labs' business practices as "cultural" and "systemic." He criticized the University of California (which managed both LLNL and the Los Alamos Lab) for its detached style of management, saying, "Lax management in one area breeds lax performance in other areas. "

The Revised EA generally outlines methods of establishing human reliability but does not provide a realistic assessment of the myriad of implementation flaws that must be expected. Please analyze a scenario where the human reliability programs do not function maximally and evaluate the environmental impacts that could result.

History of Security Failures

In April, 2003, LLNL top security official William Cleveland resigned in response to accusations from the FBI that he stole classified information and passed it to a Chinese informant over a period of years. Cleveland had been head of LLNL's Security Awareness for Employees program, which identifies foreign intelligence threats, briefs LLNL officials traveling to other countries, and gathers information about espionage, since 1993.

Also in the spring of 2003, there were other serious security incidents at LLNL. In one incident, an LLNL security officer's skeleton keys disappeared from a security cabinet. The keys allowed access to virtually every area and facility at LLNL. Security officials waited three weeks before reporting the incident.

In another incident, a LLNL security officer's access badge disappeared. Six weeks passed before this incident was reported to LLNL officials. The access badge, when used in combination with a numeric punch code, opened approximately 3000 office doors at LLNL.

The GAO performed a review of nuclear site security at various DOE facilities from December 2001 through May 2003. GAO found that DOE's National Nuclear Security Administration (NNSA) had substantial problems with management and oversight on security issues and it lacked clearly defined roles and responsibilities resulting in inconsistent contractor oversight.

The GAO said that DOE contractors fail to analyze security problems consistently, and that corrective actions are developed without fully considering the problems' root causes and risks posed. Furthermore, NNSA is short-handed and may lack adequate staff to oversee security activities. These security failures are just a sample of many others that have occurred over the past decade.

The possible effects of terrorist attacks or other security failures on Livermore Lab vary widely depending on whether biological agents are involved, what biological agents are involved, what quantities are involved, etc. In addition, at LLNL, nuclear materials could be involved as well. Impacts should be measured in terms of contamination area, health effects, and economic consequences.

In addition to environmental impacts, the economic and psychological consequences can also be very large.

The Revised EA must try to quantify the environmental impacts of these acts and cannot avoid an honest assessment by arguing such things as terrorists won't be interested in a BSL-3 because certain bio-agents exist occasionally in nature, or that the maximum credible release scenario involves the loosened caps on a centrifuge inside the BSL-3.

Precedent-Setting Nature of the Revised EA Must be Considered

The adequacy and completeness of the security analysis for the LLNL BSL-3 is important first and foremost because of the severity of the threat and the potentially catastrophic nature of its impacts. Further, the completeness of the review is critical because it will be precedent setting in at least two ways.

1. As mentioned this is the first terrorism / security analysis being conducted pursuant to the 9th Circuit ruling in two cases, (a) litigation brought against the Nuclear Regulatory commission regarding security risks at its Diablo Canyon Nuclear Power Plant and (b) litigation on the adequacy of the EA and FONSI for this BSL-3 (brought by Tri-Valley CAREs and Nuclear Watch of New Mexico). Thus, the inadequate job done by DOE on this Revised EA is likely to reverberate with other federal agencies if it is not appropriately remedied.

2. The LLNL BSL-3 is the first DOE facility to undergo a terrorism / security analysis. Thus, the inadequate job done by DOE in this instance is likely to reverberate with other DOE NEPA reviews. In this regard, we note that DOE has issued only interim guidance for preparation of this type of analysis under NEPA. Perhaps DOE is putting the cart before the horse here -- and this review is so startlingly inadequate in part because there is no final guidance in place. Thus, the DOE should hit the pause button on this process and complete its guidance. Certainly, this Revised EA cries out for guidance. We are concerned, too, that if this inadequate assessment is used by DOE to attempt to justify a new FONSI, that will signal other DOE facilities that the agency is not serious about examining terrorist / security issues.

Bio-Accidents at LLNL Have Happened in the Existing, Lower-Hazard Facility, Could be Severe in the BSL-3

The revised Environmental Assessment did not analyze the environmental and health impacts of a release of 100 liters of bio-warfare agents at one time. In fact, the revised EA failed to even disclose that other Livermore Lab and Department of Energy documents state the BSL-3 will house up 25,000 different samples of pathogens adding up to a total of 100 liters of bio-agents at a time. This is a large amount and the EA should state this number and analyze the environmental impacts of a release of this magnitude.

Although LLNL boasts a perfect record, our investigations found that LLNL had several mishaps in the past with their lower level BSL-1 and BSL-2 facilities, including incidents wherein:

- (1) employees mislabeled bio-wastes, causing hazardous waste personnel to suffer needle puncture,
- (2) employees potentially used and then threw out unattenuated (e.g., live) anthrax with the general trash. The experiments were not supposed to involve unattenuated anthrax at all. And,
- (3) an employee dropped radioactive bio-probes on the floor, left the spill over the weekend, and tracked radioactivity off-site.

On November 3, 2003, Tri-Valley CAREs filed a Freedom of Information Act request for releases and contamination incidents since 1977 at the LLNL Biology and Biotechnology Research program. This was defined programmatically on the LLNL web. The documents we received include but are not limited to:

- An incident report detailing a series of mishaps in March 1999 with airborne *Bacillus anthracis*, the causative agent for anthrax. On March 1, 1999, experiments indicated that LLNL was mistakenly conducting experiments with a virulent strain of *Bacillus anthracis* "obtained from a BBRP colleague." LLNL did not terminate operations with the organism until March 5, 1999. The Institutional biosafety officer was not notified until March 17. The report's 13 findings include that "The Biomedical

Technician did not use engineering controls and mistakenly disposed of contaminated equipment and utensils in the trash." The findings also specify that "Access Control" was not maintained and "cross contamination" with nearby food was possible.

- An final occurrence report detailing an accident in which a LLNL biolab employee sent improperly labeled waste to the LLNL hazardous waste facility. The waste was listed as "99% laboratory trash (with 2-mercaptoethanol, phenol and chloroform)." However, the bag improperly contained "at least two hypodermic needles that were not listed on the label." As a result: "One of the needles penetrated the bag and stuck the technician in his arm."

In 2006, Tri-Valley CAREs obtained a copy of a DOE/NNSA report detailing safety violations and accidents at LLNL including an account of a 2005 radioactive phosphorus spill in the LLNL biology center. In that instance, Lab bio-personnel failed to respond when the accident was reported. No qualified staff person came to examine the contaminated worker or to develop a cleanup plan for the spill. As a result, the worker tracked radioactive material off-site and the bio-building remained in what the DOE/NNSA report called "an unknown state" for several days.

Although it is often claimed that bio-accidents rarely happen in the US, the truth is much less clear. The frequency of accidents is widely disputed and there is not a comprehensive federal reporting system for accidents and releases. In fact, in the last few years there have been several lab-acquired infections and agent releases in biolabs in the US that went undisclosed for months.¹ A history of recent US accidents, releases, and infections should be included in this NEPA analysis including the accidents footnoted below.

In one instance that only became publicly known in the past few weeks, Texas A&M is being investigated after failing to timely report to the Center for Disease Control and Prevention (CDC) that a student researcher was infected with brucellosis in 2006. Brucellosis is an infectious disease caused by the bacteria brucella which is typically transmitted by animals. The student was accidentally infected while cleaning a chamber used to infect mice with aerosolized brucella for research purposes on Feb. 9, 2006. The researcher told Texas A&M officials of the brucellosis diagnosis on April 10 or 11, 2006.

The incident occurred when the researcher was cleaning a chamber that contained aerosolized brucella by climbing partially into it, which Texas A&M officials said was inappropriate lab protocol. Texas A&M officials later concluded that the brucella bacteria likely entered her body via her eyes as a result of this improper procedure.

This type of agent would be permitted to be studied at LLNL. The Texas A&M incident is a case of human error – a type of error that we are concerned is a great risk at LLNL. More than 400 labs across the country are now using bioweapons for research with about 20,000 people at those facilities, a dramatic rise from years past. With the flood of new researchers entering the field, the chance for error due to inexperience increases.

Further the accident described above involved a aerosol chamber. A gaseous suspension of fine particles resulting from aerosolization makes these agents far more dangerous in the event of accidental occupational

¹ Fort Detrick researcher exposed to Ebola from pinprick in 2004. Boston University lab workers were exposed to Tularemia in 2000 and again in 2004. Anthrax spores were found strewn outside of lab rooms in Fort Detrick, leaving one worker testing positive for exposure in April 2002. Oakland Children's Hospital improperly received and experimented with virulent anthrax until the FBI intervened in 2004. Foot and Mouth Disease spread to different internal parts of Plum Island facility in 2004. Laboratory-acquired infection almost killed a government microbiologist in Beltsville, Maryland in 2003. Workers at the US Department of Agriculture's (USDA) Food Safety Intervention Technologies Research Unit in Wyndmoor, Pa., fell ill in May 2002. In March, 2000, an USAMRIID worker contracted glanders due to accidental exposure.

exposure and, in the case of failure of containment, public exposure. The Revised EA should look at the specific hazards of aerosolization for workers and the local community in its accident analysis.

The Revised EA should not rely upon outdated accident modeling. Please make sure that the accident modeling relies upon current, LLNL site specific, and pathogen specific data.

Please describe how the public will be notified in the event of an accidental release or lab worker exposure and/or infection. Additionally, please provide the facility limits for the amount of bio-agents that will be stored inside the facility as a whole and for each room. Also please describe whether (and how) LLNL and/or DOE NNSA will mandate public reporting of security breaches, loss or inability to account for biological materials, and environmental releases.

DOE Has a History of Accidents at LLNL, which are Relevant to Assessing the Hazards of the Proposed Action

LLNL main site groundwater is substantially contaminated with volatile organic compounds (VOCs) such as trichloroethylene, carbon tetrachloride, Freon, chromium and tritium (radioactive hydrogen) above state and federal maximum contaminant levels, also called "action levels."

Soils on site have additionally been contaminated with plutonium above the federal "screening level." There is an off-site contaminated groundwater plume emanating from the LLNL main site. The southwestern edge of that off-site plume includes groundwater underneath neighborhood homes.

Remediation for the above-listed pollution is part of the current and ongoing LLNL main site Superfund cleanup process. That cleanup process has been calculated by LLNL to require about 53 years.

The LLNL main site and surrounding community in Livermore have been subjected to elevated levels of tritium, among other contaminants. This LLNL operating history with radioactive and toxic materials is relevant to the proposed operation of the LLNL BSL-3 because similar incidents could occur with biological agents. LLNL has had numerous releases of tritium over its years of operation, resulting from a variety of factors, including filter failures and employee error, two issues relevant to the planned operation of a BSL-3 at LLNL. The 1991 Report of the Task Group on Operation of DOE Tritium lists the following tritium accidents for LLNL between 1986 and 1991 --

:

- 125 curies, released 12/15/86 due to a failed pump and cryogenic vessel breach;
- 198 curies, released 4/14/87 due to equipment failure and operator error;
- 145 curies, released 1/19/88 unknown cause or stack malfunction;
- 138 curies, released 1/25/88 unknown cause or stack malfunction;
- 653 curies, released 5/15/88 due to unexpected presence of tritium in gases being vented;
- 120 curies, released 8/1/88 unknown cause or stack monitor malfunction;
- 112 curies, released 2/28/89 unknown cause or stack monitor malfunction;
- 329 curies, released 8/22/89 due to improper pressure relief of container.
- 112 curies, released 10/31/89 due to mistaken belief that a palladium bed contained only deuterium and (non-radioactive) hydrogen;
- 144 curies, released 4/2/91 due to improper preparation of a reservoir.

The Report of the Task Group on Operation of DOE Tritium Facilities further states that management failures at LLNL were the direct cause of the "accidental release of tritium on April 2, 1991 and the resultant radiological exposure of facility personnel."

There have been other incidents at LLNL where tritium has been release to the environment. To give but one example, on December 24, 1990, building 292 was contaminated due to freezing weather that caused a flood.

In addition, that freeze resulted in a tritium leak in an underground tank, releasing tritium into the soil. A pine tree in the area was tested and found to be drawing the radioactive water through its roots and transpiring tritium through the needles into the air at concentrations measured at 6 million picocuries of tritium per liter of water. The state and federal maximum contaminant level for tritium in water is 20,000 picocuries per liter. The tritium released from the tank into the soil in this accident also migrated downward, soon thereafter reaching into the groundwater. See Screening Calculations for the Radiological Hazard from Tritiated Water, Tritium Emissions from a Pine Tree Adjacent to Building 292, LLNL.

Deficiencies in safety practices led the Defense Nuclear Facilities Safety Board (DNFSB) to recommend and obtain shut down of all plutonium experiments and machining operations at LLNL's plutonium facility for more than 6 months in 1995, according to testimony from DNFSB officials at a December 6, 1995 public meeting in Livermore. The DNFSB was created by Congress to monitor operations at DOE's defense facilities. DNFSB officials cited deficiencies in safety practices at LLNL including a missed inspection and lack of procedures to ensure that the plutonium facility's ventilation, nuclear accident alarms, fire suppression systems and emergency power were adequately maintained, tested or operated.

After LLNL proclaimed it had resolved the problems cited by DNFSB and reopened its plutonium operations, the DNFSB had to intervene again and obtain a shut down of all daily operations in the LLNL plutonium facility in October 1997. In July of 1997, LLNL had been cited for 15 serious criticality safety violations. A criticality is a runaway nuclear chain reaction. In October, a DNFSB investigation uncovered additional problems at the LLNL plutonium facility. The DNFSB report cites:

- unaddressed fire dangers;
- situations where criticality safety personnel "do not appear to have a presence in the workplace";
- situations where "no supervisor appears to be responsible for work being done by plutonium handlers and technicians";
- planned corrective measures that do not recognize the actual problems and therefore do not propose to correct them; and
- work permits for handling, moving and packaging nuclear material that contain work description errors and omissions.

In its October 1997 report, the DNFSB further notes an instance where the investigator directly observed an operation involving uranium in which work was performed "without regard to its description in the permits."

The DNFSB published a notice in the federal register citing LLNL with storing plutonium in paint cans and food tins.

In January 2005, the LLNL plutonium facility was again shut down due to systemic safety problems. The DNFSB weekly reports on the shutdown contain numerous violations, including defects in the plutonium facility's equipment, safety management and radiation protection. Various reports stated that glove boxes had inadequate seismic restraints, cracked ducts containing plutonium dust were inadequately repaired but were

instead taped over, inadequate records were maintained so that blueprints of some glove boxes could not be found and the operating history of the workstations, including what materials had been used in them, was lost.

In October 2003, twelve LLNL employees were potentially exposed to plutonium that leaked from a glove box known to have a faulty seal, but used nonetheless. The leak occurred after a routine power outage caused the fan responsible for maintaining negative air flow to stop working. Next, the alarm nearest the glove box failed to sound. However, an alarm positioned outside the door of the room was triggered by the leak. When that alarm went off, it was dismissed as an aberration. Seven plutonium handlers and five security police officers were allowed to enter the plutonium-contaminated room.

Over a 6-month period in 2004, multiple workers at LLNL were exposed to airborne plutonium particles on at least 3 to 5 separate occasions while packaging plutonium-contaminated wastes.

Plutonium from LLNL has found its way into the Livermore community. Elevated levels of plutonium have been found in off-site air monitors to the east of LLNL and in soils in a City park to the west of LLNL.

Along with plutonium, americium was accidentally released through drains at Livermore Lab and has entered the City's Sewage Treatment Plant. Over a 15-month period in the mid-1990's, Livermore Lab's releases to the City Sewage Treatment Plant violated its permit limit on 14 occasions. These releases included heavy metals and chemical pollutants.

In February 1997, news accounts carried the story of an accident involving a uranium fire at LLNL. The incident involved the ignition of uranium filings in a workstation. A machine shop worker received radioactive contamination on his hair and shoes. Two LLNL fire fighters who responded to the accident received contamination on their gear.

The above is not at all a complete list of accidents at LLNL, but is only a small sampler intended to be instructive as to some of the types of accidents that occur with alarming frequency at LLNL. These and other accidents at LLNL are relevant to the BSL-3 at LLNL because the same sorts of errors and disregard for safety regulations could result in biological agent releases, just as they have resulted in radioactive and toxic releases at LLNL.

HEPA Filter Analysis is Inadequate and Must be Augmented

Most HEPA filters at LLNL are flimsy, weak, fiberglass, paper and glue structures mounted in wood or metal frames that can fail completely when wet, plugged, hot and over pressured from fires, explosions, blowers and even severe storms. According to publicly available documents, HEPA filters have an overall failure rate at DOE facilities of approximately 12%. Even under optimal conditions, HEPA filters are unable to effectively contain all bio-agents measuring between 0.03 and 0.3 micrometers. HEPA filters can be ineffective against the physical characteristics of many bio-agents, such as Rickettsia.

Others have detailed the potential problems with HEPA filters and have called on DOE to conduct a more thorough analysis in its Revised EA. We concur. Please address how LLNL intends to compensate for the inherent weaknesses in the filtration system.

Furthermore, too many of the accident and terrorism scenarios in the Revised EA anticipate perfect functioning of the HEPA filters. The analysis should also disclose the impacts if the scenario involves HEPA failure.

Earthquake Analysis is Inadequate and Must be Augmented

This BSL-3 facility should not be operated in this seismically active area. The Livermore Lab sits less than 200 feet from the Las Positas fault zone and the Greenville fault is nearby. An earthquake in 1980 injured 44 people and cost LLNL many millions in structural damages. In 2004 an LLNL study found that 108 buildings on-site have potential seismic problems. 22 have unacceptable risks and 41 need detailed evaluation.

The Revised Environmental Assessment mentions that new research by the USGS determined there is a 62% chance that one or more magnitude 6.7 earthquake will occur in the area within the next 30 years. Other studies predict a MM 10 shaking (very violent – on a scale of 1 to 10) to occur in the Livermore area. The revised EA mentions these facts, but does not fully account for them in conducting its hazards analysis.

Need for Programmatic Review

Construction of the LLNL and LANL BSL-3 facilities, since they are the first advanced biowarfare research facilities within the Department of Energy, will establish a precedent for future BSL-3s and related biological and chemical agent research facilities at DOE facilities.

DOE has proposed operating advanced biowarfare agent research labs in Livermore, Oak Ridge and several other sites. DOE's own Inspector General Report 0695 has stated that the biological research activities within the Department of Energy lacked appropriate federal oversight, consistent policy, and standardized implementing procedures, resulting in the potential for greater risks to workers and possibly others.

Quotes from the DOE IG Report, include:

“We concluded that there was insufficient organization, coordination, and direction in the Department’s biological select agent activities. Specifically, the Department’s activities lacked sufficient Federal oversight, consistent policy, and standardized implementing procedures, resulting in the potential for greater risk to workers and possibly others from exposure to biological select agents and select agent material maintained by the Department.” In the observations and conclusions section on page 2 of the IG report.

“Ensure that required NEPA reviews are conducted prior to the start of biological select agent and select agent material activities and revised, as needed, when significant changes occur in the activities.” Pg. 25 recommendations section.

“The department responded to this recommendation in saying that “the Department will ‘continue to address biological research within individual laboratory annual NEPA planning summaries and otherwise according to Departmental requirements’ to ensure that appropriate consideration is given to NEPA compliance early in the planning process.” Pg 26 Management comments

Please describe how this report has been responded to and what is happening now regarding DOE's efforts to coordinate select agent programs. This cries out for a NEPA programmatic review so that each lab will have clear guidance on its role in the Department's network of laboratories to avoid mismanagement and duplication. An adequate review of cumulative impacts should be conducted.

Further, as stated above, a review of alternatives should be undertaken as to where the best locations would be for bio-work in the DOE complex or whether it would be wiser to have these labs outside the purview of DOE entirely and within the purview of another agency, such as the Centers for Disease Control.

Need for Non-proliferation Analysis / Compliance with International Law

Aerosolization of select agents is potentially a form of weaponizing them. At a minimum, it is a step in the process toward weaponization. So is conducting genetic modifications of bio-warfare agents.

The Biological Weapons Convention (BWC), a treaty ratified by 144 nations including the United States and Russia that came into force in 1972, prohibits the production, stockpiling, development, and use of biological weapons. Article 1 of the Convention permits research on dangerous biological agents and toxins that is “peaceful, prophylactic, or protective” in nature.

However, distinctions between offensive and defensive applications of research on bioterrorism agents are difficult to establish at numerous stages of the research process.

To resolve this dual-use dilemma, in September of 1998, BWC member states began a process of drafting a verification and enforcement protocol to ensure routine declarations of research on biological warfare agents and inspections of declared facilities. Unfortunately, during negotiations in November 2001, the U.S. announced that it would not permit a binding verification agreement to move forward. As a result, international monitoring of biological defense and warfare is unlikely to emerge in the near future.

Livermore Lab and Los Alamos Lab have designed and developed every nuclear weapon in the U.S. arsenal, and LLNL just won the design competition to develop the next new U.S. nuclear warhead. LLNL is known worldwide as a "successful" facility for the design of nuclear weapons of mass destruction. Collocation of an advanced biowarfare agent facility inside LLNL's classified nuclear weapons laboratory presents a whole host of issues that could undermine the Biological Weapons Convention.

First, this type of research is inherently dual use. That is, the “defensive” or “peaceful” bio-weapon research on select agents that will be conducted at LLNL will be virtually indistinguishable from offensive work in the early stages.

Moreover, where defensive programs', methods, training and equipment meet the requirements of offensive programs, the potential for offensive uses for the program in a future crisis is evident. Please address how LLNL will ensure that their work could not be easily adapted for offensive purposes – alleviating the fears of the US public and other nations.

Second, collocation within highly classified facilities may pose unique problems for verification and enforcement of the BWC. It may be extremely difficult for anyone outside of the facility to verify that the program is restricted to defensive purposes. Please provide a thoughtful analysis of how concerned citizens and countries could verify that the research in the laboratory is limited to purely defensive activities.

Third, collocation creates a “perception problem”, irrespective of whether offensive or defensive work is conducted inside a classified nuclear weapons lab. Other states and groups may perceive that new biological weapons are under production behind closed doors. Please provide an explanation of how LLNL plans to contend with this serious perception problem.

Fourth, collocation creates secrecy problems that undermine efforts to evaluate a state's compliance with the BWC. Please describe how LLNL will ensure that the principles of openness, transparency and public accountability will guide the work conducted at the BSL-3.

Please provide a dedicated section in the Revised EA to address concerns posed by the placement of advanced biowarfare agent research inside secret nuclear weapons laboratories.

NBACC Connections Must be Detailed in the Revised EA

The Department of Homeland Security has inaugurated its National Biodefense Analysis and Countermeasures Center (NBACC) that is headquartered in Fort Detrick, Maryland but has pieces located at DOE, specifically at LLNL.

According to a slide show in February 2004 by LTC George Korch, Science and Technology Directorate at the Department of Homeland Security, NBACC will develop, characterize, produce and weaponize new and genetically engineered biological agents. <http://www.cbwtransparency.org/archive/nbacc.pdf>

Widespread concern is growing that these activities will not only violate the BWC's restriction on developing and producing agent delivery devices but that they may effectively give the United States a modern offensive biological weapons capability. We know that work at LLNL will intersect with work done for the NBACC.

We don't believe that the US government would stand by while many countries of the world upgraded, expanded and undertook cutting edge "biodefense" research inside their secret military installations. The US should not hold a different measuring stick to our own actions. Overhauling existing labs in military facilities so that they can perform cutting edge genetic research on agents known for their superior weapons capabilities sends the wrong message to the rest of the world.

Although some of this research may well be legitimate and necessary, it should be conducted under the auspices of civilian agencies.

Please consider the following critical analysis of US biodefense work by Ambassador James Leonard, Milton Leitenberg, Richard Spertzel entitled *Biodefense Crossing the Line* in the Environmental Impact Statement and include a copy for public consideration. <http://www.fas.org/irp/threat/cbw/biodefense.pdf>

Ambassador Leonard was the chief U.S. negotiator for the Biological Weapons Convention under President Richard Nixon as Assistant Director of the U.S. Arms Control and Disarmament Agency (ACDA) from 1969 to 1973.

Please provide a dedicated section in the Revised EA to address concerns posed by the placement of advanced biowarfare agent research inside secret US military laboratories.

Lack of Adequate Whistleblower Protection Must be Addressed

There is a serious lack of adequate oversight of LLNL facilities. No independent regulatory agency is responsible for safety at LLNL on a continuing basis. Safety is often a matter of self-regulation (e.g., DOE regulating itself). In this scenario, it is essential for workers to be protected if they report safety or health problems associated with the BSL-3 facility.

A mechanism should be in place to provide all workers with meaningful whistleblower protections. Moreover, all workers should be apprised of criminal laws against developing biological weapons. 18 USC § 175. Workers who suspect that their work is for offensive purposes or is incompatible with international law should be given robust and effective whistleblower protections should they speak up about their concerns.

Because the United States is currently opposed to binding external constraints and oversight of scientists and would prefer to have scientists self-monitor their research through the use of Institutional Biosafety Committees and similar committees, it is essential that scientists working in the biodefense arena be afforded the structure within which they may comfortably speak up about potential misuse of their research activities. It is the Department of Energy's responsibility to provide this structure.

Please state in the Revised EA if such a structure exists and how it will be designed so that the public can be informed about the self-regulation process of the research at Lawrence Livermore National Lab.

18 USC § 175 is the US criminal implementing regulation for the Biological Weapons Convention. It articulates prohibitions with respect to biological weapons. Specifically, it prohibits anyone from knowingly developing, producing, stockpiling, transferring, acquiring, retaining, or possessing any biological agent, toxin, or delivery system for use as a weapon. We are concerned that offensive research could occur, whether sanctioned by any management or not, and prohibitions should be clearly stated and enforced. As you know, the FBI's no. 1 suspect for the anthrax releases that plagued the country in the aftermath of September 11th was a US government scientist. These events can and do happen and preventative measures should be taken.

We want to preemptively foreclose a shallow response to our concerns that "the Biological Weapons Convention prevents the US from developing offensive weapons." Often we hear from federal officials simply that "the US signed and ratified the treaty and therefore there could be no weapons here." The weakness of this response is that the language of the BWC is inherently problematic. It allows for bioweapons research so long as it is for prophylactic, protective or other peaceful purposes. This loophole makes the treaty's interpretation one that is "intent based".

We believe that the US must do more than waive a poorly constructed treaty around and say it is in *technical* compliance. Thus, above and beyond the BWC, the US should spare no effort in demonstrating to the rest of the world that it is not engaging in biological research that skirts the treaty. It should do so for the safety of its own citizens.

This should be done through maximum transparency efforts. An alternative in the alternatives analysis in the Revised EA, for example, DOE should discuss this problem and should evaluate the possibility of transferring this work to a civilian laboratory where oversight and transparency would be outside of the control of the US nuclear weapons establishment. This would send a message to the rest of the world, one that we could then encourage other nations to mirror.

The Dual Use Dilemma Must be Considered in the Revised EA

The bio-warfare agent research at Livermore Lab is inherently dual-use. Although DOE states that this BSL-3 is purely defensive – there always remains a chance that they could be used for offensive weapons research at some later point. As mentioned above, the "defensive research" at LLNL will be virtually indistinguishable from "offensive research".

With the secrecy of the program, the US aversion to inspection or verification protocols at the Biological Weapons Convention, the opaque nature of the LLNL Institutional Biosafety Committee, and with the lack of independent transparent oversight, its difficult to tell what type of research will be conducted there.

Transparency Issues Must be Addressed in the Revised EA

Biological defense laboratories study organisms categorized by the federal government as potential agents of bio-terrorism. Controversies in biodefense research stem from both the secrecy with which it is associated and the difficulty in distinguishing between its offensive and defensive applications.

Federally-funded research on biological weapons is marred by a history of secrecy and misinformation, most strikingly in the hidden offensive bio-warfare program carried out by the U.S. military from the beginning of the Cold War through the early 1970s.

Over much of the last thirty years, the Department of Defense has provided an annual report to Congress explaining the nature and extent of its biological research program. After this disclosure policy was discontinued in the early 1990s, there has been growing concern about the potential for offensive research in U.S. biodefense laboratories. The DOE going into the bio-warfare agent research business at its classified nuclear weapons labs does nothing to allay that concern.

Institutional Biosafety Committees must be analyzed in greater depth in the EA:

Tri-Valley CAREs is interested in all aspects of the IBC because of the unique responsibility placed upon the IBC by the EA to ensure that the Livermore Lab's biological research programs comply with all applicable laws and regulations to ensure the health and safety of the Livermore community is protected. The community members are the only unaffiliated members mandated to be on the IBC and therefore they have a heightened responsibility to represent the interests of the community. We are seeking to better understand how they receive their position and the role that they play with respect to the Livermore Lab's IBC. The Revised EA must assess these questions.

For example, the Revised EA should discuss how the community members are appointed / nominated or selected for the Institutional Bio-Safety Committee. We understand that all IBC's have community members sitting on them in order to comply with NIH guidelines. If there is a written policy outlining how the Livermore Lab's IBC chooses its community members, please detail this policy. Otherwise, if there is no formalized policy, describe how you select community members for this committee. Is there an application process? Can community members informally request to be on the committee?

Our experience with trying to obtain information about --and attend meetings of -- the LLNL IBC has continually been frustrated by DOE and LLNL. Lack of transparency has been an ongoing problem.

For example, on September 16, 2003, Tri-Valley CAREs submitted a request for Agendas, Decisional Documents, Minutes, Rules / Procedures by which the Institutional Bio-safety Committee (IBC) operates, and a roster and qualifications for all members for the period of January 1, 2001 forward, pursuant to guidelines established by the National Institute of Health (NIH) that require that the IBC provide these records to the public upon request.

The IBC was established by the Director of the Laboratory in 1991, and operates through the Council on Biology and Biotechnology. The IBC functions as a peer review committee, focusing on the safe and legal use of biological materials.

The Department of Energy declined to comply with our request for copies as provided under the NIH Guidelines, and instead instructed Tri-Valley CAREs to submit our request via the California Public Records Act, a process that would require us to pay burdensome fees to obtain the documents.

On September 25, 2003, Tri-Valley CAREs submitted a Freedom of Information Act (FOIA) request for the same information we had requested above. We submitted this FOIA request in order to better understand the role of the IBC because DOE relies so heavily on this body to ensure that “the public will be involved in approval of BSL-3 research and review of safety and compliance protocol[s].” AR 1:1:C-7 to C-8.

We received responsive documents to this request from the DOE on February 13, 2004. These documents included meeting minutes, agendas, a charter, an IBC roster of members and research applications entitled “Notice of Renewals” that had been issued between January 1, 2001 and the present.

After receiving these documents, we contacted the Department of Energy and requested that agendas be sent to our office for future IBC meetings. We were told that the only way to obtain agendas or other documents was to request them through a time-consuming and burdensome Freedom of Information Act request. We were also told that the IBC meetings were not open to the public on account of the difficult nature of members of the public getting into the Livermore Lab site. The IBC’s refusal to provide agendas and minutes prospectively, and their refusal to allow members of the public to attend their meetings, prevents Tri-Valley CAREs from participating and thwarts public involvement.

These documents also revealed that there had recently been a dramatic increase in applications for experiments conducted within the biological programs at Livermore Lab and that this increase triggered a need for an integrating review of the programs and a rethinking of the purpose of the IBC itself:

"There is a cascade of microbiological applications coming from many new parts of LLNL... causing a rethinking of several functions at the Laboratory, including the role of the IBC, the need for an integrating review system for microbiological research, and revisions to the Lab’s NEPA approval from DOE." -- IBC Memorandum to IBC Committee Members dated April 11, 2001

The DOE relies upon its Site-Wide Environmental Impact Statements as the NEPA reviews that authorize the Livermore Lab’s current bio-programs. These “Site-Wide” studies do not provide enough specific programmatic information about the Biology and Biotechnology Research Program (BBRP) at LLNL. Therefore, the Revised EA must contain the analysis (and, as stated above, a full EIS should be conducted)

The EA must include a detailed analysis of the BBRP, including the role of the IBC, the dangers posed by genetic modification of bio-agents, accident scenarios associated with bio-agents at the lab from earthquakes, fires, transportation, or terrorist threats and without acknowledging the recent significant growth of the bio-programs at Livermore Lab. IBC agreed in its memorandum quoted above that the cascade of applications has triggered a need for an integrating review. It has yet to be done.

In summary, the bio-programs at LLNL, collectively called the BBRP, have undergone tremendous recent growth and now include risky experiments such as aerosolization and genetic modification of agents that are

highly transmissible and virulent. These changes highlight the need for comprehensive review of these programs pursuant to the National Environmental Policy Act.

Further, we note that, "NIH has recognized the importance of IBC members "who represent the interest of the surrounding community with respect to health and protection of the environment." (NIH Guidelines, Section IV-B-2-a-(1)). Section IV-B-2-a-(6) of the NIH Guidelines on Recombinant DNA Research encourage IBC's to follow a policy of openness: When possible and consistent with protection of privacy and proprietary interests, the institution is encouraged to open its Institutional Biosafety Committee meetings to the public.

In October 2003, the National Academy of Sciences recognized this massive growth in US bio-research and issued a report cautioning the U.S. about the hidden dangers of dual-uses of this type of research and lamenting that there were few guidelines in place to prevent the "misuse of the tools, technology, or knowledge base of this research enterprise for offensive military or terrorist purposes." A response to this report calls upon the Institutional Biosafety Committees to ensure that US biodefense work doesn't undermine the BWC.

Please detail how the IBC will ensure that work at LLNL will be transparent, will not weaken or complicate the BWC - and describe the selection process for the IBC members, including scientists and community members.

Conclusion

This comment incorporates all of Tri-Valley CAREs' previous comments on the proposed BSL-3. Moreover, Tri-Valley CAREs requests that all documents cited in our comments be included in the administrative record for the LLNL BSL-3. If DOE cannot locate a document for its record, Tri-Valley CAREs will assist in that endeavor.

Tri-Valley CAREs also submits these comments under protest of DOE's continuing refusal to extend the public comment period and hold at least one public hearing or meeting. We reiterate that the DOE released the Revised EA with no address, phone or fax number for sending comments and no due date. This crucial information was only available in the DOE press release. The lack of availability of comment submittal information is likely to have a deleterious impact on the public's ability to participate. Too, the DOE did not even take the modest, minimal step of informing those who had commented on the original draft EA that the draft Revised EA was now available for comments. Moreover, the short comment period meant that Tri-Valley CAREs' monthly newsletter, carrying the news of the Revised EA via bulk mail will get to our members too late for them to comment by the advertised due date of May 11, 2007.

Then, as noted, the DOE fax number given in its press release did not operate on May 11 (and may not have operated prior to that day for all we know -- we were alerted by about 13 people on May 11).

We appreciate DOE's consideration of these comments. Should an extension be granted, we would like to submit additional comments.

Sincerely,

Marylia Kelley
Executive Director

Loulena Miles
Staff Attorney